Federal Aviation Administration

FAA Aerospace Forecast

Fiscal Years 2015 - 2035

OK 15-0814

Table of Contents

FORECAST HIGHLIGHTS
2015-2035

Since its deregulation in 1978, the U.S. commercial air carrier industry has been characterized by boom-to-bust cycles. The volatility that was associated with these cycles was thought by many to be a structural feature of an industry that was capital intensive but cash poor. However the great recession of 2007-09 marked a fundamental change in the operations and finances of U.S Airlines. Air carriers fine-tuned their business models to minimize losses by lowering operating costs, eliminating unprofitable routes, and grounding older, less fuel efficient aircraft. To increase operating revenues, carriers initiated new services that customers were willing to purchase and started charging separately for services that were historically bundled in the price of a ticket. The industry experienced an unprecedented period of consolidation with four major mergers in five years. These changes along with capacity discipline exhibited by carriers have resulted in a fifth consecutive year of profitability for the industry in 2014. Looking ahead there is optimism that the industry has been transformed from that of a boom-to-bust cycle to one of sustainable profits.

As the economy recovers from the most serious economic downturn since World War II and the slowest expansion in recent history, aviation will continue to grow over the long run. Fundamentally, over the medium and long term, demand for aviation is driven by economic activity. The 2015 FAA forecast calls for U.S. carrier passenger growth over the next 20 years to average 2.0 percent per year, slightly lower than last year's forecast. The sharp decline in the price of oil in 2015 is a catalyst for a short lived uptick in passenger growth. Although oil prices are projected to fall to around $60 per barrel in 2015, our forecast assumes that they will rise over the next five years to exceed $100 by 2021, keeping a lid on U.S. economic growth during the same period. One of the many factors influencing the muted recovery is the uncertainty that surrounds the U.S. and the global economy. The global economy has been hit by a number of headwinds during the past few years, from recession in Europe to a "soft landing" in China and inconsistent performance in other emerging economies. The uncertainty over the future course of oil prices is just one more item on the list. Although the U.S. economy has managed to avoid a double dip recession, a prolonged period of faster economic growth (e.g. > 3%) may not be forthcoming.

System capacity in available seat miles (ASMs) – the overall yardstick for how busy aviation is both domestically and internationally – is projected to increase by 2.4 percent this year after posting a 2.2 percent increase in 2014; it will then grow at an average annual rate of 2.5 percent through 2035. In the domestic market, capacity growth in 2015 is forecast to be 2.8 percent and then grow at an average annual rate of 1.8 percent for the remainder of the forecast period. Domestic mainline carrier capacity is projected to increase 2.6 percent in 2014 after rising 1.8 percent in 2014. For the regional carriers, domestic capacity growth is projected to be 4.0 percent in 2015 after falling in each of the past three years, including a 1.5 percent decline in 2014. Commercial air carrier domestic revenue passenger miles (RPMs) are forecast to increase 2.8 percent in 2015, and then grow at an average of 1.9 percent per year through 2035; domestic enplanements in 2015 will increase 2.6 percent, and then grow at an average annual rate 1.6 percent for the remainder of the forecast period.

The average size of domestic aircraft is expected to increase by 1.1 seats in FY 2015 to 128.2 seats. Average seats per aircraft for mainline carriers are projected to increase by 1.2 seats as network carriers[1] continue to reconfigure their domestic fleets. While demand for 70-90 seat aircraft continues to increase, we expect the number of 50 seat regional jets in service to fall, increasing the average regional aircraft size in 2015 by 0.8 seats to 57.8 seats per mile. Passenger trip length in all domestic markets will increase by 2.8 miles during the same period.

General aviation market continues its recovery. In 2014, the turbo jet sector recorded its first increase in deliveries by U.S. manufacturers since 2008. For a third year in a row, single engine piston deliveries have increased. The long term outlook for general aviation is favorable, and near term also looks promising especially for piston aircraft activity which is sensitive to fuel price movements. While it is slightly lower than predicted last year, the growth in business aviation demand over the long term continues. As the fleet grows, the number of general aviation hours flown is projected to increase an average of 1.4 percent per year through 2035.

After sputtering in the early part of 2014, the U.S. economy began to show improvement in the latter half of 2014 while the economies in the rest of the world showed mixed results. With lower energy prices, U.S. carrier profitability should remain steady or increase as an economy in its sixth year of recovery leads to strengthening demand and increased revenues, while operating costs are falling or stable. Over the long term, we see a competitive and profitable aviation industry characterized by increasing demand for air travel and airfares growing more slowly than inflation, reflecting over the long term a growing U.S. economy.

[1] Alaska Airlines, American Airlines, United Airlines, Delta Airlines, and U.S. Airways.

REVIEW OF 2014

The year 2014 began with a good deal of uncertainty which never really let up. Despite the uncertainty surrounding the impacts of a government shutdown, severe winter weather, slow economic growth in Europe and Japan, 2014 saw the U.S. airline industry post solid results. The changes that U.S. carriers have made since the start of the global recession in 2008 helped the industry to make a profit for the fifth year in a row. Many industry professionals see these changes as providing traction towards profitability, even during future periods of uncertainty. The biggest change that U.S. passenger airlines have made is the shift in focus from increasing market share to one of boosting shareholder return on investment. The U.S. airline industry has become more nimble adjusting capacity either upward or downward to seize opportunities or minimize losses. U.S. airlines have developed additional revenue streams such as charging fees for services that used to be included in airfare (e.g. meal service), as well as for charging for services that were not previously available (e.g. premium boarding and fare lock fees). The impact from these initiatives gives reason for optimism as the industry (passenger and cargo carriers combined) posted profits for the fifth consecutive year in 2014.

Demand for air travel in 2014 grew at a modest pace amid an improving economic environment in the U.S. In 2014[2] system revenue passenger miles increased 2.5 percent as enplanements increased 2.3 percent. Commercial air carrier domestic enplanements were up by 2.1 percent, while international enplanements were up 3.4 percent. The system-wide load factor rose to 83.4 percent (up 0.2 points from 2013). Domestic enplanement market share continued to rise for low-cost, network, and "other" carriers in 2014 while regional carrier share decreased. Domestic low cost carrier enplanement share increased by 0.3 points to 29.5 percent, while the share of network and "other" carriers rose by 0.4 points to 47.4 percent. Regional carrier share dropped by 0.8 points to 23.0 percent.

Improving yields helped by continued capacity restraint by the carriers helped boost industry profits in FY 2014. Data for FY 2014 show that the reporting passenger carriers had a combined operating profit of $14.9 billion (compared to a $9.6 billion operating profit for FY 2013). The network carriers reported combined operating profits of $11.1 billion while the low cost carriers reported combined operating profits of $3.2 billion, with all carriers posting profits.

The general aviation market showed improvements in business jet and single engine piston segments, while declines in turboprop and multi-engine piston markets translated into a slight overall improvement. Overall deliveries were up by 1.0 percent in calendar year (CY) 2014; with a 5.6 percent increase in U.S. billings. Single engine piston shipments were up for the third year in a row, by 6.2 compared to the previous year. Because of a 10.0 percent decrease in the smaller multi-engine category, total piston aircraft shipments by U.S. manufacturers went up by 4.5 percent. Business jet shipments increased by 12.3 percent. However, an 11.2 percent decline in the turboprop deliveries generated a 2.1 percent decrease in turbine aircraft

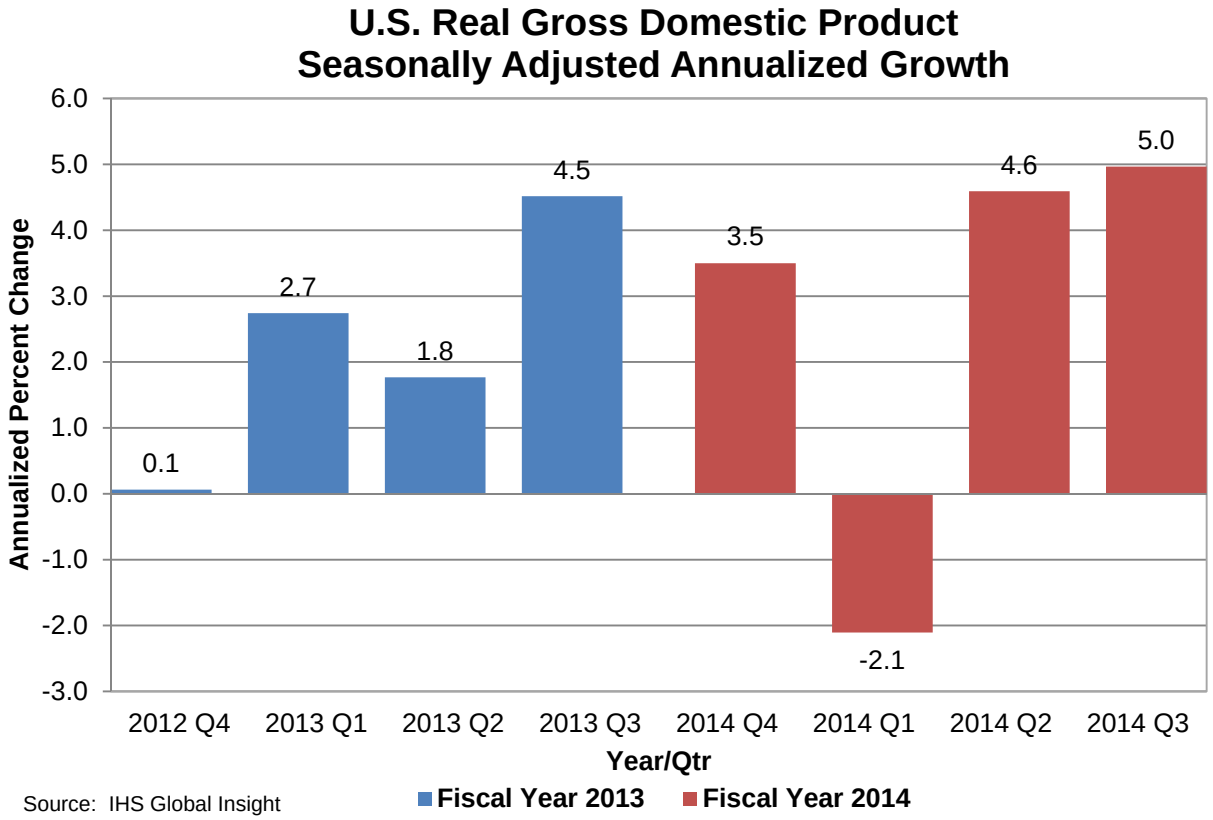
[2] All stated years and quarters for U.S. economic and U.S. air carrier traffic and financial data and forecasts are on a fiscal year (FY) basis (October 1 through September 30). All stated years and quarters for international economic and world traffic and financial data are on a calendar year (CY) basis, unless otherwise stated.

shipments (total of turboprop and business jets) by U.S. manufacturers in CY 2014. Turboprop shipments, which had increased by 13.8 percent in 2013, were nearly back to their 2012 levels. General aviation activity at FAA and contract tower airports recorded a 1.1 percent decline in 2014, which was caused by a decrease in itinerant activity; local operations were slightly down (0.6 percent) compared to previous year.

Total operations at FAA and contract towers fell again in 2014 by 0.9 percent, as activity declines in the air taxi, general aviation, and military categories offset an increase in air carrier activity. Activity at large hubs fall by 0.5 percent, while medium hubs and small/non hub airports saw declines of 1.6 percent and 0.9 percent, respectively. With increasing numbers of regional and business jets in the nation's skies, fleet mix changes, and carriers consolidating operations in their large hubs, we expect increased activity growth which has the potential to increase controller workload.

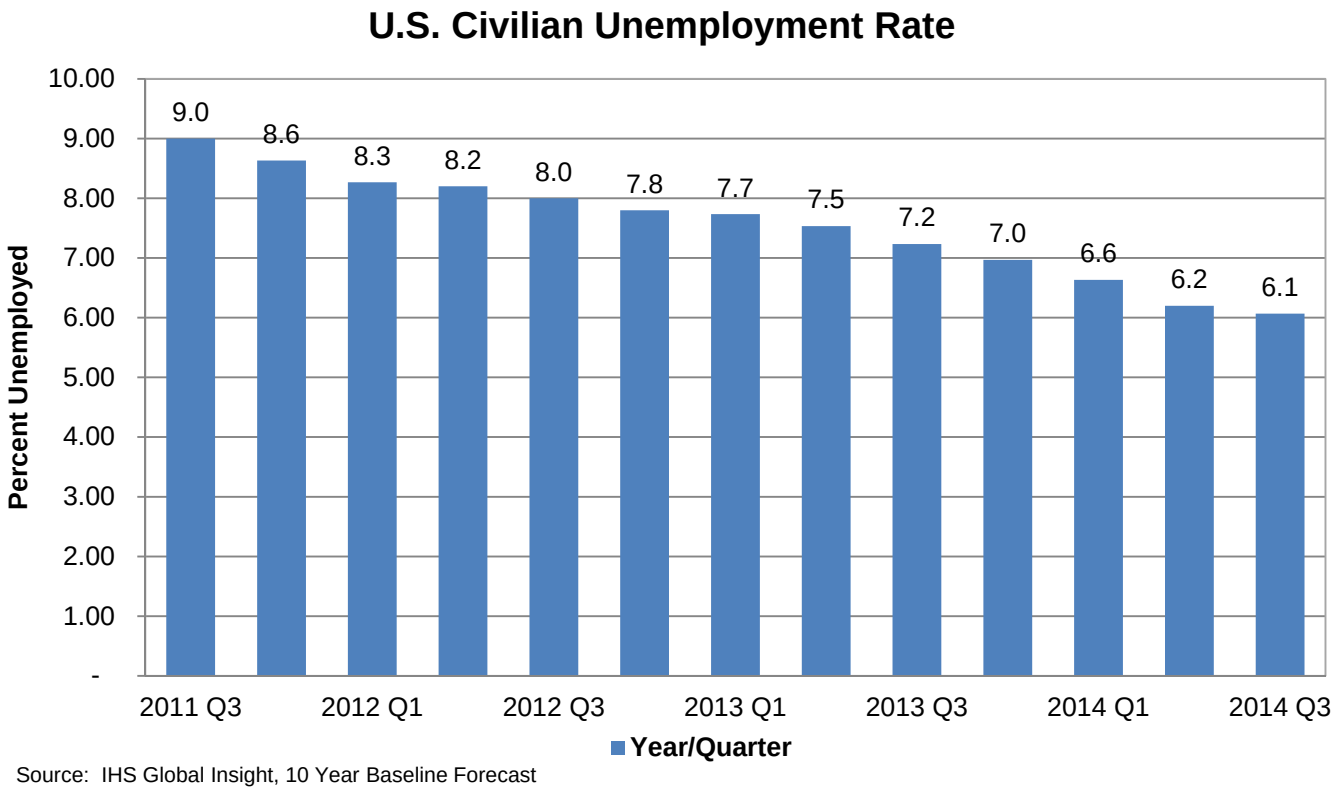
U.S. ECONOMIC ACTIVITY

U.S. economic performance in 2014 continued to be mixed with modest growth in real GDP and real incomes, a falling unemployment rate, and oil prices and consumer inflation remaining in check. The economy grew at an average annual rate of 2.6 percent in fiscal year (FY) 2014 after expanding 1.8 percent in FY 2013. GDP growth was strong in the second half of the year after shrinking in the second quarter due to the negative effects of the polar vortex. There were favorable signs in the data as the stock market entered record territory, and the labor market saw steady improvement with almost 2.8 million new jobs created during the year, the best figure since 1999.



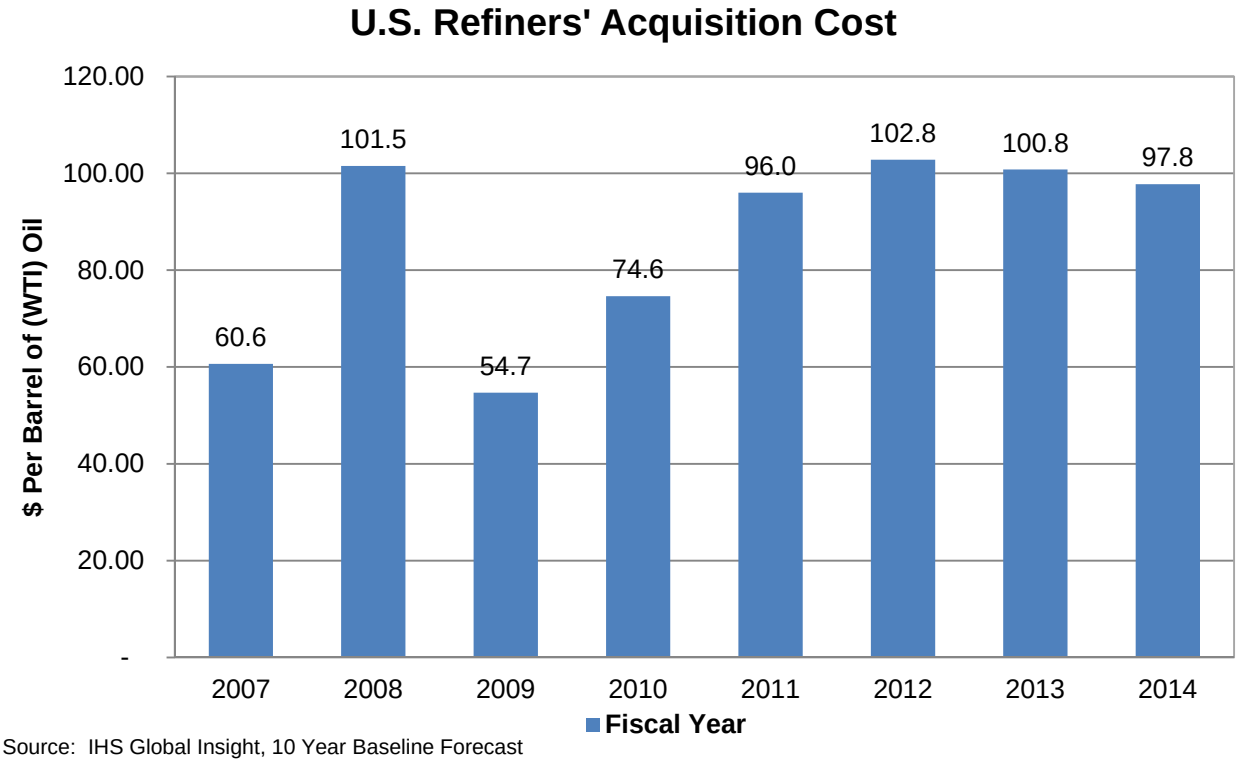
Source: IHS Global Insight

Much had been written about the weak rate of job creation and the slow improvement of the nation's unemployment rate during the course of the current economic recovery. In FY 2014, the rate of job creation picked up, and the improvement in the labor market was reflected in the falling unemployment rate. At the beginning of FY 2014, the nation's unemployment rate stood at 7.2 percent and steadily fell throughout the year, falling to 5.9 percent in September 2014, a 1.3 point decline over the course of the year, the largest annual decline in the current expansion.



Source: IHS Global Insight, 10 Year Baseline Forecast

The price of oil, as measured by the U.S. Refiners' Acquisition Cost (for West Texas Intermediate, or WTI), remained relatively stable in FY 2014, averaging $97.76 per barrel, down 3.0 percent from the FY 2013 figure of $100.78.



Source: IHS Global Insight, 10 Year Baseline Forecast

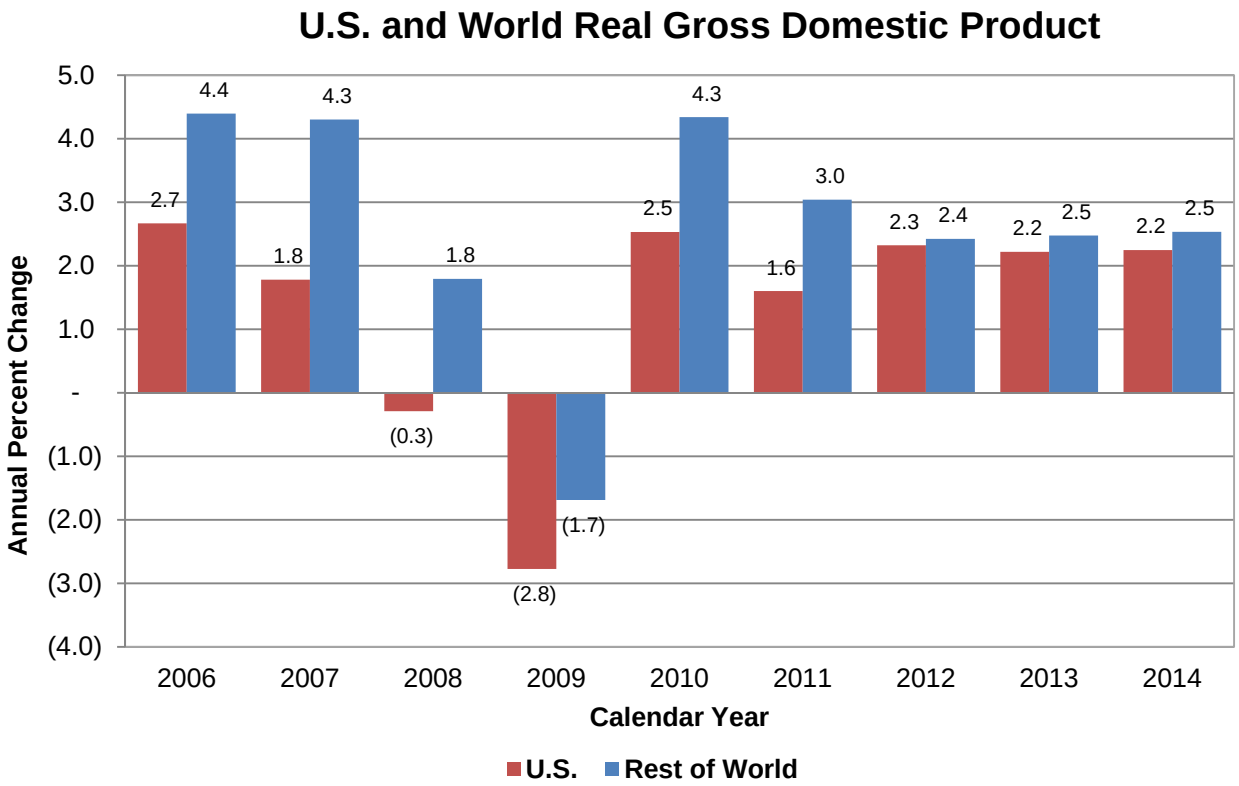
Finally, consumer prices increased at a modest rate in 2014. Core inflation (excluding food and energy) was moderate (1.7 percent); while headline inflation (including food and energy) was up 1.6 percent as energy prices increased just 0.4 percent.

WORLD ECONOMIC ACTIVITY

Based on preliminary figures,[3] the U.S. and rest of the world economies both grew 2.5 percent in 2014. The advanced economies (U.S., Western Europe, Japan, Australia, New Zealand, and Canada) expanded 1.7 percent overall.

All world regions saw their economies grow. The combined economies of the Asia-Pacific region grew the fastest (4.3 percent), Europe (1.4 percent) and the U.S. had only moderate growth, while Latin America and the Caribbean had the lowest growth (0.9 percent) Among the countries with the largest economies, China, India and Indonesia grew the fastest (7.3, 5.9 and 5.1, respectively) while Japan only grew 0.2 percent. In Europe, Ireland had the largest growth at 5.0 percent, followed by Poland at 3.3 percent. Canada slightly edged out the U.S. at 2.4 percent.[4]

Overall, the Asia-Pacific, region excluding Japan, is still the world leader in GDP growth (5.7 percent), followed by Sub-Saharan Africa (4.5 percent), then Central Europe and the Balkans (2.6 percent). The Non-OECD countries (4.1) percent) had an almost four fold increase over the OECD countries (1.7) in 2014.[5]



Source: IHS Global Insight

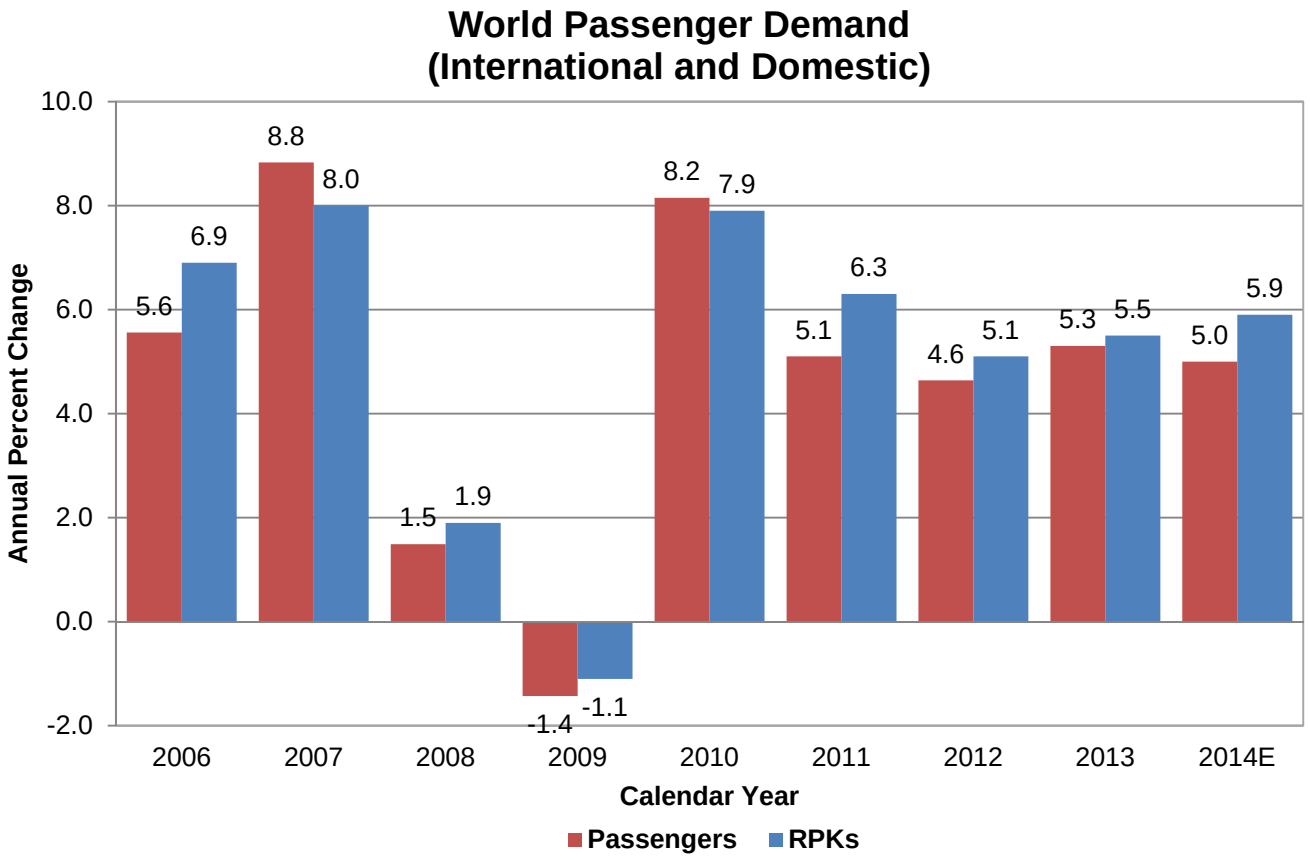
[3] IHS Global Insight.
[4] Ibid.
[5] Ibid.

COMMERCIAL AVIATION

Worldwide commercial aviation continued a slow recovery in 2014 as stable jet fuel prices offset relatively disappointing global economic growth. The U.S. industry posted a net profit in 2014, with a similar outcome predicted for foreign carriers. After registering net profits of $10.6 billion in 2013, global industry net profits for calendar year 2014 are expected to be $19.9 billion.[6] All global regions are projected to see an increase in profits as fuel costs fell.

World Travel Demand

Based on data compiled by the International Civil Aviation Organization (ICAO), world air carriers are expected to post another moderate growth performance in CY 2014 as demand for air travel continues to recover from the depressed levels recorded during 2009. Preliminary traffic results for full year 2014 released by ICAO show worldwide revenue passenger kilometers (RPKs) increased 5.9 percent, a 0.4 percentage point increase compared to last year's growth rate.[7]

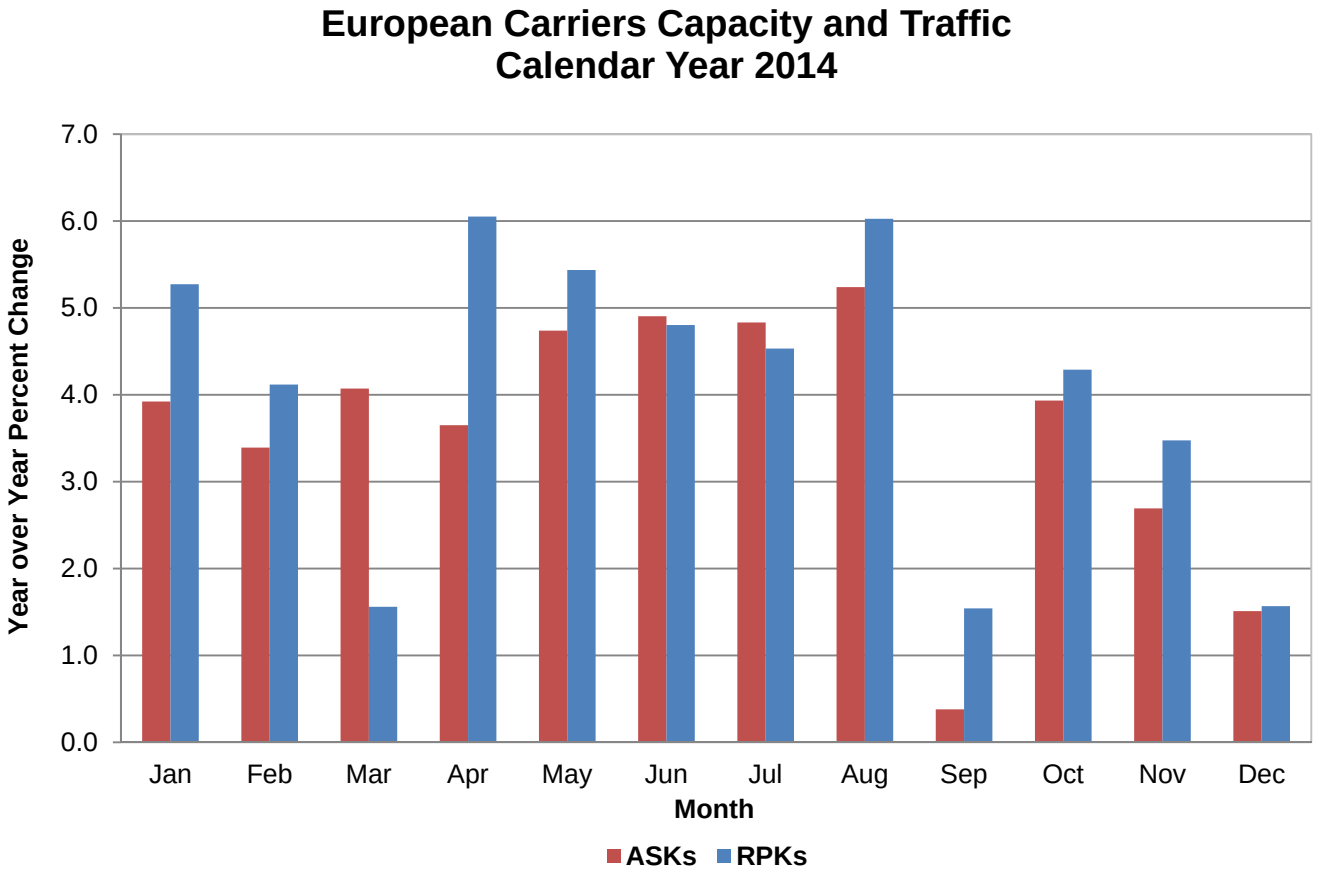


[6] IATA Economic Performance of the Airline Industry, End Year Report, December 2014.

[7] ICAO press release dated December 18, 2014.

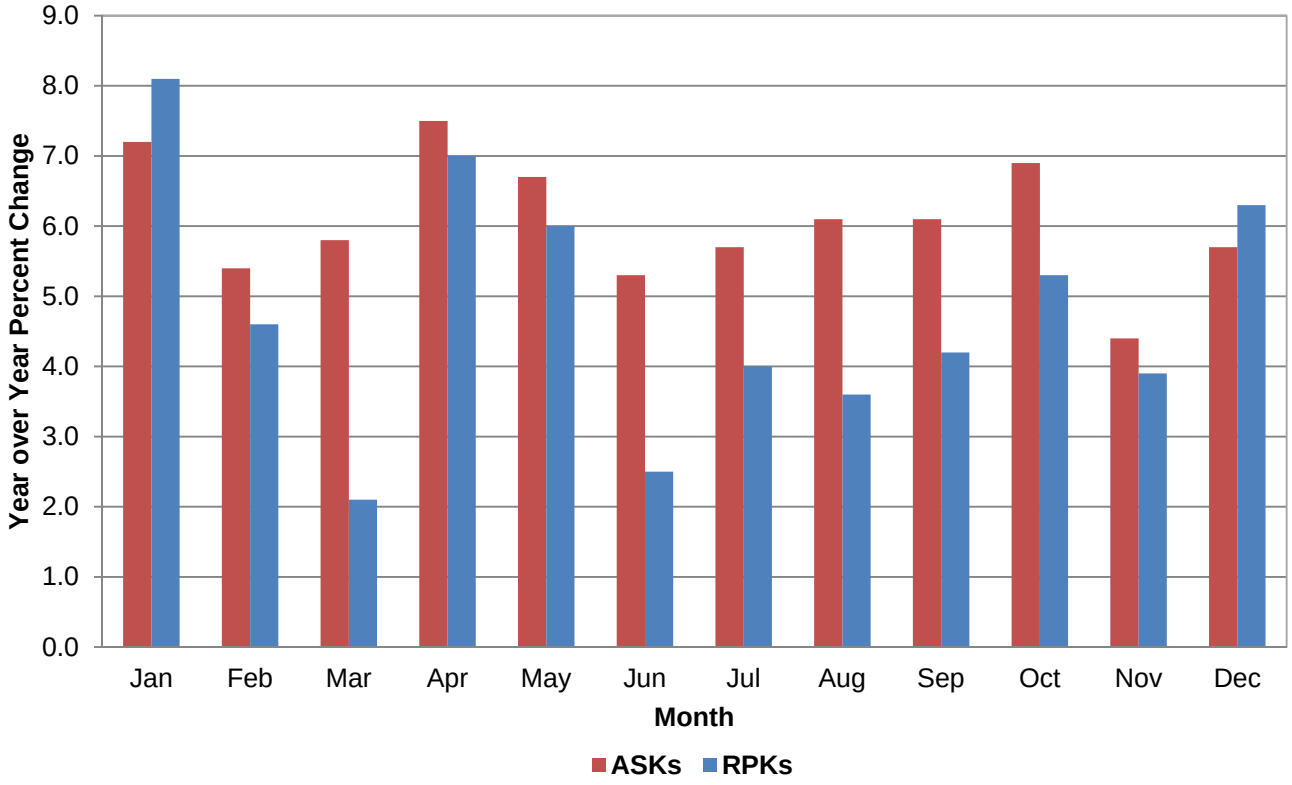
For calendar year 2014, preliminary data from ICAO show passengers were up 5.0 percent over calendar year 2013. Data for the same period shows capacity, as measured by available seat kilometers (ASKs), to be up 5.7 percent.

Traffic and capacity data from the Association of European Airlines (AEA) for calendar year 2014 showed year over year gains in RPKs ranging between 1.5 percent to 6.1 percent and year over year changes in ASKs ranging between 0.4 percent to 5.2 percent.



The Association of Asia Pacific Airlines (AAPA) reported an increase of 4.7 percent in international RPKs and a 6.0 percent increase in international ASKs; international passengers in the region were up 4.8 percent during the same period.[8]

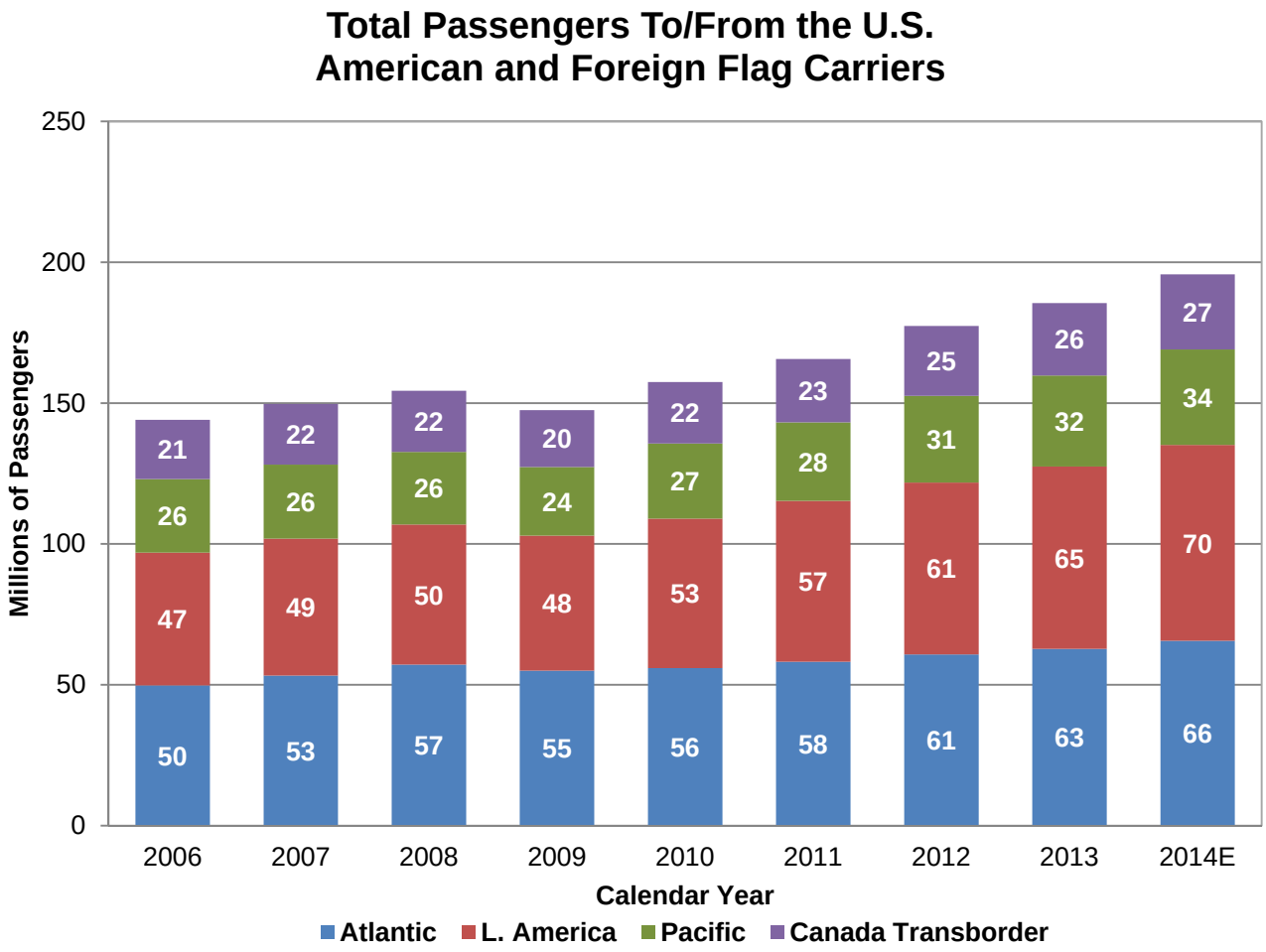
Asia Pacific Carriers International Capacity and Traffic
Calendar Year 2014



Source: Association of Asia Pacific Airlines

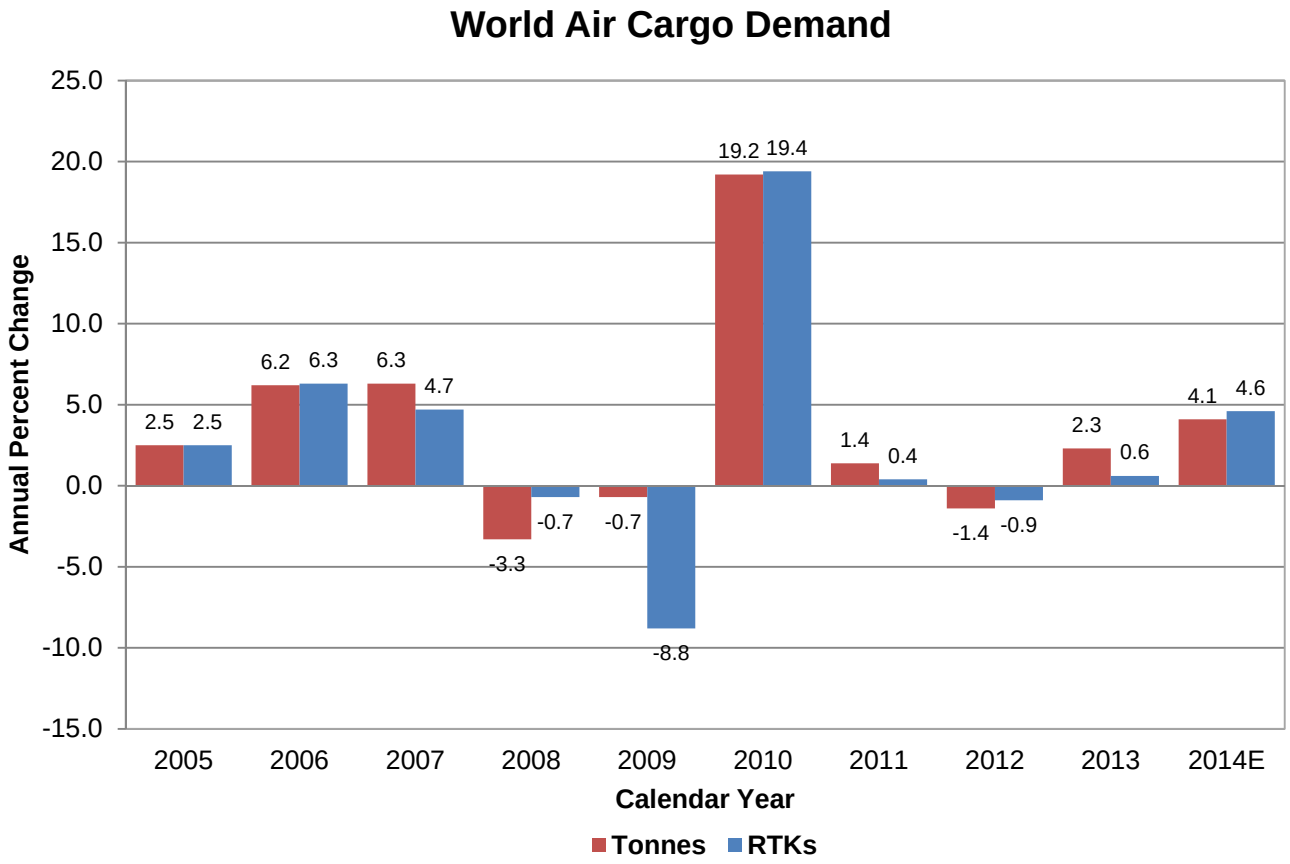
[8] Association of Asia Pacific Airlines, "Asia Pacific Full Year 2014 Traffic Results", Press Release dated 28 January 2015, Issue 2015: 02.

In CY 2014, U.S. and foreign flag carriers transported an estimated 195.7 million passengers between the United States and the rest of the world, a 5.5 percent increase from 2013. Year-over-year growth occurred in all markets (up 4.6, 7.4, 4.9, and 3.5 percent, respectively, for Atlantic, Latin America, Pacific, and Canada Transborder).



Source: US Customs & Border Protection data processed and released by Department of Commerce; data also received from Transport Canada

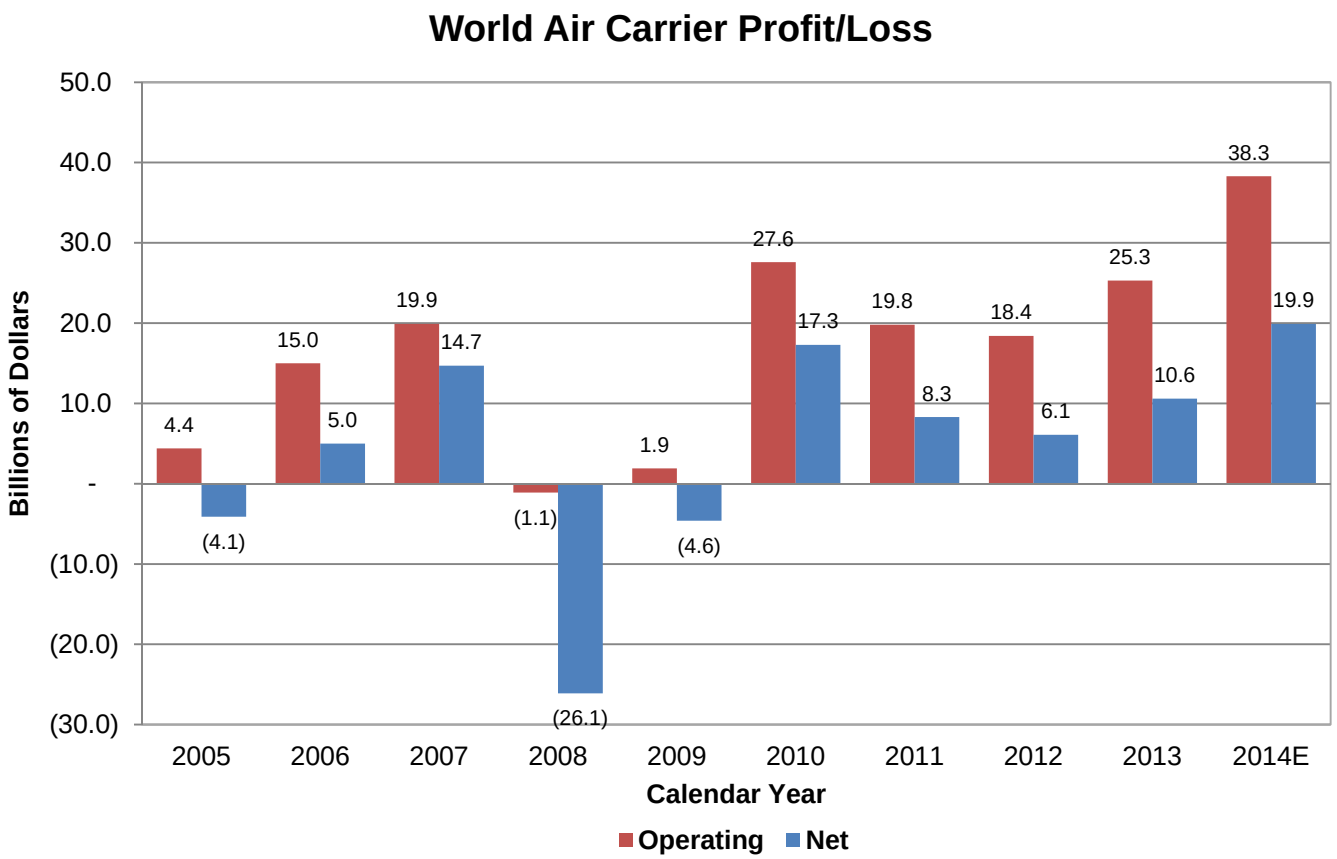
Worldwide air cargo demand increased strongly in 2014. According to ICAO, worldwide freight ton kilometers were estimated to increase 4.6 percent in calendar year 2014 compared to 2013. Freight ton kilometers (FTKs) of AEA member carriers fell 2.0 percent in calendar year 2014 while the international FTKs of AAPA member carriers rose 5.4 percent.



Source: IATA

The International Air Transport Association (IATA) reports that world air carriers (including U.S. airlines) are expected to register an operating profit of $38.3 billion for 2014. IATA estimates global airline industry net profits to be $19.9 billion for the same period with all regions to be in the black. Based on financial data compiled by ICAO and IATA, between 2004 and 2014 world airlines produced cumulative operating profits of $172.8 billion (with ten years out of eleven posting gains) and net profits of $41.5 billion (with seven years out of eleven posting gains).[9]

[9] IATA Financial Forecast, December 2014.


World Air Carrier Profit/Loss
Billions of Dollars
50.0
40.0
30.0
20.0
10.0
-
(10.0)
(20.0)
(30.0)
4.4
(4.1)
15.0
5.0
19.9
14.7
(1.1)
(26.1)
1.9
(4.6)
27.6
17.3
19.8
8.3
18.4
6.1
25.3
10.6
38.3
19.9
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014E
Calendar Year
Operating
Net

Source IATA

U.S. Travel Demand

By year end of FY 2014, the U.S. commercial aviation industry consisted of 16 scheduled mainline air carriers that used large passenger jets (over 90 seats) and 70 regional carriers that used smaller piston, turboprop, and regional jet aircraft (up to 90 seats) to provide connecting passengers to the larger carriers. Mainline and regional carriers offer domestic and international passenger service between the U.S. and foreign destinations, although regional carrier international service is confined to the border markets in Canada, Mexico, and the Caribbean. Twenty-six all-cargo carriers were providing domestic and/or international air cargo service at the end of 2014.

Shaping today's commercial air carrier industry are three distinct trends: (1) continuing industry consolidation and restructuring; (2) continued capacity discipline in response to external shocks, and (3) the proliferation of ancillary revenues.

The restructuring and consolidation of the U.S. airline industry that began in the aftermath of the terror attacks of September 11, 2011 continued in 2014. During the year, Southwest continued to integrate the former AirTran network into its operations while American and US Airways moved ahead with combining their networks and reservations systems. Consequently, when compared to 2007, 5.7 percent fewer domestic ASMs were flown and 2.9 percent less passengers were carried domestically in 2014. This has had clear implications on the size of the aircraft being used and the load factors, topics that will be discussed later in this document.

One of the most striking outcomes of industry restructuring has been the unprecedented period of capacity discipline, especially in domestic markets. Between 1978 and 2000, ASMs in domestic markets increased at an average annual rate of 4 percent a year, recording only two years of decline. Even though domestic ASMs shrank by 6.9 percent in FY 2002, following the events of September 11, 2001, growth resumed and by 2007, domestic ASMs were 3.6 percent above the FY 2000 level. However, since 2007, U.S. domestic market ASMs have decreased by 5.7 percent, as the industry responded first to the sharp rise in oil prices (up 155% between 2004 and 2008) and then the global recession that followed (2009 to the present).

The 5.7 percent reduction in domestic capacity since 2007 has not been shared equally between the mainline carriers and their regional counterparts. To better match demand to capacity, the mainline carriers contracted out "thin" routes to their regional counterparts because they could provide lift at a lower cost, or else they simply removed the capacity altogether. In 2014, the mainline carrier group provided 6.3 percent less capacity than it did in 2007 (and carried 3.6 percent fewer passengers). Capacity flown by the regional group has shrunk by 1.9 percent over the same period (with passengers carried down 0.7 percent).

The most recent trend to take hold is that of ancillary revenues. Carriers generate ancillary revenues by selling products and services beyond that of an airplane ticket to customers. This includes the un-bundling of services previously included in the ticket price such as checked bags and on-board meals, and by adding new services such as boarding priority. As noted earlier, U.S. passenger carriers posted net profits for the fifth consecutive year in 2014 with ancillary revenues a contributing factor to the favorable outcome.

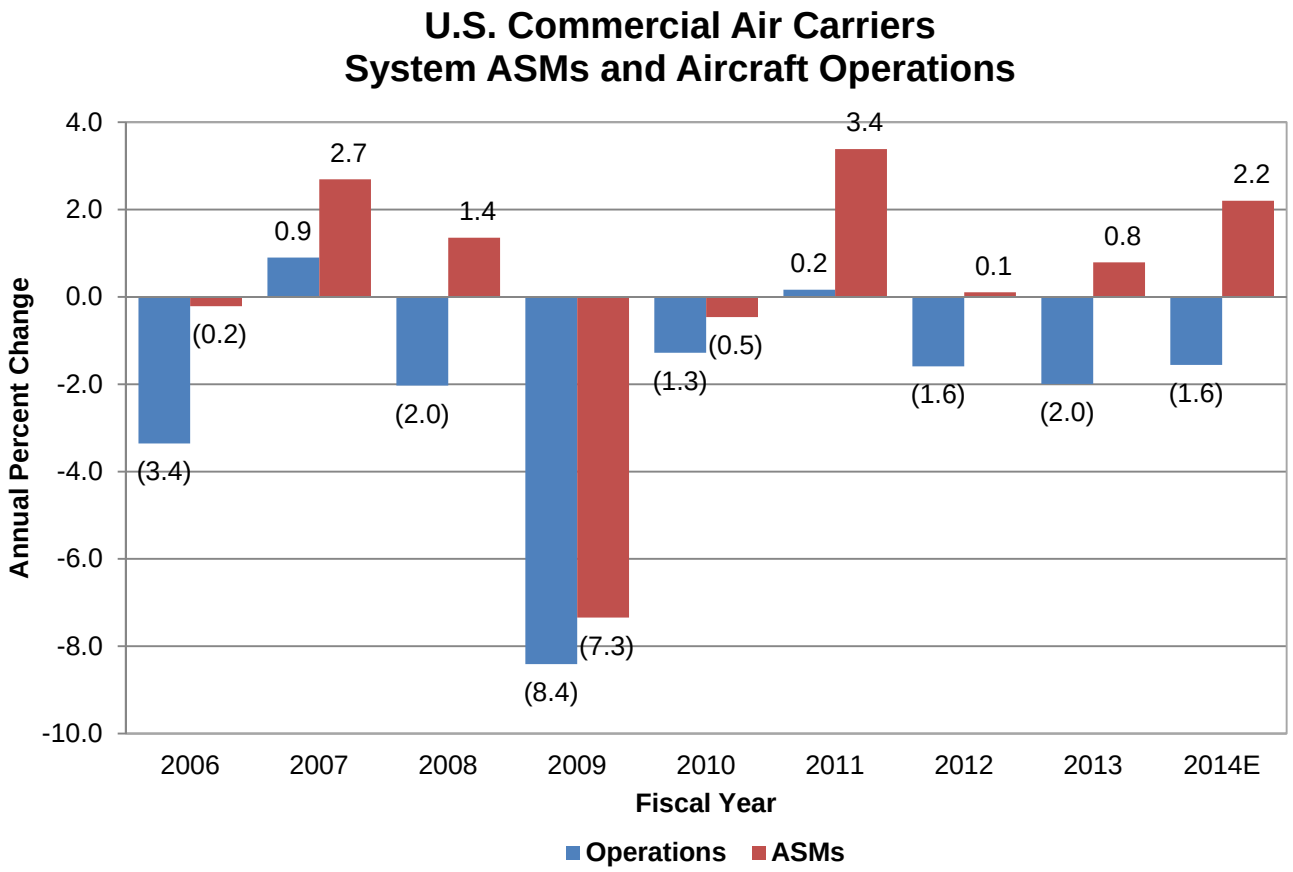
Commercial Air Carriers – Passenger

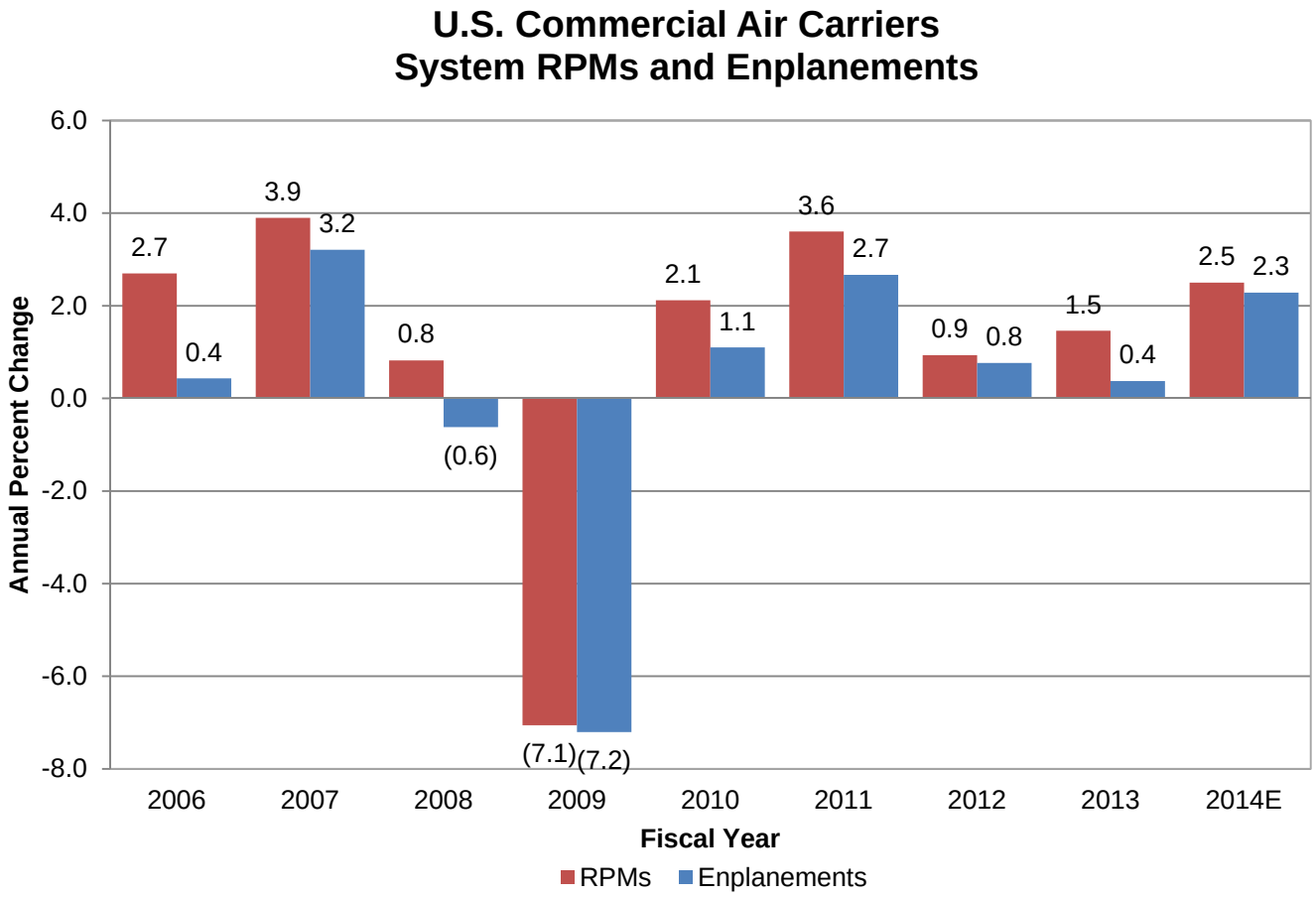
U.S. commercial air carriers' traffic and capacity in 2014 showed mild growth for the second year in a row which is an improvement over 2013. System, that is, the sum of domestic plus international capacity, increased 2.2 percent to 1.025 trillion ASMs while RPMs increased 2.5 percent to 855.1 billion. During the same period system-wide enplanements increased 2.3 percent to 756.3 million; U.S. mainline carrier enplanement growth was 3.0 percent while regional carriers carried 0.2 percent fewer passengers. In the domestic market, mainline enplanements saw an increase for the fourth consecutive year, up 2.9 percent, marking the first time since 2000 that the industry recorded four consecutive years of passenger growth in the domestic market. Mainline passengers in international markets posted a fourth year of growth, up 3.6 percent.

Even though the recession was officially over in June 2009[10], carriers continued to face economic uncertainty in 2014 as corporate travel budgets remained strained, unemployment was still high relative to the early 2000s, the housing market remained volatile, and government spending remained stagnant. In such an uncertain, but slowly improving, environment, industry capacity growth was restrained (up 2.2 percent), after only a 0.8 percent increase in 2013. Given the minimal increase in seats available to the travelling public, carriers were still able to raise airfares despite the slow growth in demand. Higher airfares and ancillary revenues, coupled with flat to rapidly falling fuel prices resulted in U.S. carriers finishing up 2014 with a net profit.

System load factor and trip length continued to edge slightly upwards in 2014, even as seats per aircraft mile increased. The average load factor reached a record-breaking 83.4 points, up 0.3 points from 2013 while passenger trip length increased 2.4 miles, to 1,131 miles. Seats per aircraft mile increased to 145.2 seats (up 2.3 seats per aircraft mile), the highest level since 1999.

[10] According to the National Bureau of Economic Research.

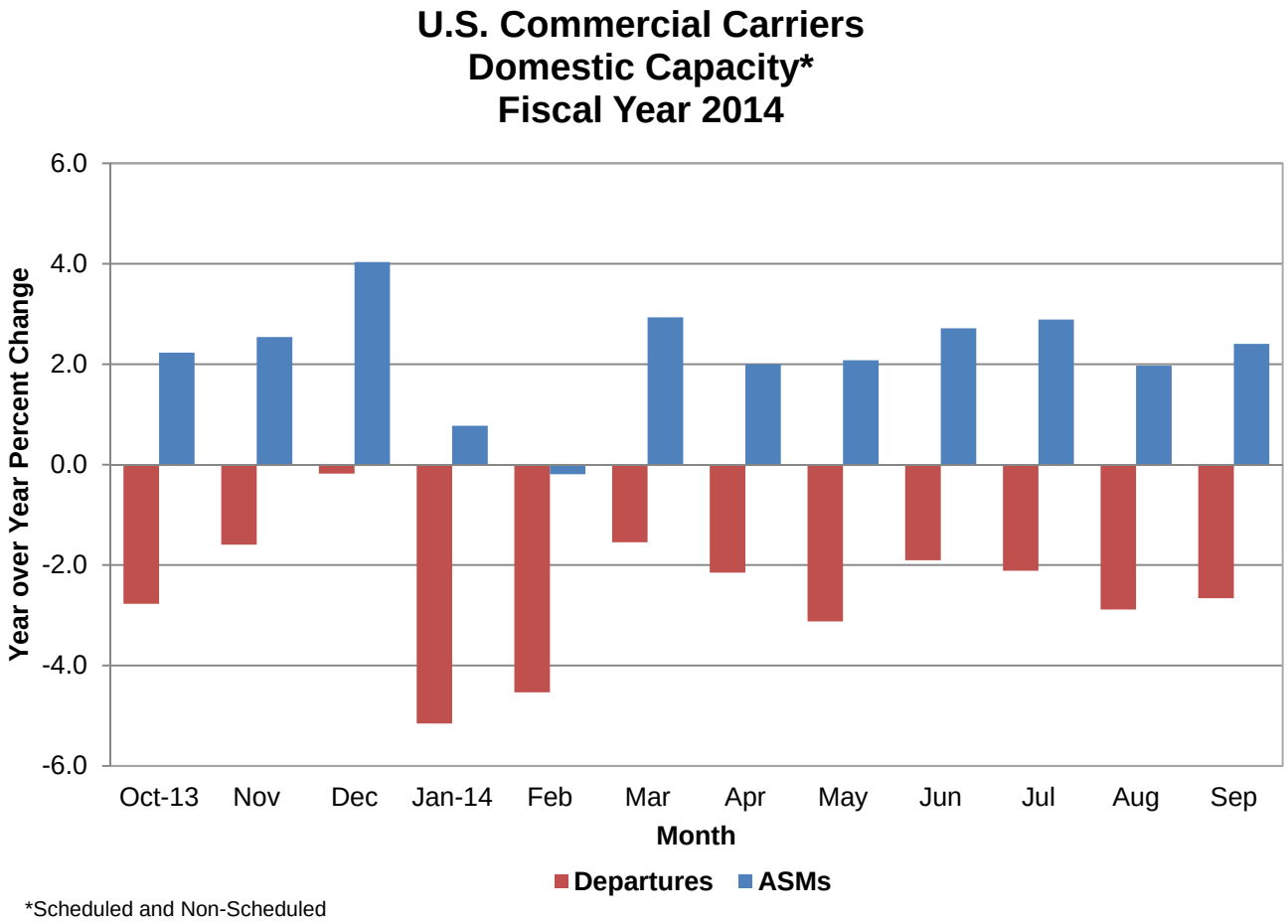

U.S. Commercial Air Carriers
System ASMs and Aircraft Operations
Annual Percent Change
4.0
2.0
0.0
-2.0
-4.0
-6.0
-8.0
-10.0
(3.4)
(0.2)
0.9
2.7
(2.0)
1.4
(8.4)
(7.3)
(1.3)
(0.5)
0.2
3.4
(1.6)
0.1
(2.0)
0.8
(1.6)
2.2
2006
2007
2008
2009
2010
2011
2012
2013
2014E
Fiscal Year
Operations
ASMs



Domestic Passenger Markets

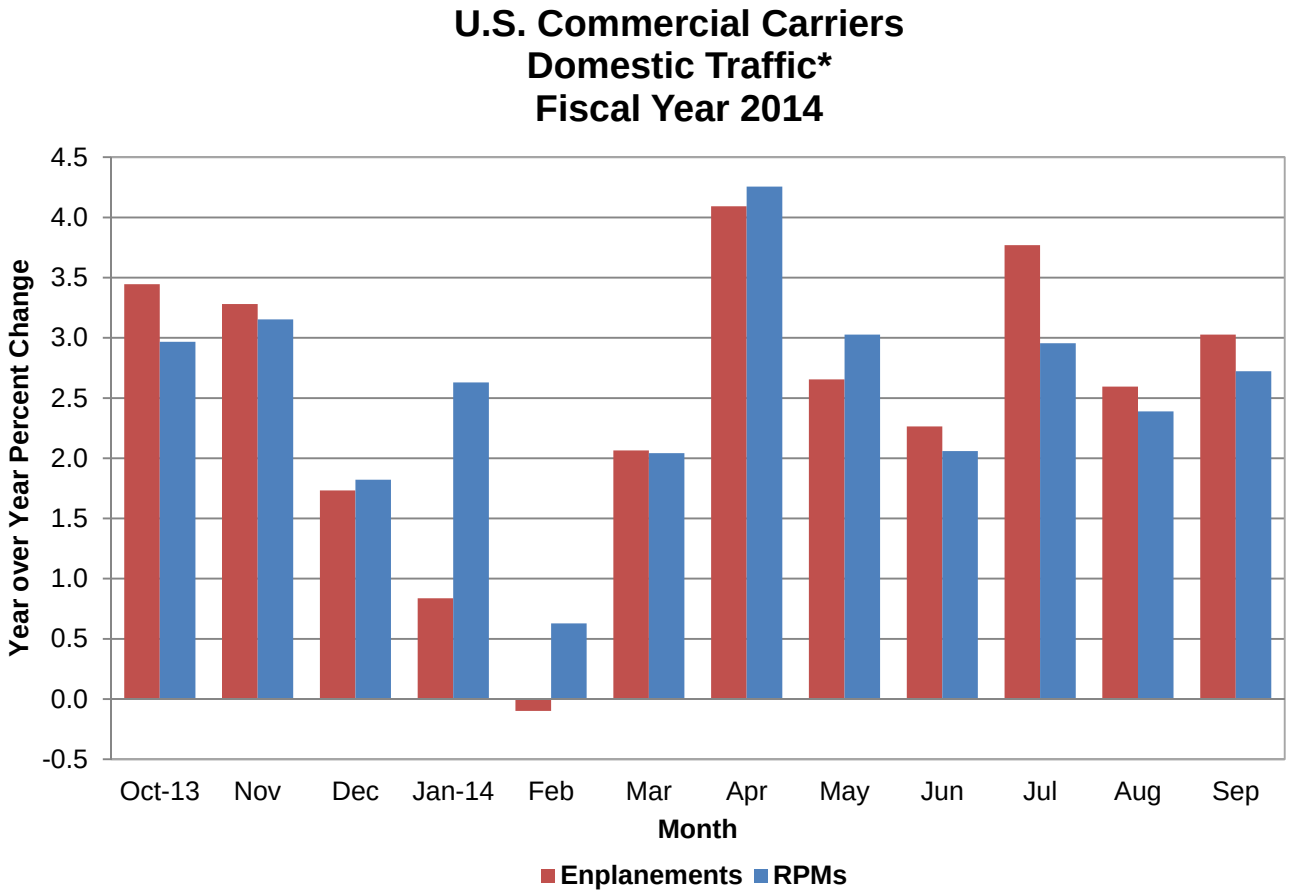
Domestic[11] ASMs increased 1.4 percent in 2014 after increasing just 0.8 percent in 2013. Departures were down 1.9 percent for the year after falling 2.1 percent in FY 2013. Mainline carrier ASMs were up 1.8 percent for the year, while regional carrier ASMs fell 1.5 percent. At the end of FY 2014, domestic ASMs were still 5.7 percent below pre-recession levels (2007) with departures down 17.3 percent.

[11] The 50 states, Puerto Rico, and the U.S. Virgin Islands.



*Scheduled and Non-Scheduled

In a turnaround from 2013, domestic passenger enplanements grew at a faster rate than ASMs in 2014, up 2.1 percent for the year. Mainline carrier enplanements were up 2.9 percent for the year while regional carrier enplanements fell 0.2 percent, continuing the downward trend that began in 2011.



*Scheduled and Non-Scheduled

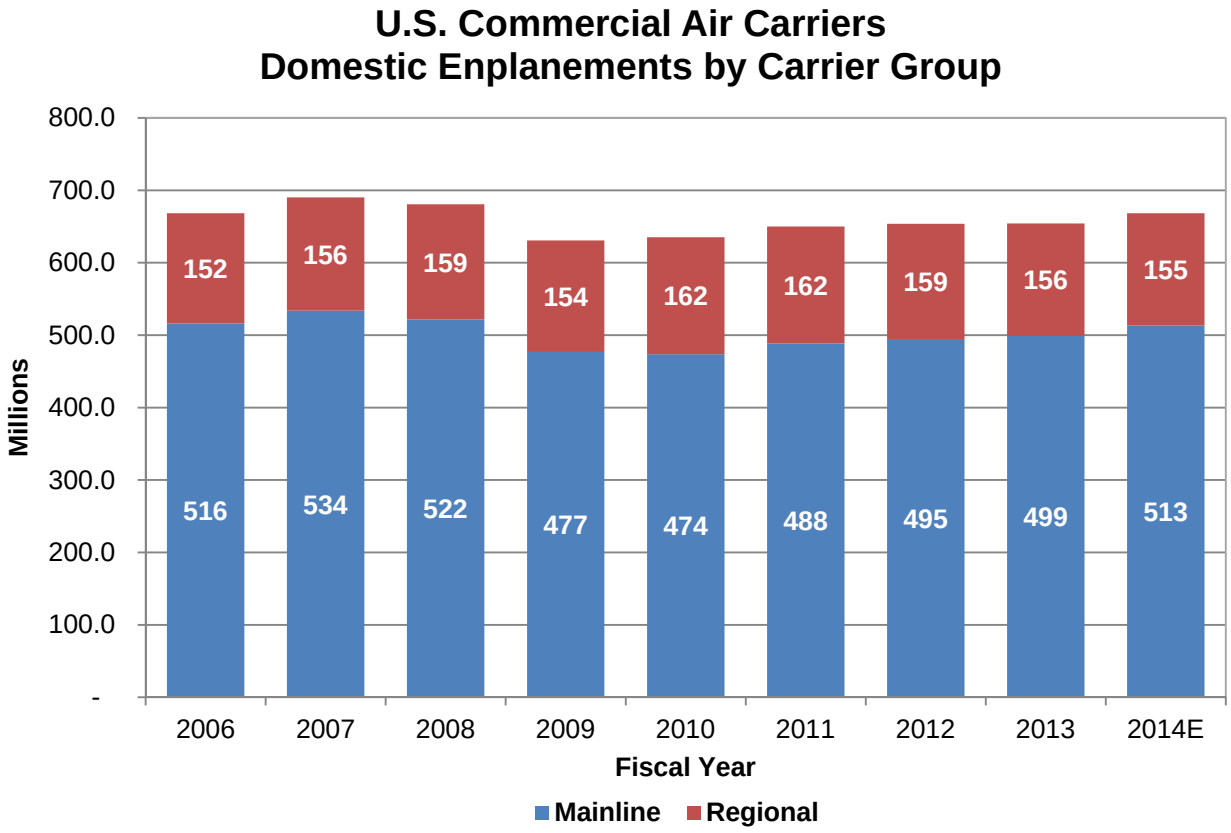
Domestic RPMs also grew faster than ASMs in FY 2014 with domestic RPMs up 2.5 percent and mainline carrier RPM growth was 2.8 percent, while regional carrier RPMs increased 0.5 percent.

Domestic carrier load factor increased1.1 points to 84.4 percent, with both the mainline and regional carriers groups posting record high loads. Mainline carrier load factor increased 0.8 points from FY 2013 to 85.0 percent, while regional carrier load factor increased 1.6 points to 80.0 percent.

Since FY 2007, total domestic capacity has decreased by 5.7 percent. Mainline carriers have reduced their domestic capacity by 6.3 percent with cutbacks by network carriers more than offsetting the growth of low-cost carriers, while regional carrier capacity has declined by a smaller amount (down 1.9 percent since 2007).

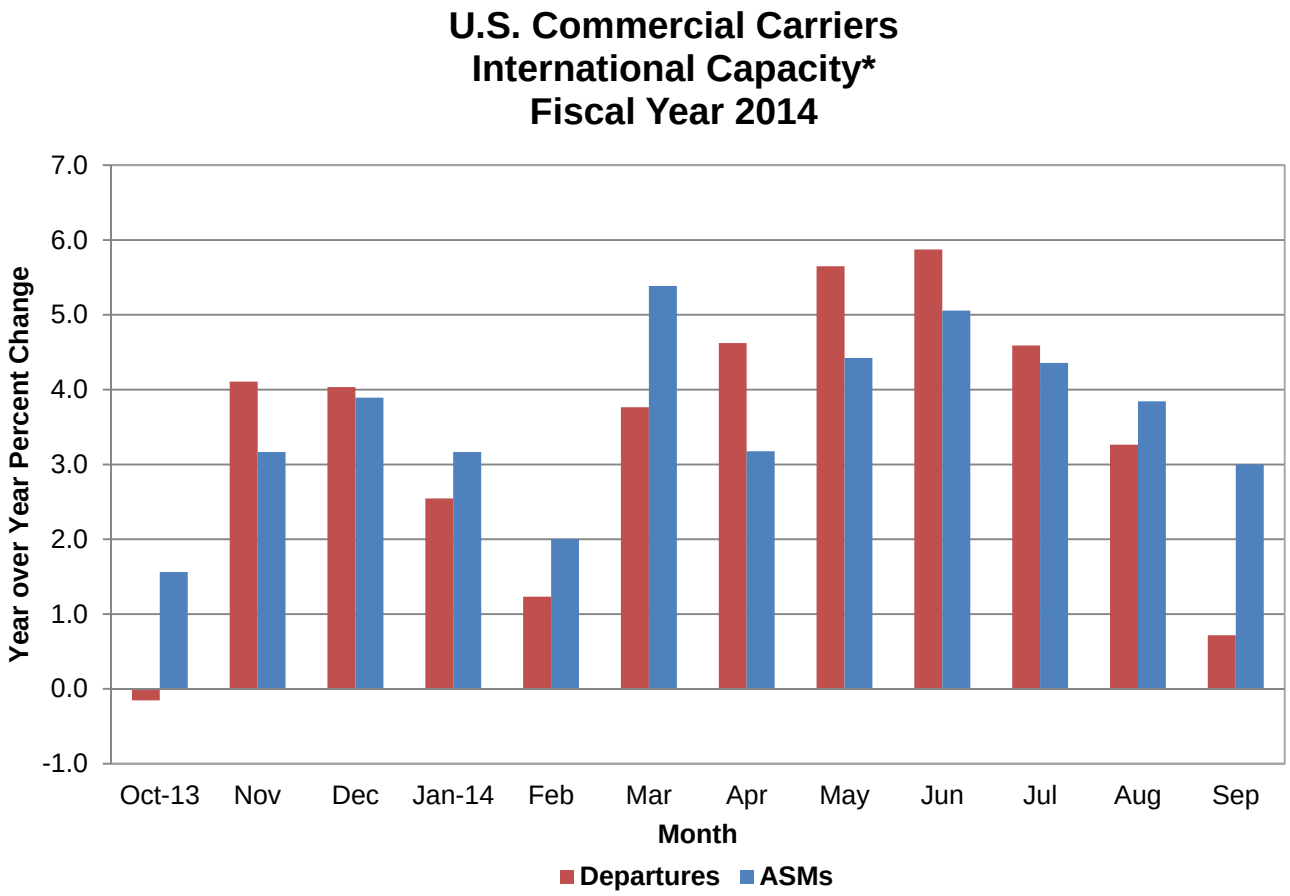
During the same period, mainline carrier RPMs have decreased 0.9 percent, while enplanements have fallen 3.6 percent. In comparison, over this same period, regional carrier RPMs increased 4.0 percent while enplanements have fallen 0.7 percent. As a result, mainline carrier domestic capacity share has fallen from 87.6 percent in 2007 to 87.1 percent in 2014, with the share of domestic RPMs flown by mainline carriers dropping from 88.3 percent to 87.7

percent during the same period. In 2014 the regional carriers' domestic enplanement share was 23.2 percent, up from 22.6 percent in 2007.



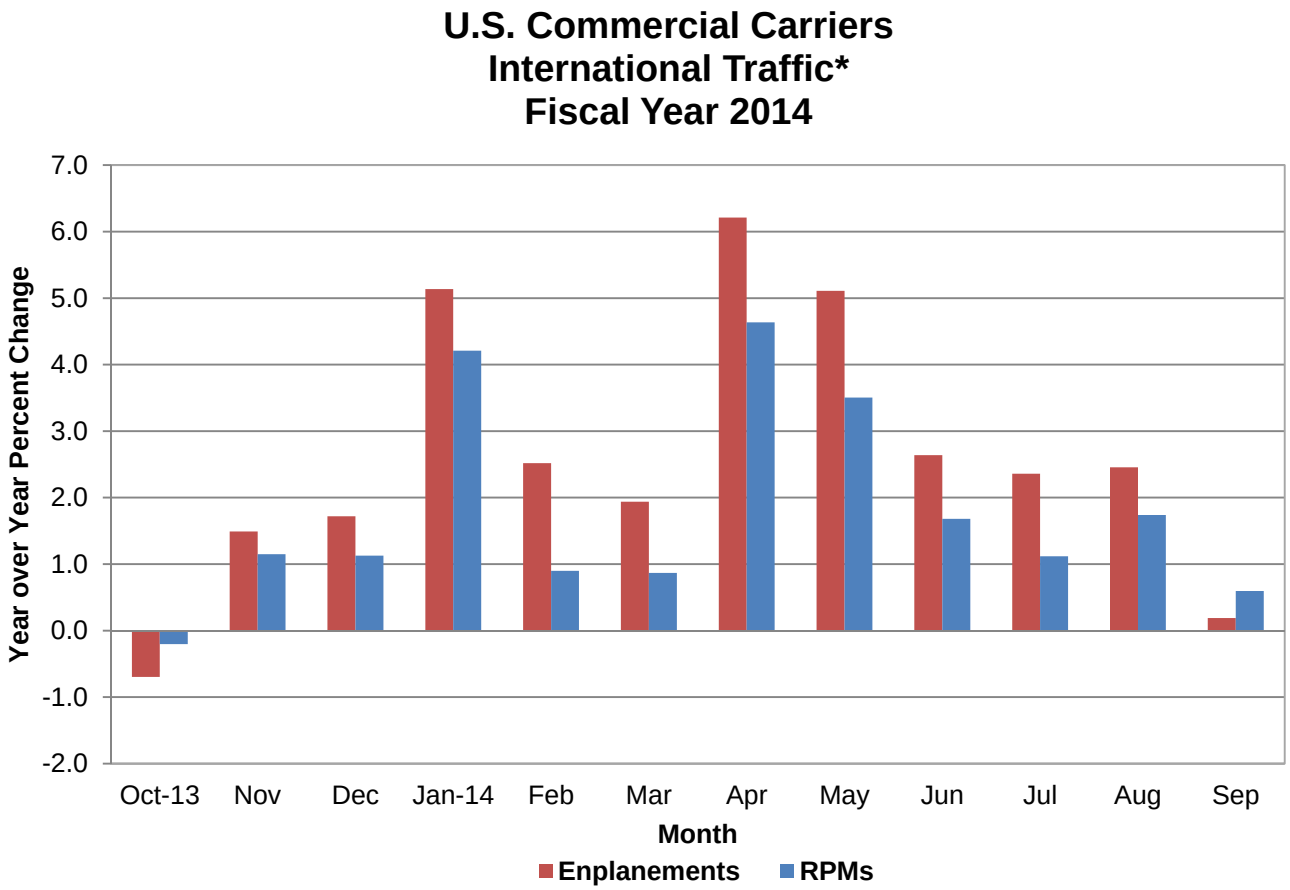
International Passenger Markets

U.S. carrier international ASMs were up 4.0 percent and departures were up 3.6 percent in 2014. ASMs increased in the Latin, Pacific and Atlantic markets, up 8.4, 1.2 and 2.8 percent, respectively.



*Scheduled and Non-Scheduled Ops. Source: DOT-F41

U.S. carrier international RPMs were up 2.6 percent and passenger enplanements were up 3.4 percent in 2014. The Pacific market posted negative results, with RPMs falling 0.1 percent while enplanements decreased 2.9 percent. RPMs and enplanements increased 7.7 and 7.5 percent, respectively, in the Latin American market, while RPMs and enplanements increased 0.8 and 0.6 percent, respectively, in the Atlantic market.



*Scheduled and Non-Scheduled Ops. Source: DOT-F41

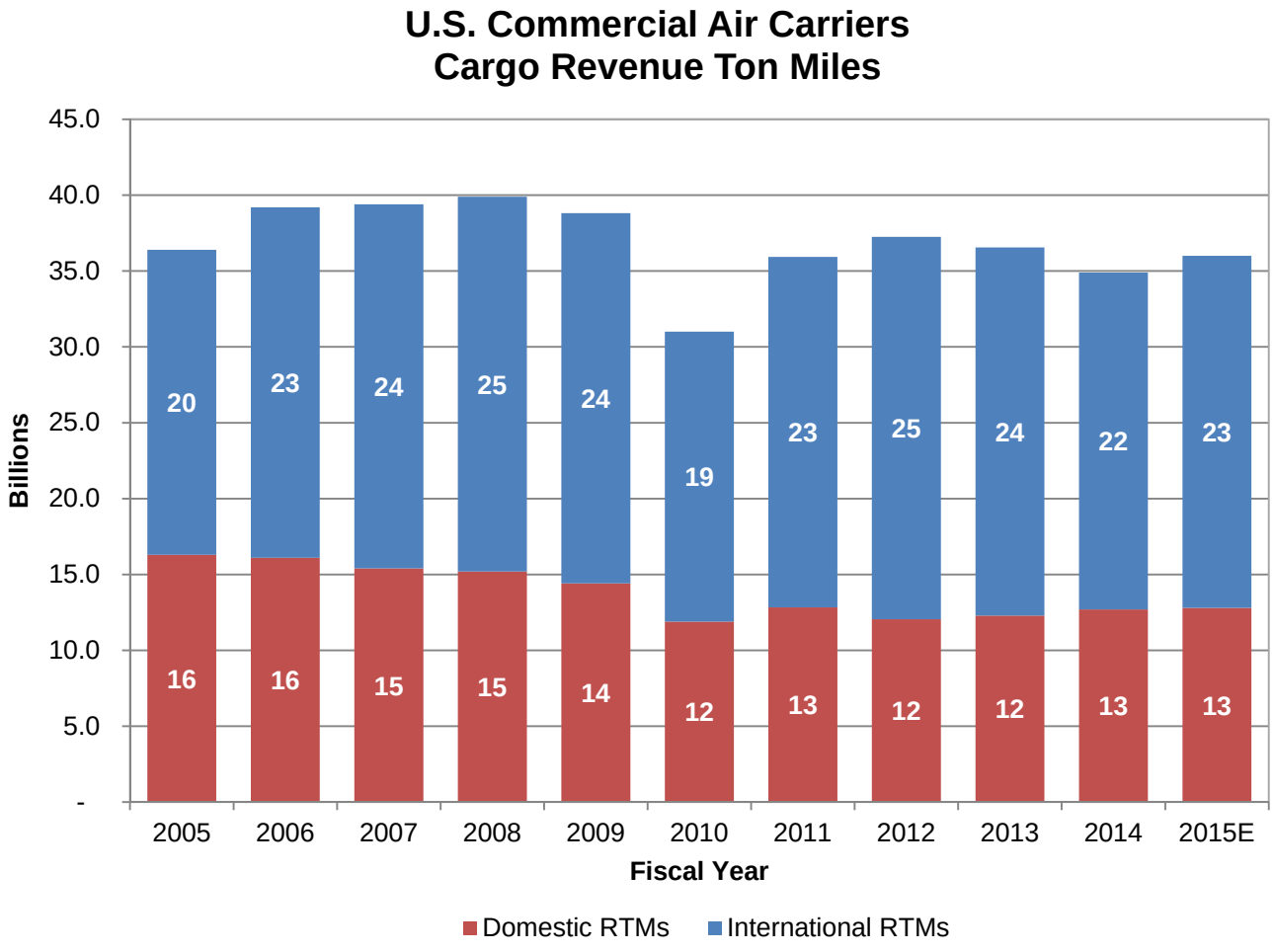
The international load factor decreased 1.2 percentage points overall in 2014 to 81.4 percent. Load factor decreased in all markets: in the Latin market the load factor went down 0.5 points to 80.6 percent; in the Pacific market load factor was down 1.1 points to 82.0 percent and in the North Atlantic market the load factor decreased by 1.7 points to 81.7 percent.

In 2014, 54 percent of the passengers flying abroad on U.S. flag carriers traveled to the Latin America market. The remaining 46 percent of international passengers was split between the Atlantic market (29 percent) and the Pacific market (17 percent); these percentages are unchanged from 2013.

Commercial Air Carriers – Cargo

Air cargo traffic contains both domestic and international freight/express and mail. The demand for air cargo is a derived demand resulting from economic activity. Cargo moves in the bellies of passenger aircraft and in dedicated all-cargo aircraft on both scheduled and nonscheduled service. Cargo carriers face price competition from alternative shipping modes such as trucks, container ships, and rail cars.

U.S. air carriers flew 34.8 billion revenue ton miles (RTMs) in 2014, unchanged from 2013. . Domestic cargo revenue ton miles (RTMs) increased 2.3 percent to 12.7 billion. However, international RTMs decreased by 1.2 percent to 22.2 billion.



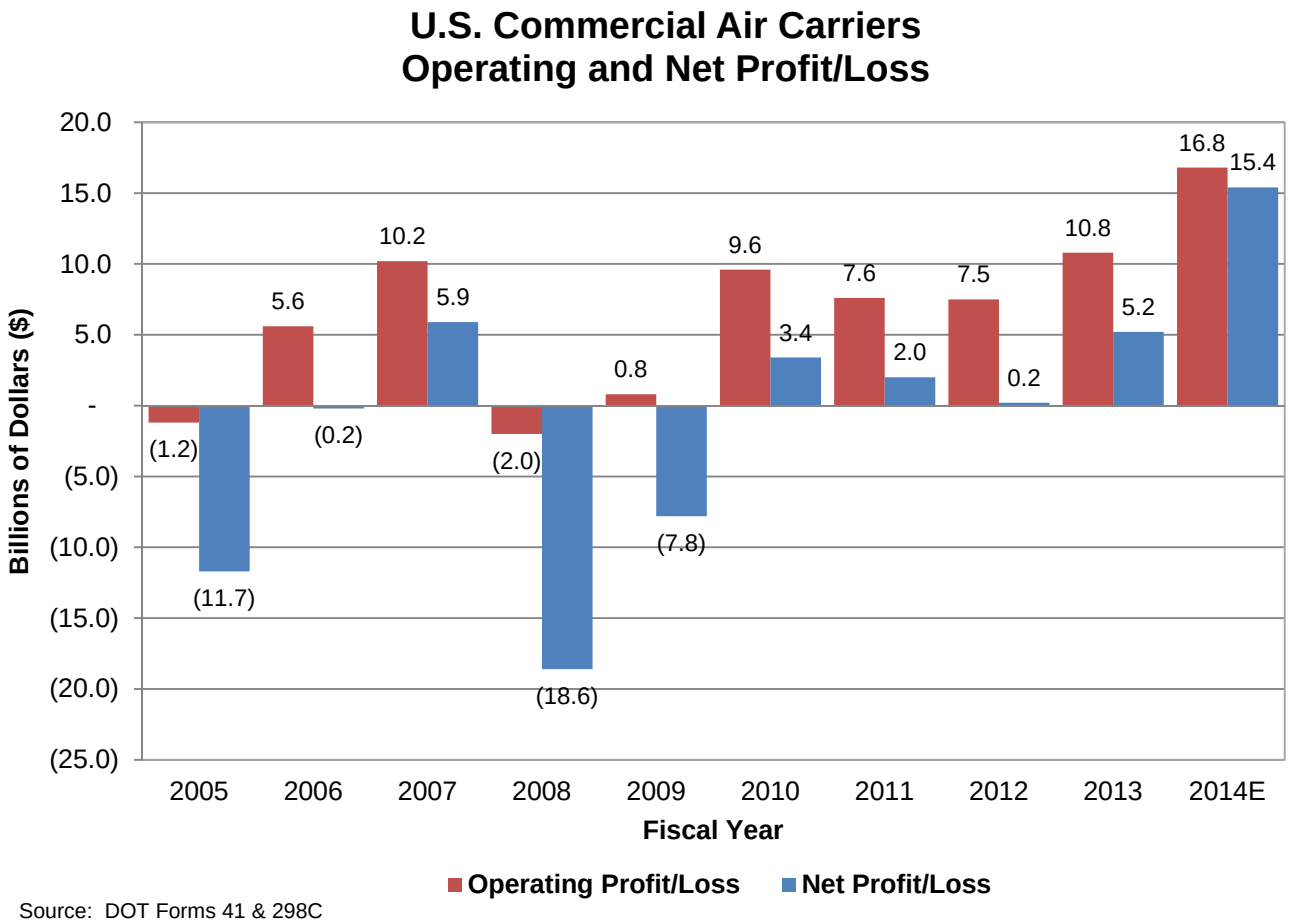
Air cargo RTMs flown by all-cargo carriers comprised 78.2 percent of total RTMs in 2014, with passenger carriers flying the remainder. Total RTMs flown by the all-cargo carriers decreased 1.8 percent in 2014 from 27.7 billion to 27.2 billion. Total RTMs flown by passenger carriers were 7.6 billion in 2014, 7.0 percent higher than in 2013.

International Air Cargo Revenue Ton Miles by Region

U.S. carrier international air cargo traffic can be divided into four components consisting of Atlantic, Latin, Pacific, and 'Other International.' In 2014 total international RTMs decreased 1.2 percent from 22.4 billion to 22.2 billion with declines in the Latin and Other International regions more than offsetting increases in the Atlantic and Pacific regions. The largest decrease was posted in the 'Other International' category where cargo RTMs fell by 12.1 percent from 5.8 billion RTMs to 5.1 billion RTMs. The Latin market saw cargo RTMs fall by 2.7 percent from 1.8 billion RTMs to 1.7 billion RTMs. The Atlantic market posted a modest increase, up 3.4 percent from 6.7 billion to 6.9 billion while the Pacific region saw cargo RTMs rise from 8.2 billion RTMs to 8.4 billion RTMs an increase of 3.0 percent.

U.S. Commercial Air Carriers 2014 Financial Results

U.S. commercial air carriers posted a net profit of $ 15.4 billion during FY 2014 after reporting a net profit of $5.2 billion one year earlier.



Source: DOT Forms 41 & 298C

Operating revenues (passenger and cargo) for FY 2014 were up 4.2 percent from FY 2013. Passenger carriers saw their revenue increase 5.4 percent buoyed by rising yields and modest increases in traffic. The increase in revenue underscored the ability of passenger carriers to push through fare increases and to offer value-added services that leisure and business passengers were willing to buy. Revenues for cargo carriers fell for the second year in a row, down 0.7 percent, with the continued slowdown in cargo traffic after falling1.5 percent in FY 2013.

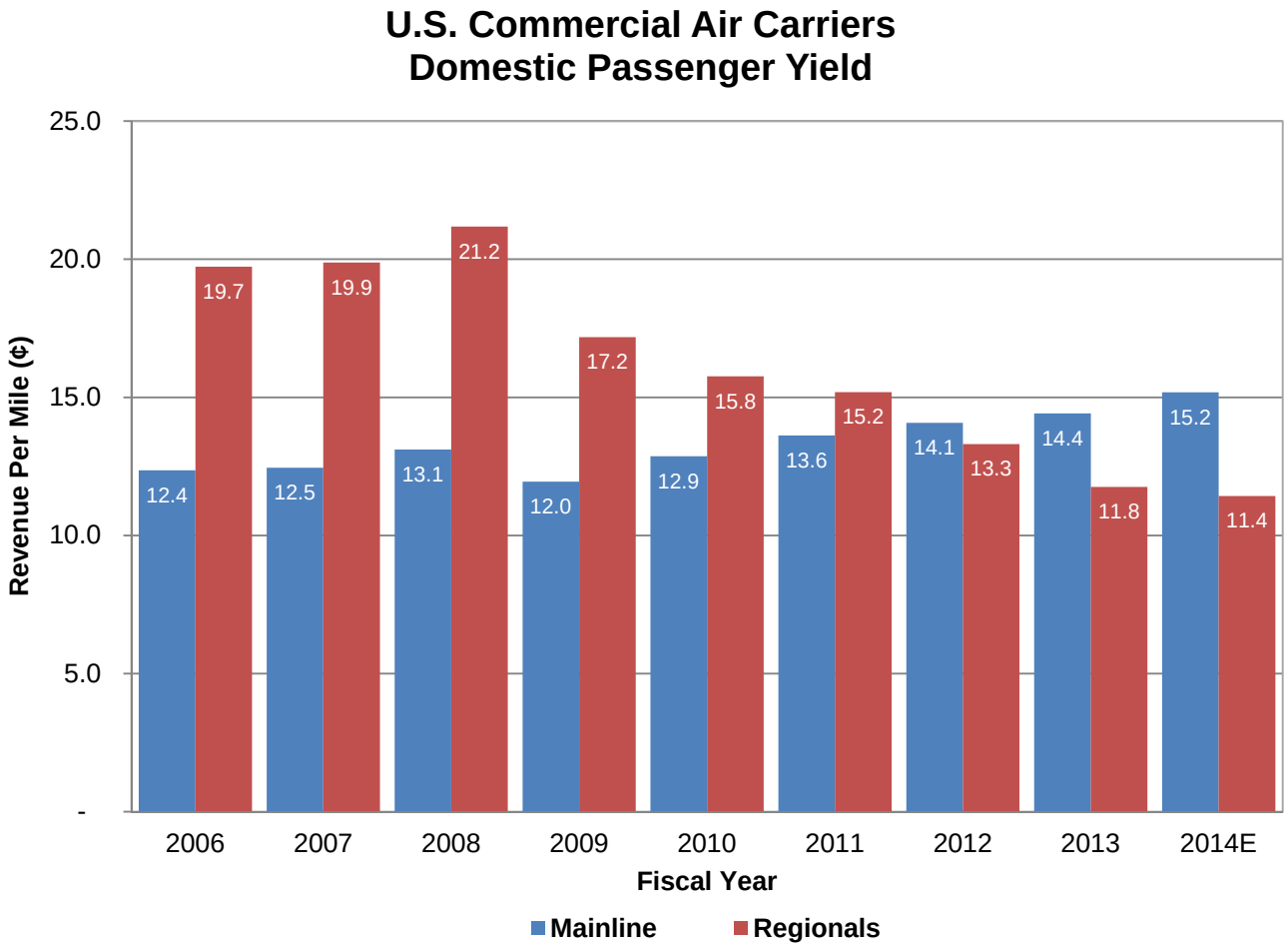
During the same period, operating expenses for all carriers rose 1.2 percent following a 0.8 percent decrease in FY 2013. The small rise in operating expenses during FY 2014 was driven in large part by a 2.6 percent fall in the price of fuel for the year.

In FY 2014, passenger carriers reported operating income of $14.9 billion and net income of $14.4 billion, while air cargo carriers reported an operating profit of $1.9 billion and a net income

of $1.0 billion. In the domestic market, passenger carriers generated an operating profit of $10.5 billion and net income of $10.2 billion. In the international market, this carrier group posted operating and net profits of $4.4 billion and $4.2 billion, respectively. Cargo carriers posted an operating profit of $4.7 billion and a net income of $3.0 billion in domestic markets. In international markets, the cargo carriers reported an operating loss of $2.8 billion and net loss of $2.0 billion.

The industry's financial results in FY 2014 reflected the strong results posted by the passenger carriers, especially the network carriers. After posting a net profit in FY 2013 of $3.6 billion, this carrier group posted operating profits of $11.1 billion and net income of $12.1 billion. For the eight reporting low-cost carriers, operating profits totaled $3.2 billion and net income totaled $2.1 billion for the full year.

Solid demand growth buoyed by the improving economy coupled with continued capacity discipline by the mainline carriers led to healthy increase in mainline carrier passenger yield for the year. Domestic mainline carrier passenger yield increased to 15.12¢ in 2014, up 4.8 percent from the 2013 level of 14.44¢.



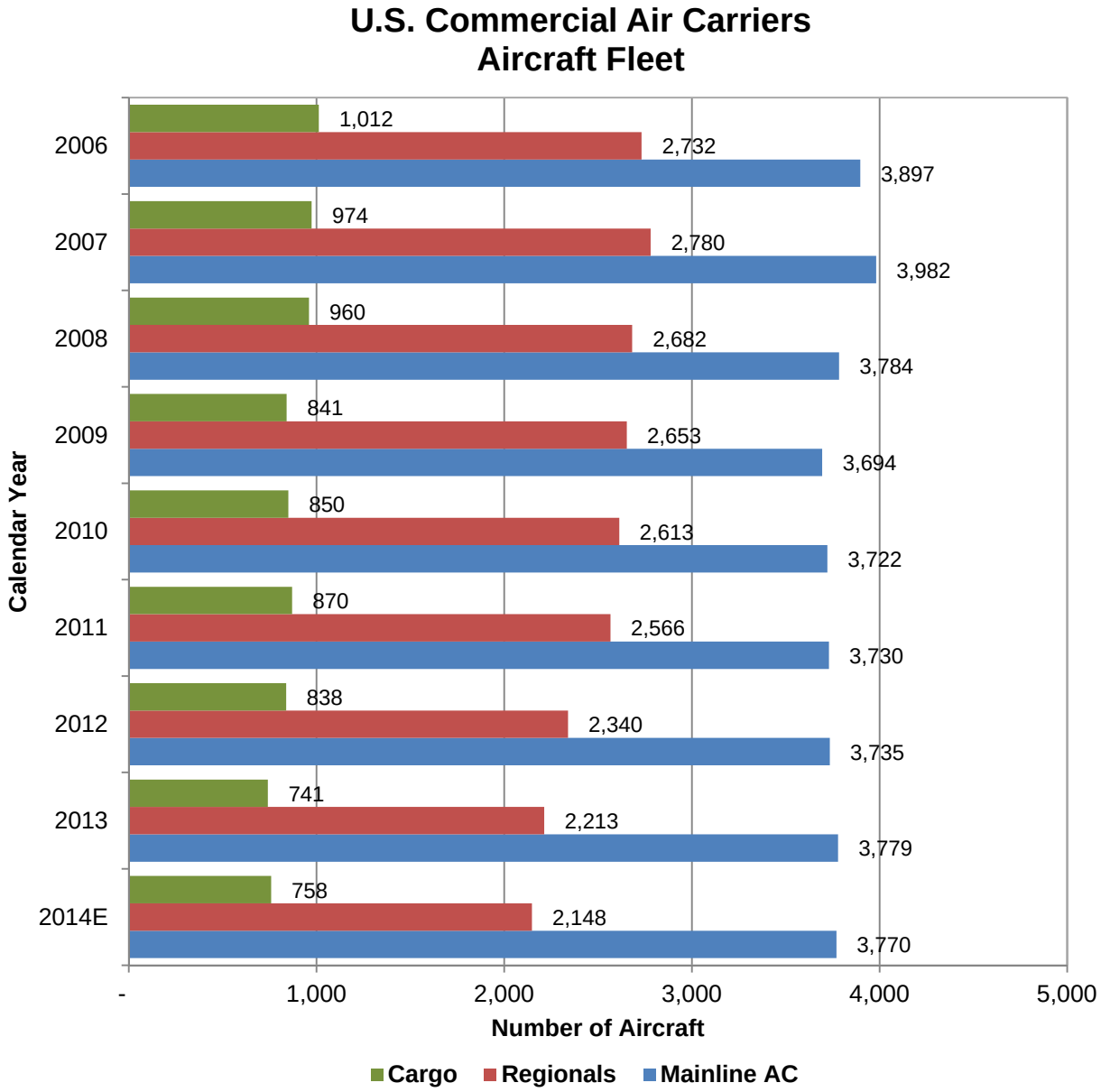
Of the reporting regional carriers, operating profits totaled $376 million and net income totaled $99 million for FY 2014, despite domestic yield falling 2.8 percent. As the industry continues to

restructure, network carriers have negotiated contracts with their regional partners that shift more of the financial risk of contract flying to the regional carriers. Since 2007, regional carrier yield is down 50 percent in real terms (compared to an increase of 5.7 percent in mainline carrier yield for the same period). In addition, longer trip lengths (due to a growing number of larger and faster regional jet aircraft entering the fleet) and higher load factors have also contributed to the drop in regional yield. All other things being equal, an increase in either the trip length or the load factor results in a drop in yield since fee-for-departure revenues are spread over a broader base of RPMs.

U.S. Commercial Air Carriers 2014 Aircraft Fleets

The commercial passenger carrier fleet is undergoing transformation. The mainline carriers are retiring older, less fuel efficient aircraft (e.g. 737-300/400/500, 757/767, and MD-80) and replacing them with more technologically advanced A320 and 737-700/800/900 aircraft. The regional carriers are growing their fleet of 70 to 90 seat regional jet aircraft and reducing their fleet of 50-seat jet aircraft.

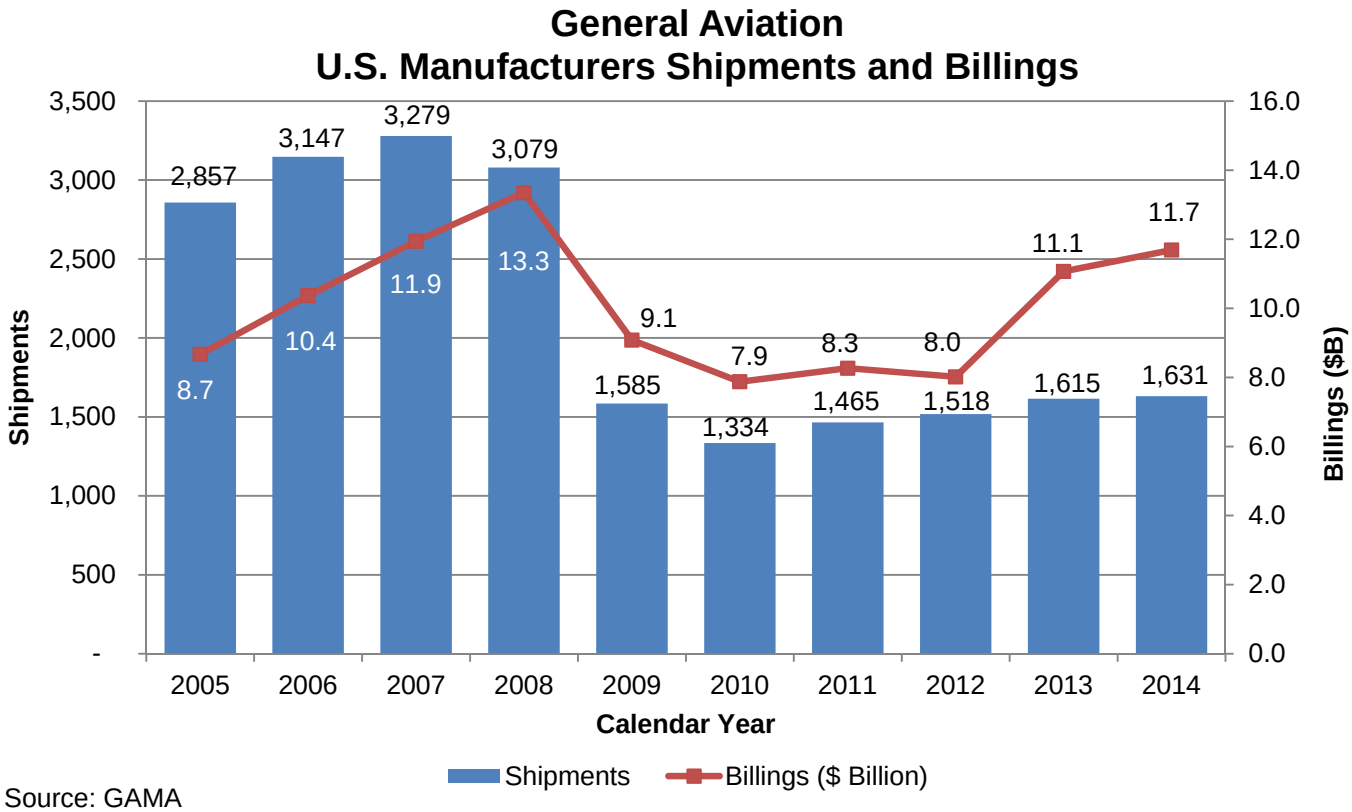
The total number of aircraft in the U.S. commercial fleet (including regional carriers) is estimated at 6,676 for 2014, a decrease of 57 aircraft from 2013. This includes 3,770 mainline air carrier passenger aircraft (over 90 seats), 758 mainline air carrier cargo aircraft, and 2,148 regional carrier aircraft (jets, turboprops, and pistons).



The mainline carriers' passenger jet fleet decreased by 9 aircraft in 2014, following a 44 unit increase in 2013, as both network carriers and low cost carriers added to their fleets. With the decrease in the fleet in 2014, the mainline carrier fleet now stands at 16.0 percent below (723 aircraft) the level it was in 2000. Like the mainline carrier fleet, the regional carrier fleet shrank in 2014, falling by 65 units. Since reaching a peak in 2007, the U.S. regional carrier fleet has been reduced by more than 22 percent (632 units). Consolidation among regional carriers and high fuel prices continue to spur retirements of 50 seat and smaller regional jets as well as small piston and turboprop aircraft.

GENERAL AVIATION

The general aviation industry continued its modest growth in 2014, especially with the help from growth in business jet and single engine piston deliveries. The strong growth of turboprop and multi-engine piston segments in 2013 slowed down to closer to their 2012 levels. Based on figures released by the General Aviation Manufacturers Association (GAMA), U.S. manufacturers of general aviation aircraft delivered 1,631 aircraft in CY 2014, 1.0 percent more than CY 2013. This was the fourth year of increase in shipments. Overall piston deliveries increased by 4.5 percent, with single-engine deliveries up 6.2 percent but the much smaller multi-engine category down 10.0 percent. In the turbine categories, turbojet deliveries were up by 12.3 percent. Turboprop deliveries went down by 11.2 percent in 2014. U.S. billings in CY 2014 were totaled $11.7 billion, up 5.6 percent from 2013.



Source: GAMA

General Aviation operations at combined FAA and contract towers decreased 1.1 percent in 2014, led by a 1.4 percent decline in itinerant operations. Local operations fell 0.6 percent. General aviation activity at consolidated traffic facilities (FAA TRACONs) fell 0.2 percent, while the number of general aviation aircraft handled at FAA en-route centers increased by 4.7 percent.

The FAA uses estimates of fleet size, hours flown, and utilization from the General Aviation and Part 135 Activity Survey (GA Survey), which has been conducted annually since 1977, as baseline figures upon which forecast growth rates are applied. Beginning with the 2004 GA Survey, there were significant improvements to the survey methodology. These improvements

included conducting 100 percent samples for turboprops and turbojets, all rotorcraft, all aircraft in Alaska and all aircraft operating on-demand under Part 135. In addition, the sample design was revised to stratify by aircraft type (15 categories), FAA region (9 categories), whether the aircraft was manufactured in the past 5 years (2 categories), and whether the aircraft operates under a Part 135 certificate (2 categories). Furthermore, a large fleet reporting form was incorporated to allow owners/operators of multiple aircraft to report aggregate data for their entire fleet on a single form. In 2005 an additional aircraft category (light sport aircraft) was added. As a result of these changes the sample size nearly doubled. Between 2003 and 2005 large changes in both the number of aircraft (turbojets up by 22.8 percent, total rotorcraft up by 33.7 percent) and hours (single-engine piston down by 17.6 percent) in many categories occurred. The results of 2011 survey were not available to use. Therefore, estimates of 2011 fleet and hours were based on estimated number of general aviation aircraft in the FAA civil aircraft registration database by the end of CY 2011, and past rates of active aircraft and utilization by type of aircraft and age of the fleet. The results of the 2013 Survey, the latest one available, were consistent with the results of past surveys since 2004. This reinforces our belief that methodological improvements have brought about superior estimates relative to those in the past and they are used as the basis for our forecast.

In 2010 FAA issued a Rule for Re-Registration and Renewal of Aircraft Registration. According to this rule, all aircraft registered in the U.S. had to re-register over the three-year period from 2011 to 2013, and afterwards registrations must be renewed every three years. The effect of this Rule was initially recorded in the results of the 2012 GA Survey that saw the number of active GA aircraft fall by 6.4 percent, from 223,370 in 2010 to 209,034 in 2012. The 2013 GA Survey showed a further decline of 4.4 percent to 199,927 total active aircraft. The biggest decline was in the piston aircraft category, in which the number of active aircraft decreased 11.4 percent from 155,419 in 2010 to 137,655 in 2013. In individual segments, other aircraft category (including balloons and gliders) recorded the largest decline by 24.8 percent, from 5,684 to 4,277 aircraft, followed by the experimental aircraft by 16.0 percent, from 29,662 to 24,918. Piston rotorcraft segment also showed a significant fall by 12.6 percent, from 3,588 aircraft in 2010 to 3,137 in 2013.

General aviation flight hours decreased by 7.8 percent from 24.8 million in 2010 to 22.9 million in 2013. The largest percentage decline was observed in the piston rotorcraft segment with 20 percent from 794,000 hours to 636,000 hours. Utilization rate in this category fell by 8 percent, from 221 hours per year to 203 hours. Turbine rotorcraft hours declined by 11 percent, from 2.6 million to 2.3 million, while utilization in this segment fell by 13 percent from 401 hours per year to 349 hours. Single engine piston aircraft hours declined by 12 percent from 12.2 million in 2010 to 10.7 million in 2013, the largest component of the overall drop in GA flight hours. The decline in the size of the single engine piston fleet was the primary reason for the fall in hours during this period as utilization in this segment fell only by 1 percent from 87 to 86 hours. There were increases in turboprop (up 11%, from 2.3 million to 2.6 million), turbojet (up 3%, from 3.4 million to 3.5 million), and special light-sport aircraft hours (up 25%, from 138,000 to 173,000), but not large enough to offset the decline in other areas. The turboprop utilization rate increased by 8 percent from 248 to 269 hours, and the turbojet utilization rate increased by 2 percent, from 294 to 300 hours.

Student pilots are important to general aviation and the aviation industry as a whole. Student pilot numbers had been in decline for many years, but in 2010 the FAA issued a rule that

increased the duration of validity for student pilot certificates for pilots under the age of 40 from 36 months to 60 months. As a result, according to statistics compiled by the FAA's Mike Monroney Aeronautical Center, the number of student pilots at the end of 2010 increased by 64.8 percent, or approximately by 47,000 pilots, compared to calendar year end 2009. While the impact of the new rule on the long term trend in student pilots has yet to be fully determined, the number of student pilots slightly increased by 0.2 percent from its 2013 level to 120,546. The average age of a U.S. pilot in 2014 was 44.8 years old.

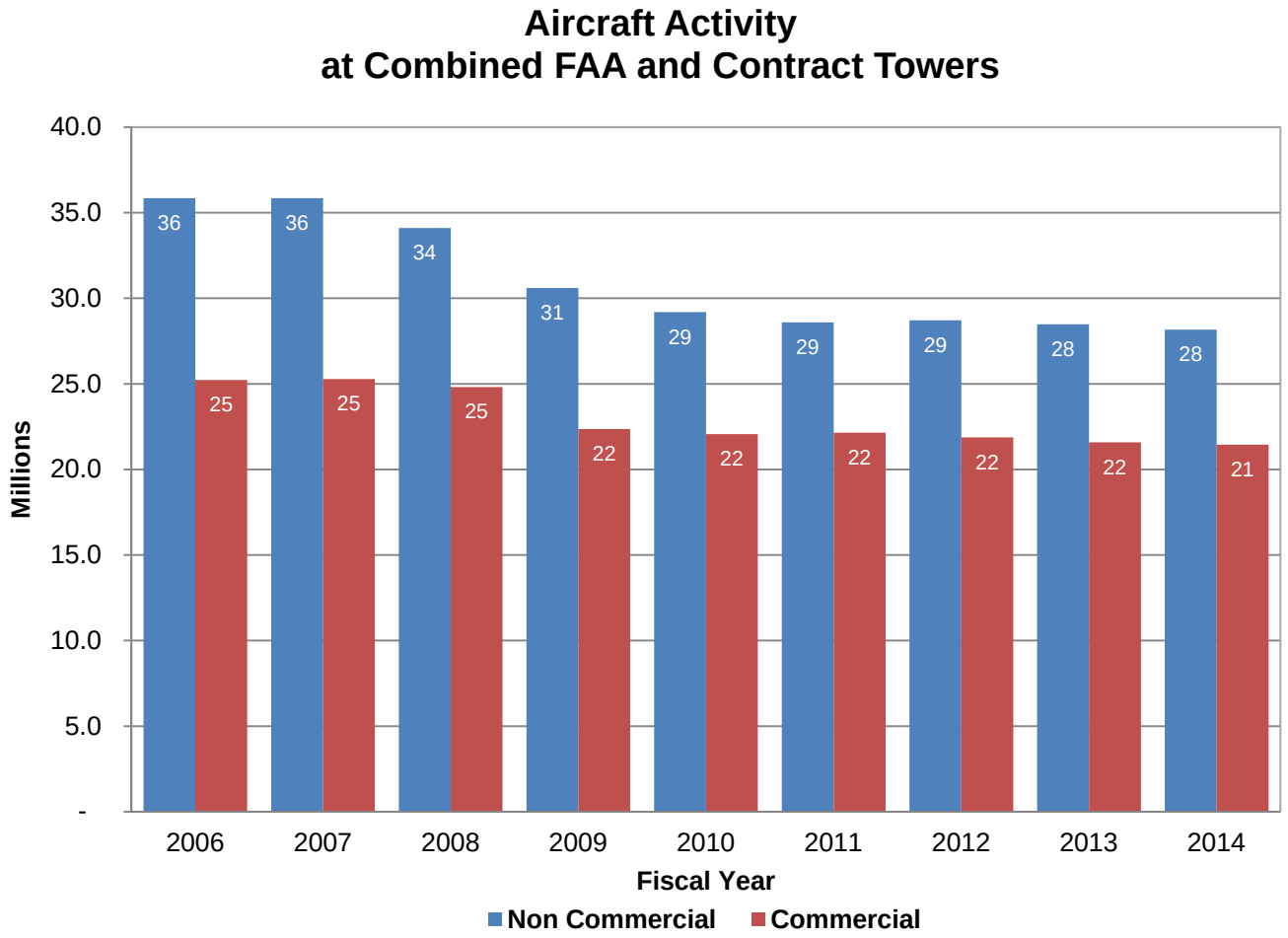
FAA OPERATIONS

In 2014, activity at FAA facilities declined for the seventh consecutive year. Commercial air traffic activity fell for the sixth time in seven years as increases in air carrier activity were more than offset by declines in air taxi activity. Noncommercial activity also declined as both general aviation and military levels fell. The decline in annual totals were driven primarily by the impacts of the unusually severe weather in January-March 2014 quarter, as total operations at FAA and contract tower airports posted year over year gains in six of the remaining nine months of FY 2014.

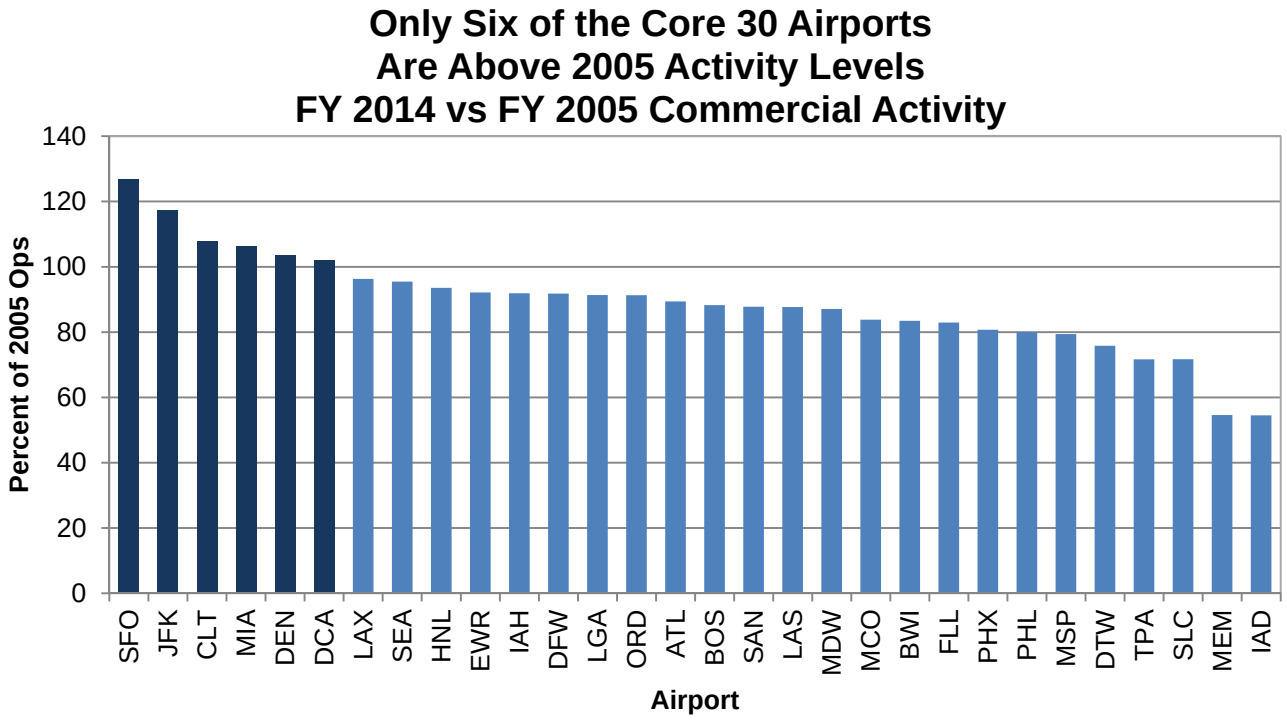
Total activity at combined FAA and contract tower airports (the set of 516 towers where FAA provides service, ranging from Chicago O'Hare (the busiest with 879,000 operations) to towers with as few as 7,200 operations (Branson, MO) was 49.6 million operations in 2014, down 0.9 percent from 2013 and 27.8 percent below the peak activity level recorded in 2000. In 2014, commercial activity (the sum of air carrier and commuter/air taxi) at combined FAA and contract towers fell by 0.6 percent. Air carrier operations were up 1.9 percent while commuter/air taxi operations declined 4.1 percent. Commercial operations in 2014 were 17.7 percent lower than their peak in 2005.

Non-commercial activity (the sum of general aviation and military) at combined FAA and contract towers decreased 1.1 percent in 2014 after a 0.8 percent decrease in 2013. General aviation activity (25.6 million) was down 1.1 percent while military activity (2.5 million) was down 1.4 percent. At the end of 2014, non-commercial aircraft activity was 34.1 percent below the activity in 2000.

In FY 2014, total operations at the large hubs decreased by 0.5 percent to 12.5 million, and constituted 25.2 percent of all towered operations. Activity at the medium hubs fell by 1.6 percent to 4.9 million while activity at the small and non-hub towers decreased by 1.1 percent, from 32.6 million to 32.3 million. The share of total towered operations at the medium, and small and non-hub towers in FY 2014 were 9.8 and 65.0 percent, respectively. Since 2000, operations at large hubs have declined by 13.3 percent, while operations at medium hubs have fallen by 42.8 percent, and operations at small and non-hub towers have declined by 29.5 percent.



The FAA pays close attention to the trends occurring at the "Core 30" airports. These airports represent the top 30 airports in the country in terms of passenger activity (except Memphis which is a major freight hub) and account for about 70 percent of commercial passengers. Commercial activity at the Core 30 airports peaked in 2005, but subsequent industry restructuring has resulted in a drop in combined commercial activity at these airports since then. In 2014, commercial activity at the Core 30 airports fell by 0.9 percent from the previous year and was 11.1 percent below 2005 activity levels. Of the Core 30 airports, ten recorded increases in activity from 2013 with the largest increases occurring at Seattle (up 6.1 percent) and Honolulu (up 5.2 percent). The largest decreases in activity occurred at Memphis (down 10.9 percent), and Detroit (down 6.3 percent). Only six of the Core 30 airports exceeded 2005 peak activity levels during FY 2014, unchanged from the number in prior three years.

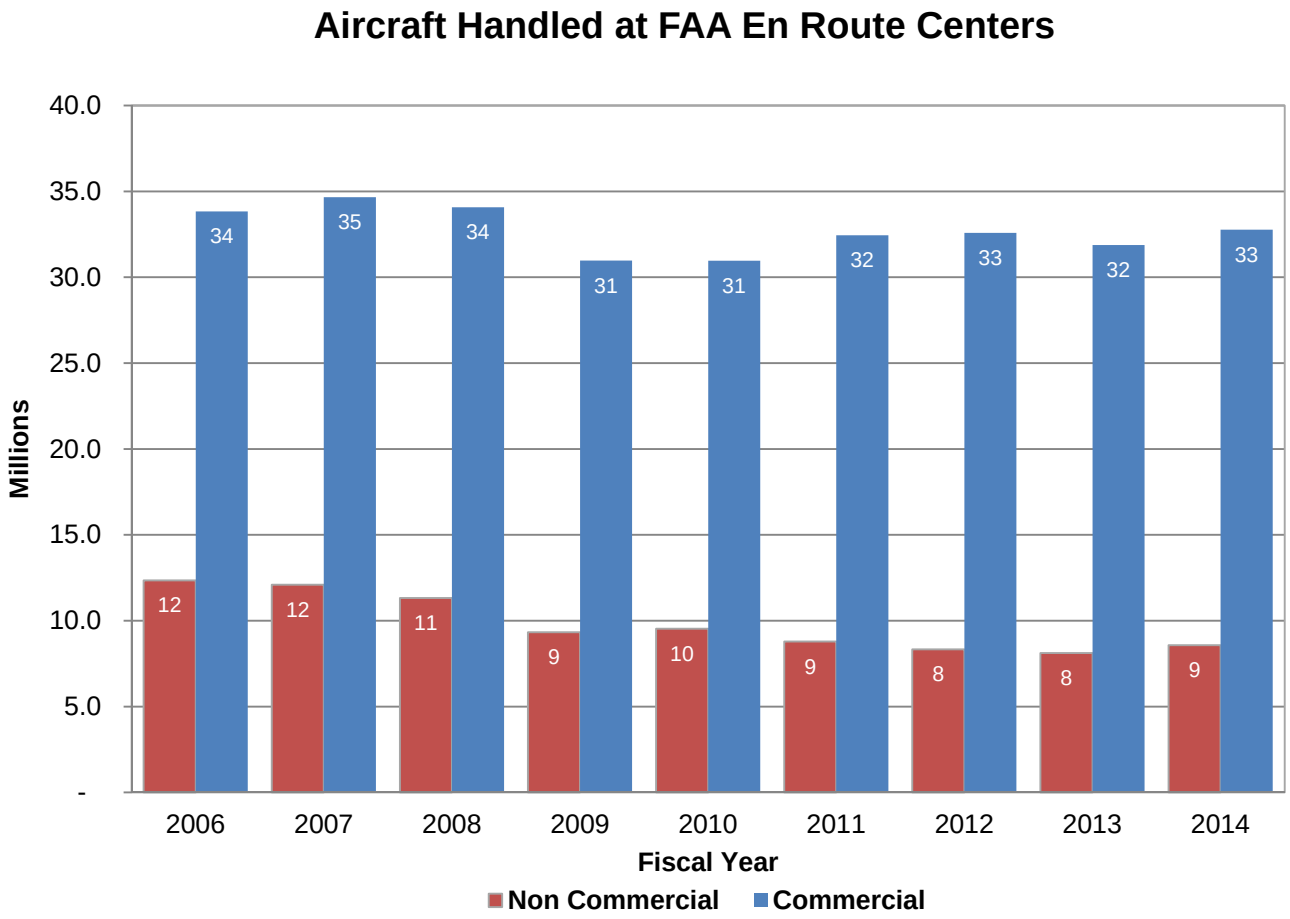


Since 2005 there has been a pronounced shift in demand which is reflected in the relative growth of commercial operations across the Core 30 airports. Commercial operations at San Francisco (up 26.7 percent), New York-Kennedy (up 18.5 percent), and Charlotte (up 8.0 percent) have increased the most relative to their 2005 activity levels. Commercial operations at Dulles (down 45.5 percent) and Memphis (down 45.4 percent) have shown the largest declines from 2005 levels. These activity level shifts reflect the impact of airline industry restructuring. The demise of Independence Air and United's continuing restructuring of its network resulted in a dramatic reduction of operations at Dulles; while the bankruptcy of Delta, its subsequent merger with Northwest, and the restructuring of the combined network has led to a dramatic shrinking of operations in Memphis.

Non-commercial activity, 91 percent of which is in general aviation, decreased 1.1 percent in 2014 with general aviation activity falling by the same amount. Breaking down the general aviation activity by hub size, general aviation activity at large hubs and medium hubs rose by 1.5 and 1.3 percent, respectively, while activity at small and non-hubs decreased by 1.2 percent. However, general aviation activity at all hub categories has fallen substantially since 2005, down 39.5, 37.8, and 28.4 percent, respectively, at large, medium, and small/non hubs. Rising fuel prices, stagnant household incomes, falling household wealth, and a shrinking pilot population are all viewed as contributing to the long run decline in general aviation activity.

In 2014, total activity at FAA en-route centers (41.3 million) increased for the first time since 2011, up 3.5 percent from 2013 levels, and 12.9 percent below their peak in 2005. Commercial activity increased 2.9 percent with air carrier aircraft handled up 4.7 percent while commuter/air taxi aircraft handled fell 1.9 percent, respectively. Non-commercial activity was up 5.6 percent for the year as general aviation activity went up 4.7 percent while military activity increased 9.2

percent. In 2014, air carrier operations were 2.9 percent below their 2005 activity levels and air taxi/commuter operations were 15.4 percent below activity levels for 2005. Operations for the general aviation and military user groups were 19.5 and 54.8 percent below their 2005 activity levels, respectively.



FAA AEROSPACE FORECASTS

FISCAL YEARS 2015 – 2035

Developing forecasts of aviation demand and activity levels continues to be challenging as the aviation industry evolves and prior relationships change. In times of amplified volatility, the process is filled with uncertainty, particularly in the short-term. Once again, the U.S. aviation industry has shown that the demand for air travel is resilient as it rebounds from its most recent downward spiral caused by the Great Recession. As 2015 begins, lingering questions remain. Are the U.S. and global economies on firm ground? Will oil prices rebound sharply or remain at current levels for a sustained period into the future? Have the structural changes undertaken by the industry over the past 5 years revamped the industry from one of boom-to-bust to one of sustainable profits? Has industry consolidation finished?

The FAA has developed a set of assumptions and forecasts consistent with the emerging trends and structural changes currently taking place within the aviation industry. The intent of these forecasts is to accurately predict future demand; however, due to the large uncertainty of the operating environment, the variance around the forecasts is wider than it was in prior years.

The commercial aviation forecasts and assumptions are developed from econometric models that explain and incorporate emerging trends for the different segments of the industry. In addition, the commercial aviation forecasts are considered unconstrained in that they assume there will be sufficient infrastructure to handle the projected levels of activity. These forecasts do not assume further contractions of the industry through bankruptcy, consolidation, or liquidation. They also do not assume any drastic changes in federal government operations.

The commercial aviation forecast methodology is a blended one. The starting point for developing the commercial aviation forecasts (air carriers and regionals) is the future schedules published by airlines through Innovata. To generate the short-term forecast (i.e., one year out) current monthly trends are used in conjunction with published monthly schedules to allow FAA forecasters to develop monthly capacity and demand forecasts for both mainline and regional carriers for fiscal and calendar years 2015-16. The medium to long-term forecasts (2016-2035) are based on the results of econometric models.

The general aviation forecasts rely heavily on discussions with industry experts conducted at industry meetings, including four Transportation Research Board (TRB) meetings of Business Aviation and Civil Helicopter Subcommittees in May 2014 and January 2015 along with the results of the 2013 General Aviation and Part 135 Activity Survey. The assumptions have been updated by FAA analysts to reflect more recent data and developing trends, as well as further information from industry experts.

The FAA also presents the draft forecasts and assumptions to industry staff and aviation associations, who are asked to comment on the reasonableness of the assumptions and

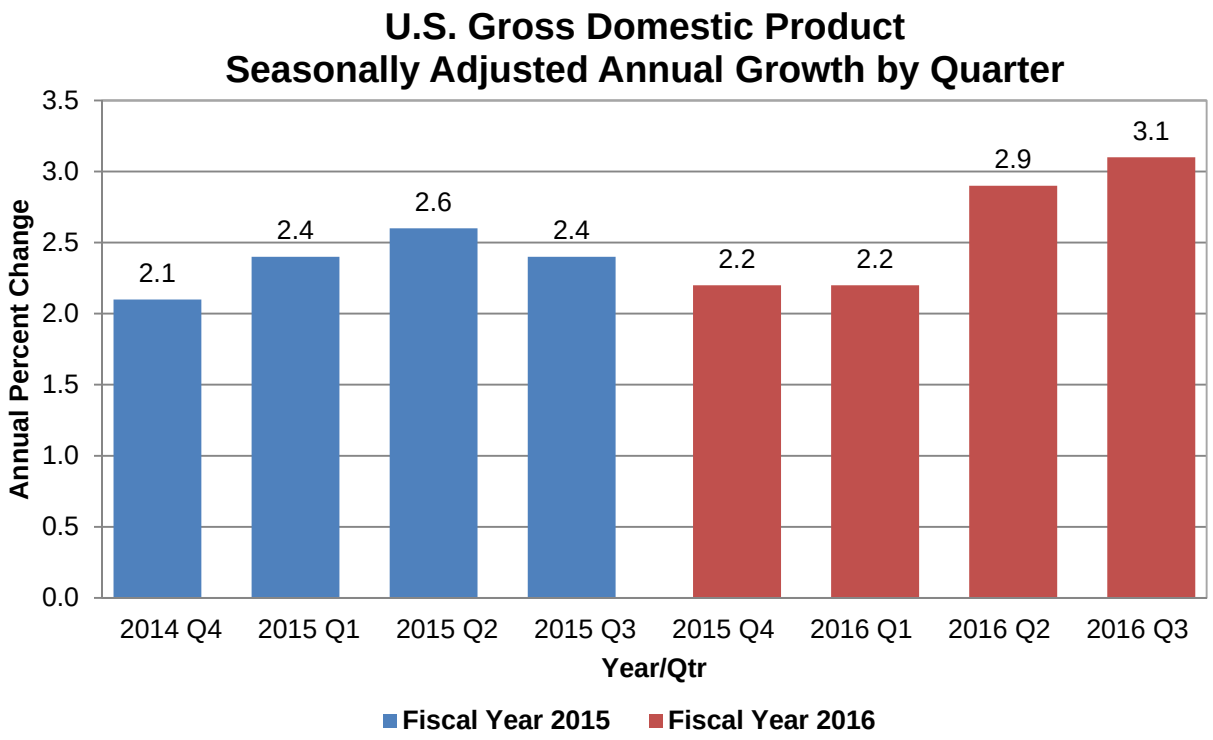
forecasts. Their comments and/or suggestions have been incorporated into the forecasts as appropriate.

ECONOMIC FORECASTS

For this year's Aerospace Forecast, the FAA is using economic forecasts developed by IHS Global Insight, Inc. to project domestic aviation demand. Furthermore, the FAA uses world and individual country economic projections provided by IHS Global Insight, Inc. to forecast the demand for international aviation services. Annual historical data and economic forecasts are presented in Tables 1 through 4. U.S. economic forecasts are presented on a U.S. government fiscal year (October through September) basis, whereas international forecasts are presented on a calendar year basis.

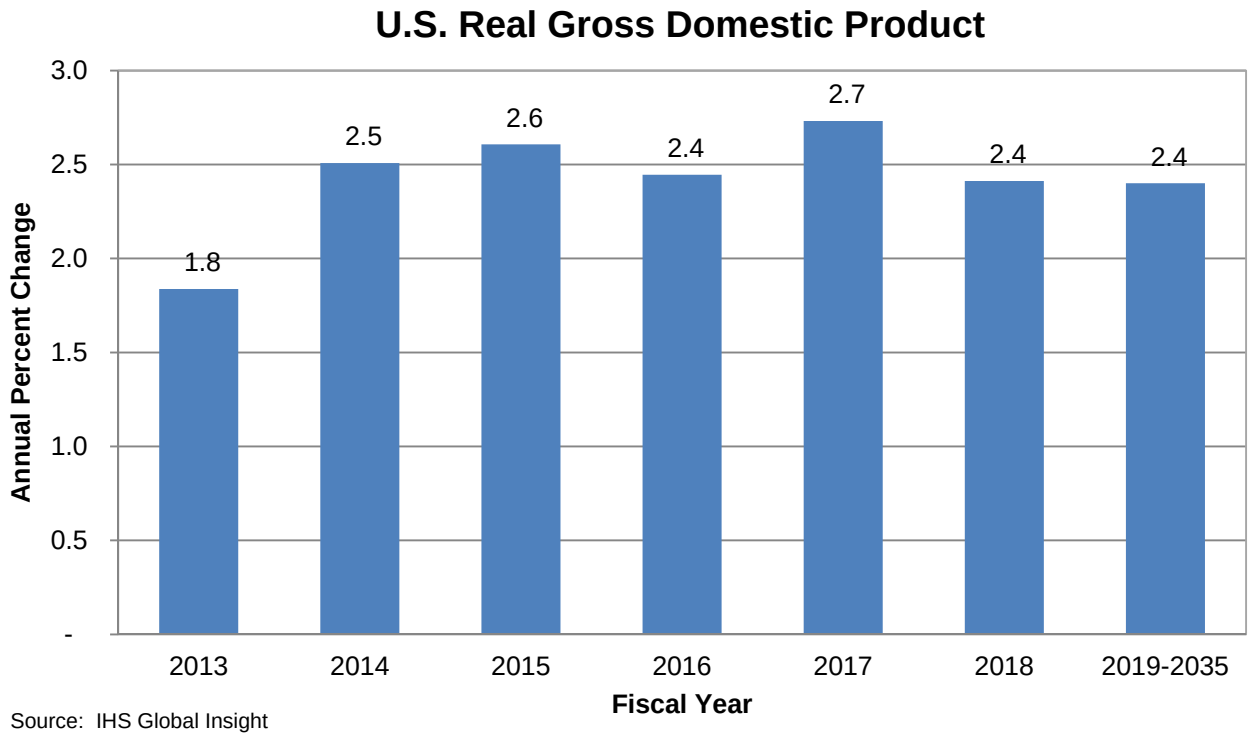
As the recovery is now entering its sixth year, the U.S. economy continues to face headwinds that could limit growth over the next few years. While the decline in oil prices would normally lead to faster economic growth, a higher dollar, slower foreign economic growth, and reduced investment in energy drilling equipment and infrastructure, mitigates a significant portion of the growth benefit from lower oil and gasoline prices. In the global economy, the outlook for Europe outside of the United Kingdom remains uncertain and recent data from China point to a GDP growth between 6.5 and 7 percent. The dollar appreciated versus other major currencies in 2014 as U.S. economic growth accelerated while China slowed down and Europe and Japan stagnated. The stronger dollar will make U.S. exports more expensive and widen the trade deficit. Falling oil prices are curtailing investment in drilling equipment and infrastructure as revenue from oil production declines due to the falling prices.

U.S. economic growth is projected to accelerate through most of FY 2015 as higher consumer spending kicks in spurred on by solid gains in employment, improving consumer finances, and lower gasoline prices. Government spending will no longer be a drag on growth, unlike the past few years. On a quarter-by-quarter basis, U.S. economic growth is projected to range between 2.1 to 3.1 percent on an annualized basis for the next two years.

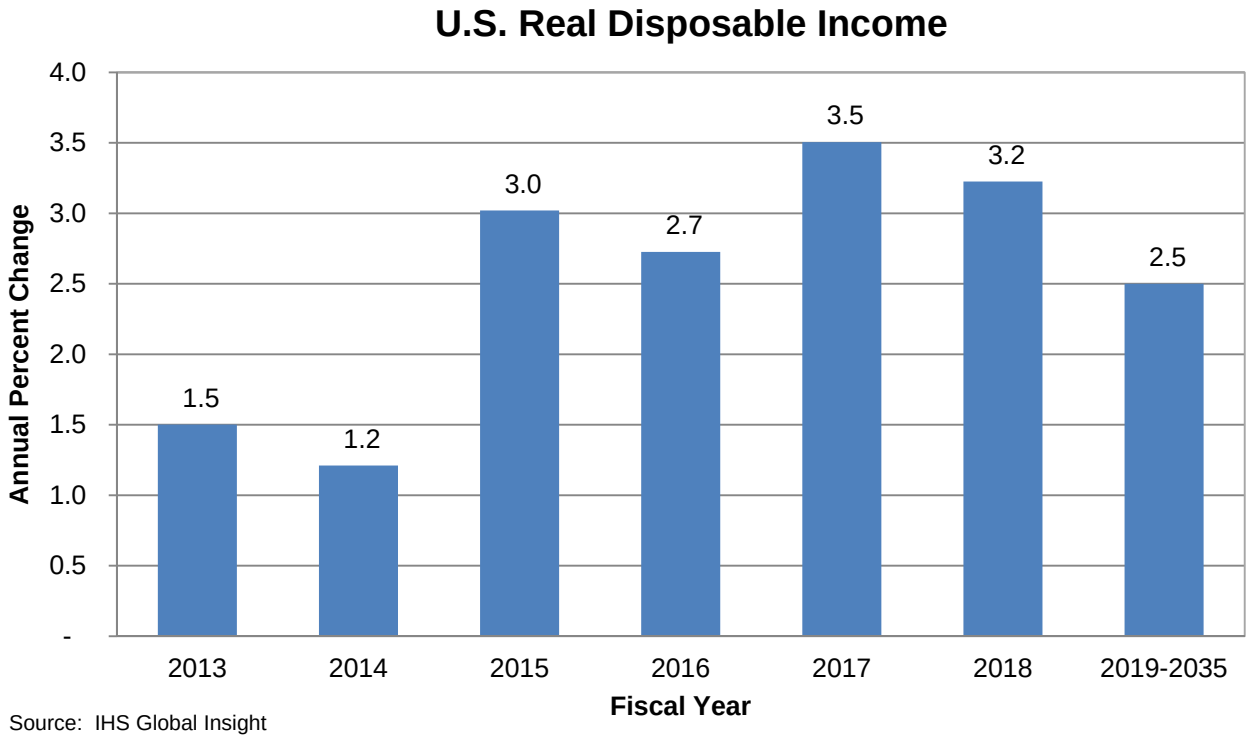


The modest pace of economic recovery has been most evident in the nation's unemployment rate. Since peaking at 9.9 percent in the first quarter of FY 2010, the unemployment rate has come down gradually, dropping to 6.1 percent in the fourth quarter of FY 2014. IHS Global Insight is projecting that with the pickup in economic growth, growth in employment will remain solid and the unemployment rate will drop in FY 2015, averaging 5.6 percent for the year. The growth in employment (and the accompanying fall in the unemployment rate) will result in an uptick in income growth with real disposable income (income after taxes) projected to rise 3.0 percent in 2015 providing a boost to aviation demand in domestic markets, after increasing 1.5 and 1.2 percent in 2013 and 2014, respectively

In the medium term, (the three year period between 2016 and 2019), U.S. economic growth is projected to average 2.6 percent per year with rates ranging between 2.4 and 2.7 percent. Income growth picks up during the same period averaging 3.2 percent per year. For the balance of the forecast period, annual average growth of U.S. real GDP growth and real income slow to 2.4 and 2.5 percent, respectively. The long-term stability of U.S. economic growth depends on sustained growth in the workforce and capital stock along with improved productivity and competitiveness.

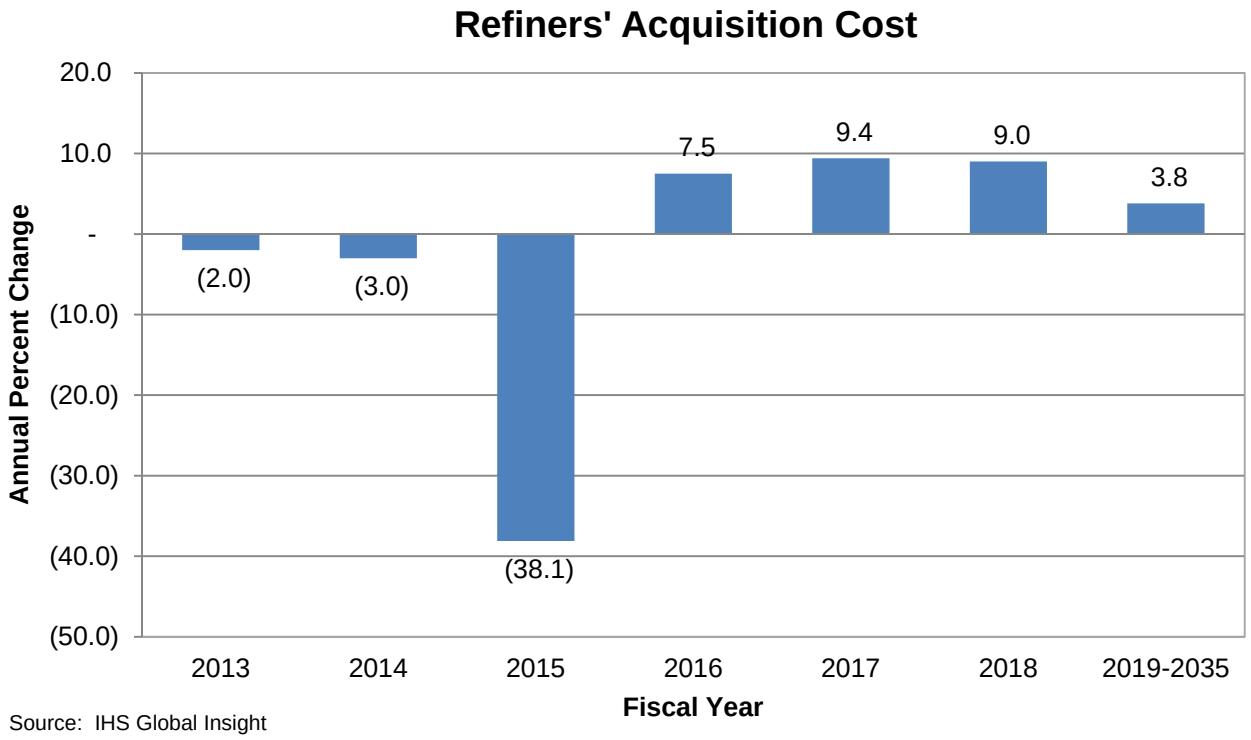


Source: IHS Global Insight



Source: IHS Global Insight

After falling by 3.0 percent in 2014, IHS Global Insight projects the price, as measured by the Refiners' Acquisition Cost, to fall sharply to $60 per barrel in 2015 (down 38.1 percent from 2014) as increasing supply (especially in the U.S. from new technologies) coupled with slowing global demand has resulted in a glut of oil. IHS Global Insight believes the glut of oil in the world market is a long term situation as oil prices are forecast to not reach $100 per barrel until 2021. For the remainder of the forecast period, oil prices are projected to grow slightly faster than general inflation, reaching $162 per barrel by 2035.



Source: IHS Global Insight

Inflation continues to remain in check as energy prices fall in 2015. After increasing 1.6 percent in FY 2014, the inflation rate (as measured by the CPI), is projected to rise only 0.3 percent but then accelerate to 1.7 percent in 2016. After 2016, consumer price inflation is projected to grow between 2.0 and 2.5 percent per year for the balance of the forecast.

To reflect the uncertainty in the projection of economic growth, the FAA Aerospace Forecast uses high and low economic growth cases along with the base forecast. The optimistic and pessimistic economic growth cases are based on optimistic and pessimistic scenarios from IHS Global Insight's December 2014 U.S. economic forecast and extend to 2024. The optimistic case sees oil prices falling to around $45 per barrel by the end of FY 2015, driving down the price of gasoline and providing an additional boost to consumer spending. Recent moves by the European Central Bank (ECB) successfully lift European growth and pent-up demand in Europe is released. Emerging market growth also accelerates as these markets implement structural reforms to increase labor productivity. The stock market responds favorably to all these developments which helps reinforce higher consumer spending. Employment and wage growth pick up further lifting consumer spending. Real GDP growth between 2014 and 2024 in the optimistic case averages 3.0 percent annually compared to 2.5 percent in the base case. The pessimistic case assumes recent improvements in the labor

market don't translate into wage growth while access to credit remains tight for many. As a result, household formation continues to fall as do housing prices. Declines in the stock market weaken consumer confidence and the combination of falling equity values and declining housing prices lead to a slowdown in consumption spending. In addition, foreign growth is slow reducing demand for U.S. exports. In the face of slow consumption growth at home and slow exports, private sector hiring slows and the unemployment rate climbs back up over 6% in 2015. U.S. economic growth is below 2.0 percent in 2015-18 before finally picking up. Real GDP growth in the pessimistic case averages 1.8 percent annually between 2014 and 2024, 0.7 percentage points lower than the base case. Further details about the high and low scenarios can be found in Appendix A.

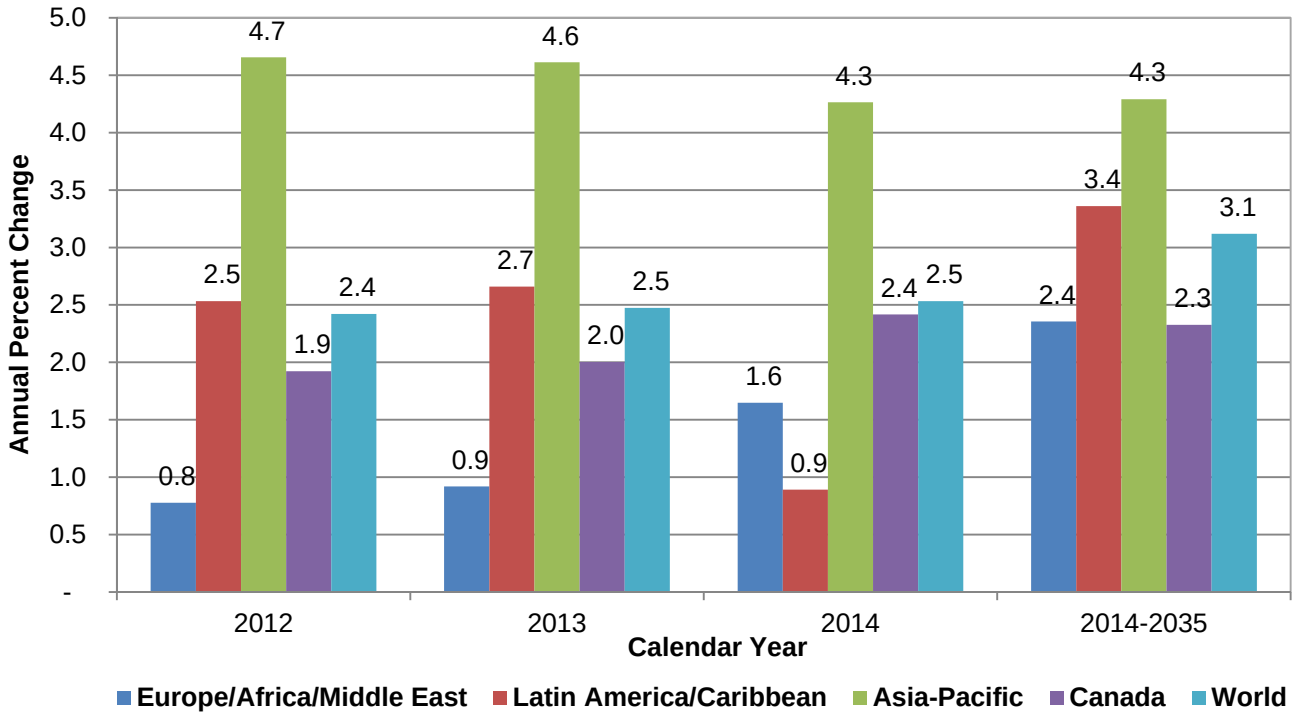
World Economy

After weathering the first contraction in global GDP since the Great Depression, a very slow recovery from the recession in Europe, a sharp decline in energy prices, and political stalemates in the U.S. over what to do with the U.S. federal budget, worldwide economic activity is estimated by IHS Global Insight to have expanded by 2.5 percent in calendar year 2014, the same rate as 2013. The advanced economies (U.S., Canada, Western Europe, Australia, New Zealand, and Japan) posted growth in output ranging from a low of 0.2 percent to a high of 3.1 percent. [12]

The emerging market economies grew 4.1 percent, 0.6 points lower than in 2013 with the economy of China up 7.3 percent, India up 5.9 percent, Brazil remained stagnant with no growth, and Russia was up 0.1 percent. In 2015, world economic growth is projected to increase slightly by 2.8 percent as employment levels improve, consumer confidence improves, and public sector austerity continues to ease in most countries.[13]

While growth in the U.S. and in the emerging market economies edges up, the recovery in Europe continues to be weak, especially in Russia, Greece, Italy, and Spain.[14]

Real Gross Domestic Product by World Region



Source: IHS Global Insight

[12] Source: IHS Global Insight, GDP Components Tables, Interim Forecast, Release date December 15, 2014.
[13] Ibid.
[14] Ibid.

The Asia/Pacific and Latin America/Caribbean regions will continue to experience the world's highest economic growth rates. These regions are expected to see their economic activity grow at annual rates of 4.3 and 3.4 percent a year, respectively, over the forecast period (2014-2035). China, which became the world's second largest economy in 2009 (surpassing Japan), is projected to grow 5.6 percent a year, while India, projected to see its GDP almost quadruple in size, is growing at an average rate of 6.6 percent a year during the forecast period. In contrast, Japan, recently hampered by a new sales tax hike, grows at just 0.8 percent a year over the forecast horizon as structural impediments, and an aging population continues to limit growth[15].

From 2014-2035, worldwide real GDP is projected to increase an average of 3.1 percent per calendar year.[16]

[15] Ibid.
[16] Ibid.

AVIATION TRAFFIC AND ACTIVITY FORECASTS

Total traffic and activity forecasts for commercial air carriers (the sum of mainline and regional carriers) are presented in Tables 5 through 9. These tables contain year-to-year historical data and forecasts.

Mainline air carrier traffic and activity forecasts and the forecast assumptions are displayed in Tables 10 through 18, 21, and 23. These tables contain year-to-year historical data and forecasts.

Regional carrier forecasts and assumptions are found in Tables 24 through 27. These tables provide year-to-year historical and forecast data.

Tables 19 and 20 provide year-to-year historical and forecast data for cargo activity. Table 22 provides year-to-year historical and forecast data for the cargo jet fleet.

General aviation forecasts are found in Tables 28 through 31. These tables provide year-to-year historical data and forecasts.

Tables 32 through 34 provide forecasts of aircraft activity at FAA and contract facilities.

Commercial Aviation Forecasts

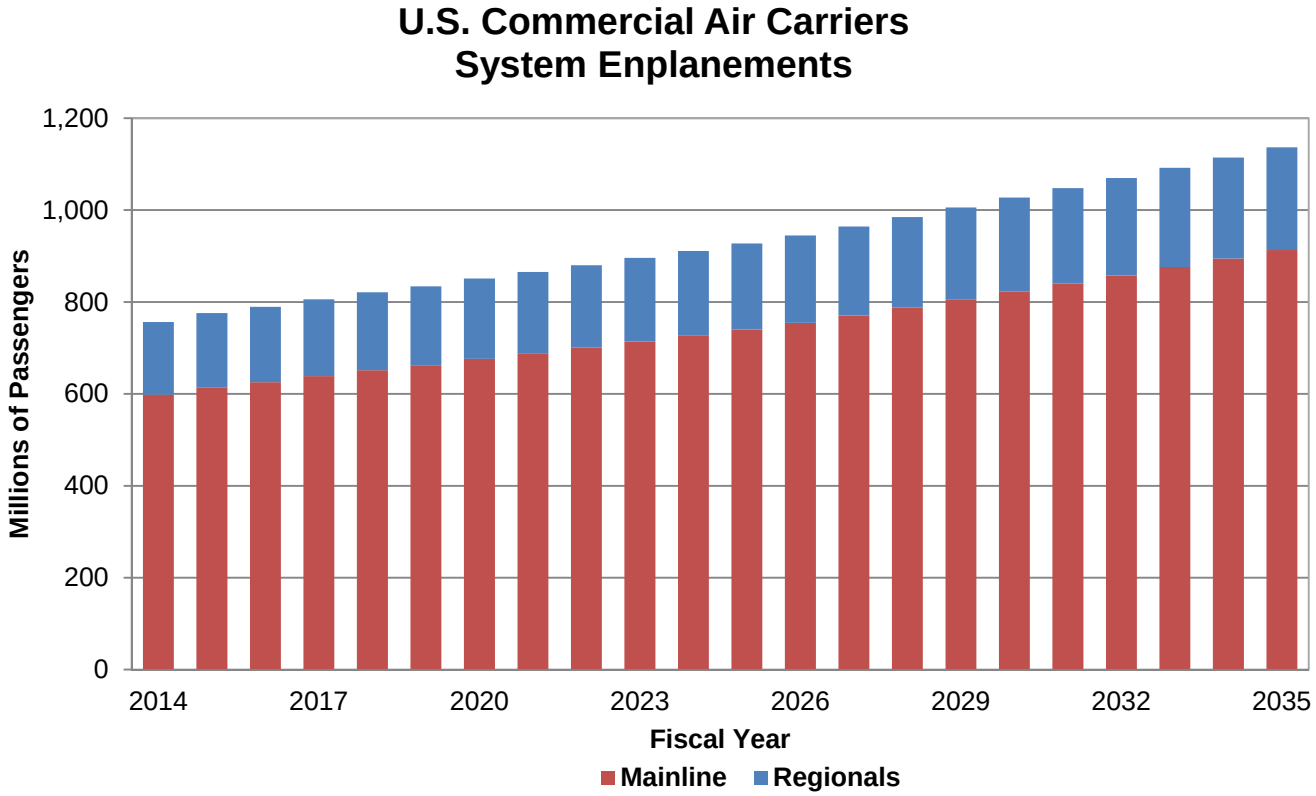
System capacity is projected to increase modestly (up 2.4 percent) in 2015. In the domestic market, mainline carrier capacity expanded only slightly (1.8 percent) in 2014 but is projected to grow at a more robust rate (2.6 percent) in 2015, while capacity for the regional carriers is projected to post its first increase since FY 2011 (up 4.0 percent). In the international sector, capacity is forecast to increase slowly in the Atlantic and Pacific markets, respectively, and increase modestly in the Latin market -- resulting in an overall international capacity increase of 1.6 percent in 2015. Passenger demand growth is in line with capacity growth in 2015 with system RPMs forecast to grow 2.6 percent.

Supported by a growing U.S. and world economy, year over year RPM growth is forecast to be 2.5 percent, on average, over the 2016-2035 period. Over the same time period, system capacity growth averages of 2.5 percent per year as well.

System passengers are projected to increase an average of 1.9 percent a year, with mainline carriers growing at 2.0 percent a year, slightly higher than their regional counterparts (up 1.6 percent). By 2035, U.S. commercial air carriers are projected to fly 1.71 trillion ASMs and transport 1.14 billion enplaned passengers a total of 1.44 trillion passenger miles.

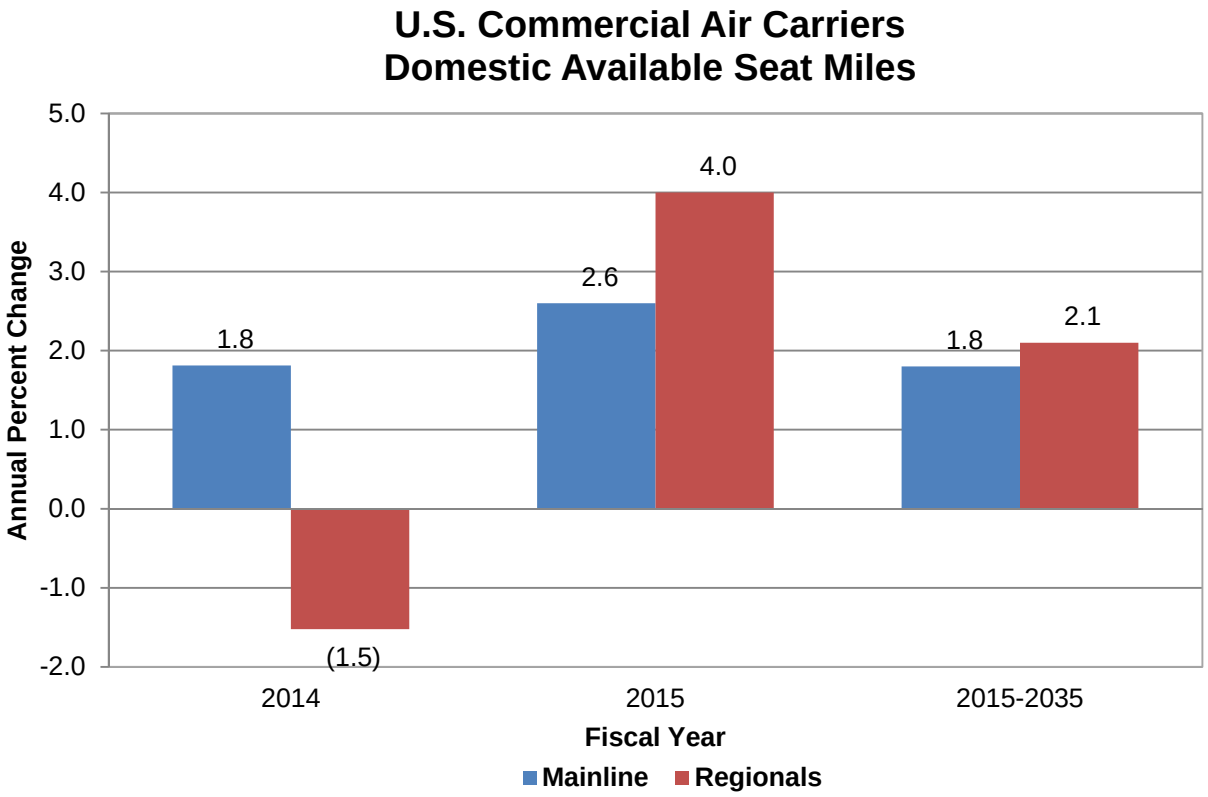
Planes will remain crowded, with load factors projected to grow moderately during the early years of the forecast period then tapering during the mid to latter years to 84.2 percent in 2035 (up 0.6 points compared to the beginning of the forecast period in 2015).

Passenger trip length is forecast to increase by more than 139 miles over the forecast period to 1,270 miles in 2035. The growth in passenger trip length reflects the faster growth in the relatively longer international and domestic trips as compared to shorter-haul flights.

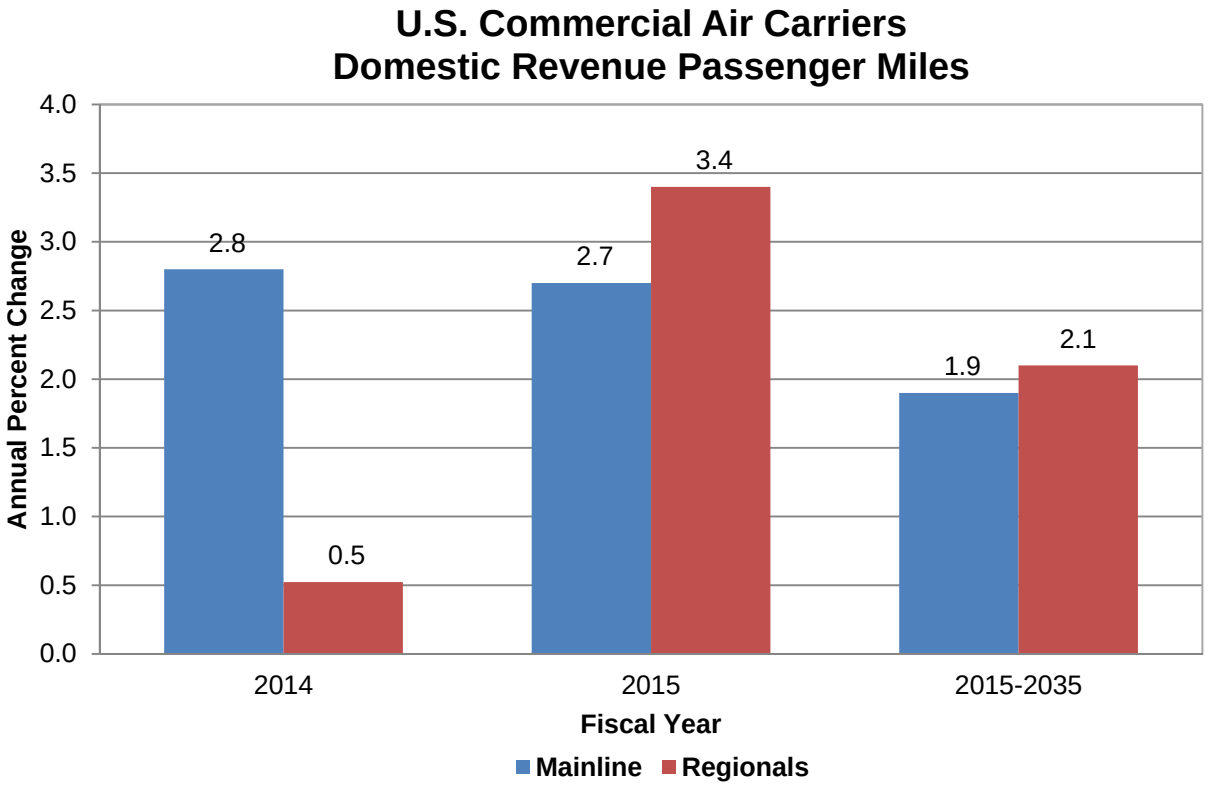


Domestic Markets

After expanding slightly in FY 2014 (up 1.4 percent), domestic capacity is projected to increase by 2.8 percent in 2015. For the remainder of the forecast period, domestic commercial carrier capacity is expected to remain sluggish but steady at an average of 1.8 percent per year as U.S. economic growth accelerates, with mainline carriers growing slower than regional carriers, 1.8 percent versus 2.0 percent.



Since economic growth is picking up in the U.S., U.S. carrier domestic RPM growth in 2015 is projected to increase by 2.8 percent. Mainline carrier RPMs are projected to increase by 2.7 percent during 2015, while regional carrier RPMs are projected to increase at a faster rate (3.4 percent). Traffic growth remains steady for the next decade with annual RPM growth averaging 1.8 percent as the economic recovery slowly gains steam. For the balance of the forecast period (2026-2035) modest economic growth and falling real yield drive domestic RPM growth of 2.1 percent a year. Over the entire forecast period (2014-2035), domestic RPMs grow an average of 1.9 percent a year with mainline carriers growing more slowly than the regional carriers (1.8 percent a year versus 2.1 percent a year, respectively).



Enplanements are forecast to grow moderately (up 2.6 percent) in 2015 after a 2.1 percent increase in 2014. Similar to RPMs, passenger growth is expected to remain steady in the next decade (up 1.5 percent a year) as the recovery gains momentum and then average 1.8 percent per year for the period 2026-2035. Over the entire forecast period (2014-2035), domestic enplanements are projected to grow at an average annual rate of 1.7 percent with mainline and regional carriers growing at the same rate.

The continued modest recovery in demand, coupled with restricted capacity growth, provided pricing power for the mainline carriers during 2014, with nominal yield increasing 4.5 percent (up 2.9 percent in real terms). In spite of slow demand growth, continued tight capacity will provide support for higher fares in 2015, with an increase in nominal yield of 3.0 percent (2.7 percent in real terms). For the entire forecast period, nominal yield is projected to increase at an average rate of 2.0 percent a year, while in real terms it is projected to decline at an average rate of 0.1 percent a year. The decline in real yield over the forecast period assumes technological improvements, competition between carriers, and the increasing convergence of cost structures between network carriers and their low-cost counterparts. The convergence in cost structures between the carrier groups arises from gains in productivity as network carriers retire fuel inefficient aircraft and hold the line on labor costs while existing low-cost carriers contend with aging fleets, maturing work forces, and larger and more complex networks.

Domestic commercial carrier activity (departures) at FAA air traffic facilities is projected to grow more slowly than passenger traffic over the forecast period (1.0 percent per year for departures versus 1.9 percent for RPMs). This reflects increased carrier efficiencies in three operational measures: aircraft size, load factor, and trip length.

Overall domestic aircraft size increased by 2.0 seats to 126.9 in 2014 as a result of the combination of the increased mainline carrier domestic capacity share and increases in the aircraft size of the mainline carrier group. Mainline carrier aircraft size increased 1.2 seats with the retirement of older aircraft (i.e. MD-80's, 737-300/400/500, and 757's). Regional aircraft size increased by 0.9 seats as 50-seat jets were retired and replaced by larger 70-90 seat jet aircraft entered the fleet. Domestic seats per aircraft are forecast to increase in 2015 (up 0.9 seats) as both mainline and regional carrier aircraft will increase in size. Over the balance of the forecast (2016-2035), domestic seats per aircraft are projected to gradually increase to 137.5 seats by 2035, an average increase of 0.5 seats per year.

The FAA's projection of domestic carrier average aircraft size is greatly influenced by carrier fleet plans, publicly known aircraft order books, and the FAA's expectations of the changing domestic competitive landscape. In the near-term (through 2016), the forecast incorporates several assumptions: 1) mainline carriers desire to keep ASM growth in line with GDP growth; 2) the retirement of older inefficient aircraft (many of which are narrow-body); 3) the shifting of wide-body and larger narrow-body aircraft to international services, and 4) growing use of 70-90 seat regional jet aircraft.

In the longer-term, network carriers will replace their older narrow-body aircraft (A320's/B757-200/300) in their domestic route networks with next generation, narrow-body aircraft like the A320 Neo and the 737 Max. The use of smaller aircraft, like the 100-seat Embraer 190, to supplement carrier route structures will be limited. The use of the next generation, narrow-body aircraft will allow mainline carriers to better serve their customers by more closely matching supply (the number of seats) with demand (the number of passengers), and improve profitability through lower operating costs.

Mainline carrier domestic aircraft size increased in 2014 by 1.2 seats to 155.1 seats, and is projected to increase by another 1.2 seats in 2015. Domestic aircraft size for mainline carriers is projected to increase by 0.6 seats in 2016 and then gradually increase for the balance of the forecast. Overall, average aircraft size for the mainline group will increase by 11.3 seats between 2014 and 2035, going from 155.1 to 166.4.

Regional carrier aircraft size flown domestically is projected to grow at a faster pace than that of the mainline carriers. The faster growth in aircraft size for regional carriers is stimulated by continued deliveries of 70 to 90 seat regional jet aircraft that are entering the fleet as well as reductions in the 50-seat and under jet fleet. The larger share of 70 to 90-seat regional jets in the fleet, coupled with 50-seat jet and small turboprop retirements over the next few years, increases the average seating capacity of the regional fleet from 57.0 seats in 2014 to 59.5 seats by 2017. Over the course of the forecast, seats per aircraft for regional carriers increases an average of 0.6 seats per year to 69.3 seats in 2035. The changing aircraft fleet mix is narrowing the gap between the size and aircraft types operated by the mainline and regional carriers.

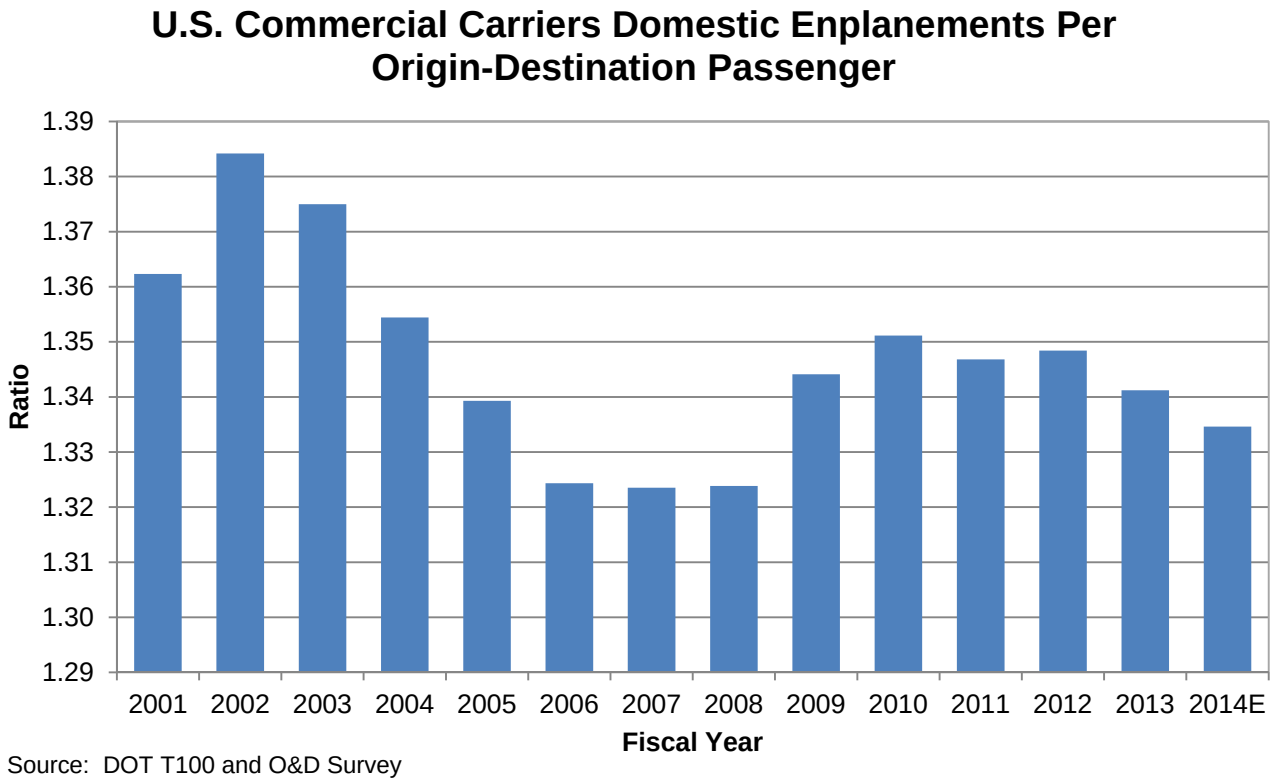
The commercial carrier domestic load factor increased 1.1 points during FY 2014 to an all-time high of 84.4 percent, with record load factors posted by the mainline and regional carrier groups. The mainline carrier group posted a load factor of 85.0 percent, up 0.9 percentage points from 2013. Regional carrier load factor increased 2.1 points to 80.0 percent. In 2015,

the domestic load factor is forecast to remain at 84.4. Thereafter, the commercial carrier domestic load factor gradually rises to 85.7 percent by 2035.

In 2014 the average domestic passenger trip length increased by 3.0 miles to 895.4 miles in total, after increasing by 8.8 miles in 2013. Passenger trip length is forecast to increase by 1.8 miles in 2015 as carriers continue to restructure their networks and realign capacity. After 2015, trip length is projected to remain relatively stable for a number of years before steadily increasing from 2018 onwards, reaching 943.8 miles by 2035. The increase in trip length reflects longer trips flown by the mainline and regional carrier group. Mainline carrier trip length increases as service in thinner, relatively shorter haul markets is dropped or relinquished to regional partners and replaced with longer domestic trips. Regional carrier trip length increases as flying in shorter haul markets is abandoned and/or reduced as more of the larger 70 and 90-seat regional jets continue to penetrate thinner longer-haul markets previously served with mainline equipment.

Another key factor in predicting aviation activity relative to passenger demand is the level of connecting versus non-stop (origin-destination) traffic. However, as the current cycle of U.S. airline industry restructuring unfolds and hub structures change, the impact on local communities and airport activity levels can vary significantly.

The FAA analyzes the ratio of passenger enplanements to origin-destination (O&D) passengers over time to identify changes in connecting versus non-stop traffic. This ratio is an indicator of the tendency of the average passenger to connect during a typical journey. The closer the ratio is to 1.0, the more passengers fly on a point-to-point routing. As the chart below shows, the overall ratio for the U.S. domestic industry peaked in 2002, and then trailed downward to its lowest level (1.32 enplanements for every O&D passenger) by 2007. The decline in the ratio during this six year period is characterized by a drop in connectivity by the network carriers and a rising passenger share for the low-cost carriers. As demand for air travel fell during the great recession and fuel costs skyrocketed, the ratio jumped up to over 1.34 in 2009. Between 2009 and 2013 the ratio fell between 1.341 and 1.351 enplanements for every O&D passenger, but the 2014 figure fell below 1.34 to 1.335, the lowest figure since 2008. The FAA's forecast recognizes the changing pattern of domestic traffic connectivity and these trends are captured in the forecast's passenger enplanement totals.



Source: DOT T100 and O&D Survey

International Markets

U.S. and Foreign Flag Carriers

The FAA provides forecasts of total international passenger demand[17] for travel between the United States and three world travel areas: Atlantic, Latin America (including Mexico and the Caribbean), and Asia/Pacific, as well as for U.S.–Canadian transborder traffic. These forecasts are based on historical passenger statistics provided by the U.S. Customs and Border Protection[18] and Transport Canada, and on regional world historical data and economic projections from Global Insight, Inc.

Total passenger traffic between the United States and the rest of the world is estimated to total 195.7 million in CY 2014, 5.5 percent higher than in 2013. Passenger demand growth slows in 2015 and 2016 (up 4.7 and 3.3 percent, respectively) but picks up again in 2017 (up 4.2 percent) as the U.S. and world economic recovery solidifies. For the balance of the forecast period (2017-35), stable worldwide economic growth leads international passengers to grow at an average rate of 4.1 percent a year, totaling 452.9 million in 2035.

[17] The sum of U.S. and foreign flag carriers.

[18] Customs and border protection data is processed and released by the Department of Commerce.

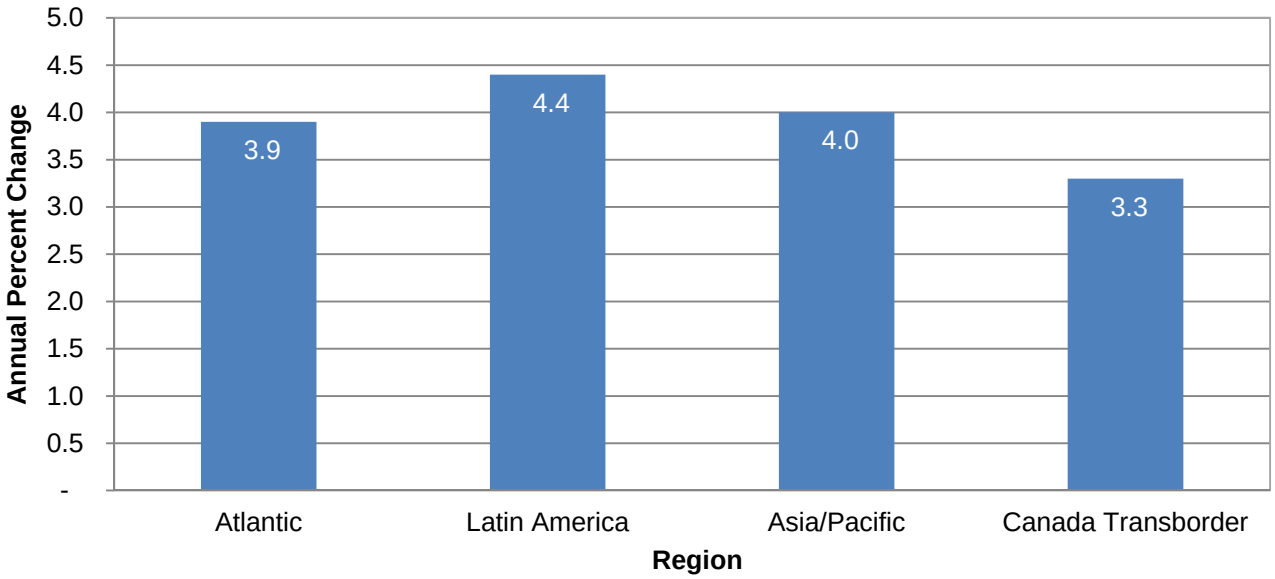
In the Latin America region, sustained economic growth drives passenger growth to an average rate of 4.2 percent a year over the entire forecast period (2014-2035). The highest growth is projected for Mexico (average annual growth of 4.7 percent) while the second largest market in the region, Brazil, grows at an average of 4.4 percent a year. The slowest rates of growth are projected to occur in the Bahamian and Jamaican markets (averaging growth of zero and 3.3 percent a year, respectively).

Emerging economies in the Asia-Pacific market boost passenger demand an average of 4.0 percent per year. Taiwan, South Korea, India and China (passenger growth of 4.2, 4.5, 4.2, and 6.2 percent a year, respectively) are forecast to be the fastest growing markets in the region. Growth in the Japan market (the largest and most established in the region) is projected to be well below the regional average at 2.7 percent a year.

In the more mature Atlantic market, the Open Skies agreement between the European Union and the United States along with competition between global airline alliances helps fuel passenger growth of 3.9 percent a year over the forecast period. Over the 20-year forecast horizon, average annual passenger growth in the top four Atlantic country specific markets, the United Kingdom, Germany, France and the Netherlands, is 3.7, 3.4, 2.9, and 3.6 percent, respectively.

Growth in the Canadian transborder market is forecast to be higher than that of the domestic U.S. market[19] (1.7 percent), averaging 3.3 percent a year over the forecast period.

U.S. and Foreign Flag Carriers
Passengers to/from U.S.
Calendar Years 2015-2035



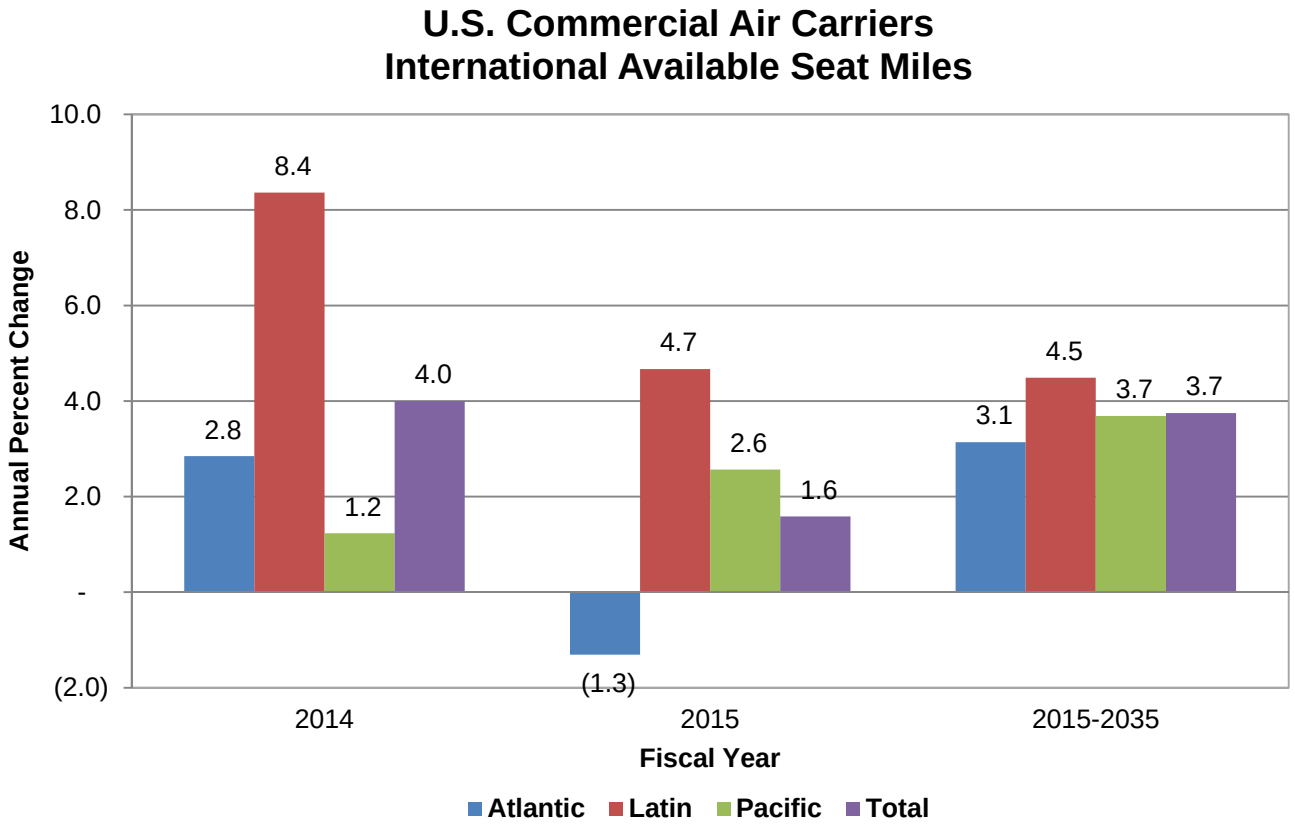
Source: U.S. Customs & Border Protection data processed and released by the Department of Commerce; data also received from Transport Canada.

[19] Mainline and regionals.

U.S. Flag Air Carriers

International U.S. commercial air carrier capacity grew modestly in 2014, up 4.0 percent from 2013. The Atlantic market recovered from a loss the previous year (up 2.8 percent) after declining 2.9 percent in 2013. The Latin America market posted a solid 8.4 percent increase while the Pacific market showed more modest growth, up 1.2 percent.

In 2015, moderate demand and increasing competition between global alliances is expected to boost total international capacity by 1.6 percent as all markets are expected to grow. The fastest growth is projected for the Latin market (up 4.7 percent), followed by the Pacific (up 2.6 percent); on the other hand, the Atlantic will show a slight loss (down 1.3 percent). System-wide capacity is projected to inch up in 2015 (up 1.6 percent), fueled by stronger economic growth projected for all world regions, and is projected to average 3.8 percent a year for the remainder of the forecast period (2016-2035). Moderate growth over the forecast period reflects favorable U.S. and world economic activity as it recovers from the global contraction.

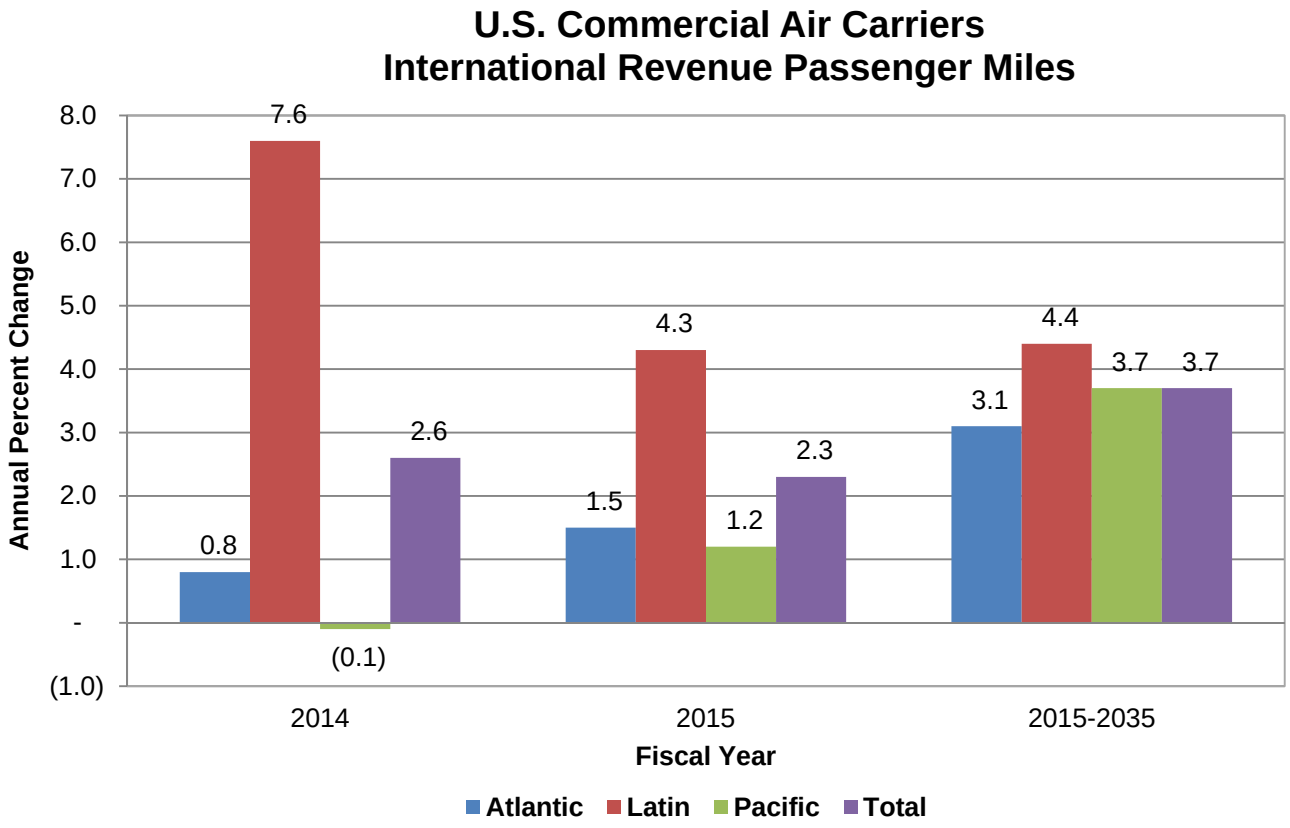


U.S. commercial air carrier international RPMs and enplanements increased 2.6 and 3.4 percent, respectively, in 2014. Increases in RPMs for the Latin market (up 7.7 percent) and the Atlantic market (up 0.8 percent) offset a decrease in the Pacific market (down 0.1 percent).

In 2015, U.S. carrier international RPMs are expected to increase by 2.3 percent as increases in the Latin American market (up 4.3 percent) compensate for the more anemic upticks in the Atlantic market (up 1.5 percent) and the Pacific market (up 1.2 percent).

For the balance of the forecast (2016-2035), RPMs increase an average of 3.7 percent a year with the fastest growth in the Latin region (up 4.5 percent).

International enplanement growth for 2015 by U.S. commercial air carriers is projected to be 2.4 percent as solid growth in both the Latin (up 4.0 percent) and Atlantic (up 1.5 percent) markets offset a decline in the Pacific region (down 1.5 percent) where a slowdown in both China and India's economic growth affects demand. Over the balance of the forecast period (2016-2035), enplanements are forecast to increase an average of 3.7 percent a year with the fastest growth in Latin and Pacific markets (up 4.3 and 3.7 percent a year, respectively).



International enplanement growth in U.S. carrier over the period 2014-2035 compares favorably to the growth in overall international passengers by U.S. and foreign flag carriers (4.1 percent a year, including the U.S.-Canada transborder market). Forecasts of international demand assume U.S. and foreign flag carriers will benefit from improving economic activity in both the United States and world markets.

International load factor for U.S. commercial carriers was 81.4 percent in 2014, a decrease of 1.2 points from 2013. Load factor is expected to slightly increase to 81.9 in 2015 as capacity increases in line with demand. International load factor is projected to remain steady around 81.9 percent over the balance of the forecast period to 2035 as traffic growth matches capacity growth in all three world markets.

International passenger real yields for U.S. commercial carriers were down 0.8 percent in 2014 as decreases in the Pacific market (down 3.4 percent) and in the Latin market (down 2.0 percent) offset an increase in the Atlantic market (up 1.3 percent). In 2015 international real yield is expected to decrease by 0.5 percent; for the remainder of the forecast period, real yield decreases an average of 0.6 percent a year. In nominal terms, international yields are forecast to decrease 0.2 percent in 2015, and then grow at an annual rate of 1.5 percent over the remainder of the forecast. The decline in real yields assumes competitive pressures (including established and relatively new international carriers) and technological improvements will hold the line on fare increases.

Commercial Air Carriers – Air Cargo

Historically, air cargo activity tracks with GDP. Additional factors that affect air cargo growth are fuel price volatility, movement of real yields, and globalization. Significant structural changes have occurred in the air cargo industry; among these are air cargo security regulations by the FAA and TSA, maturation of the domestic express market, a shift from air to other modes (especially truck), use of all-cargo carriers (e.g., FedEx) by the U.S. Postal Service to transport mail, and the increased use of mail substitutes (e.g. e-mail, cloud-based services).

The forecasts of Revenue Ton Miles (RTMs) are based on several assumptions specific to the cargo industry. First, security restrictions on air cargo transportation will remain in place. Second, most of the shift from air to ground transportation has occurred. Finally, long-term cargo activity will be tied to economic growth.

The forecasts of RTMs were based on models that link cargo activity to GDP. Forecasts of domestic cargo RTMs were developed with real U.S. GDP as the primary driver. Projections of international cargo RTMs were based on growth in world GDP, adjusted for inflation. The distribution of RTMs between passenger and all-cargo carriers was forecast based on an analysis of historic trends in shares, changes in industry structure, and market assumptions.

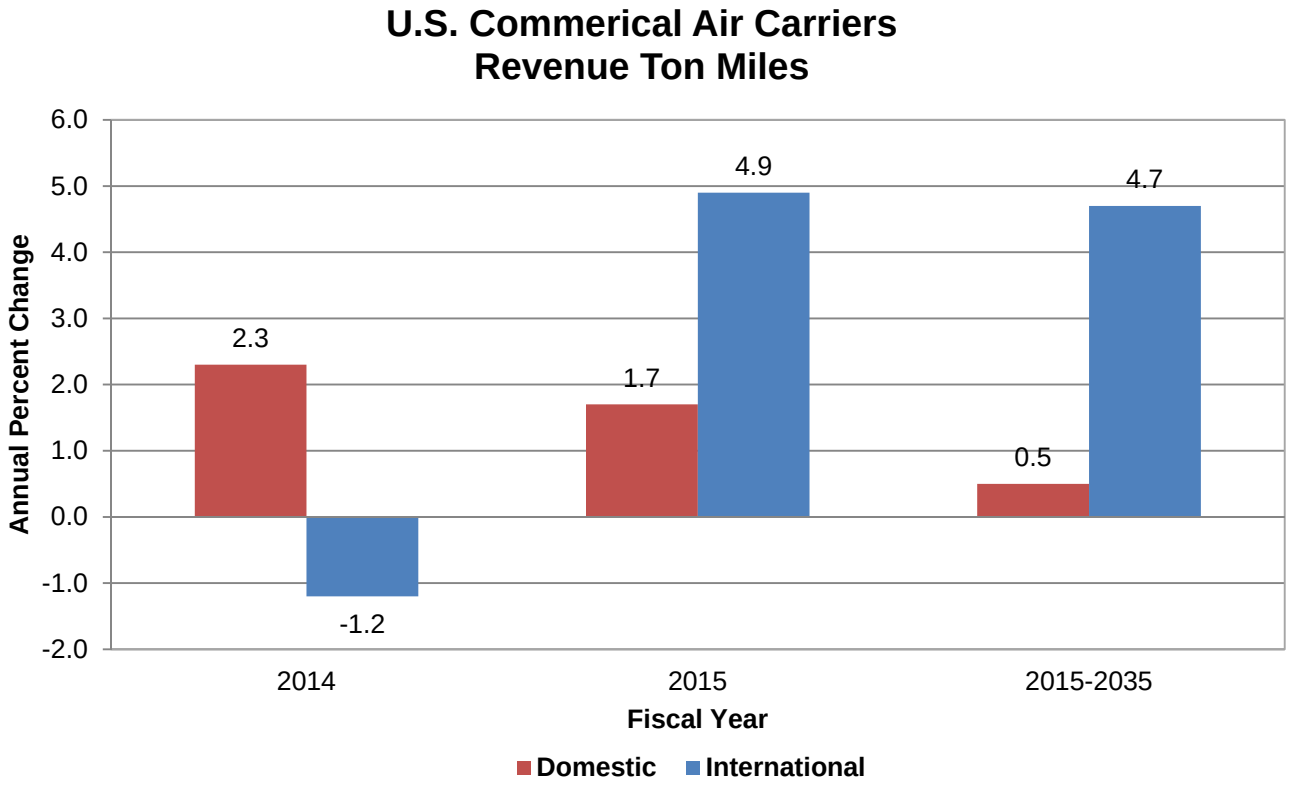
Total RTMs did not change in 2014 but are forecast to grow 3.7 percent in 2015. Driven by steady U.S. and world economic growth, total RTMs are projected to increase at an average annual rate of 3.6 percent for the balance of the forecast period.

Domestic cargo RTMs increased 2.3 percent in 2014 and are forecast to grow 1.7 percent in 2015 as the U.S. economic recovery continues. Between 2015 and 2035, domestic cargo RTMs are forecast to increase at an average annual rate of 0.5 percent.

The freight/express segment of domestic air cargo is highly correlated with capital spending. Thus, this segment's growth will be tied to growth in the economy. The mail segment of domestic air cargo will be affected by price and substitution (e.g. e-mail).

The all-cargo carriers have increased their share of domestic cargo RTMs flown from 70.1 percent in 2000 to 88.6 percent in 2014. This is because of the shrinkage of the domestic freight/express business for passenger carriers as they have responded to the substantial shocks to the aviation system during this time. Shrinking networks, elimination of unprofitable flying, and consolidation have reduced opportunities for growth in their freight/express business. The all-cargo share is

forecast to grow to 90.2 percent by 2035 based on increases in capacity for all-cargo carriers and ongoing security considerations.



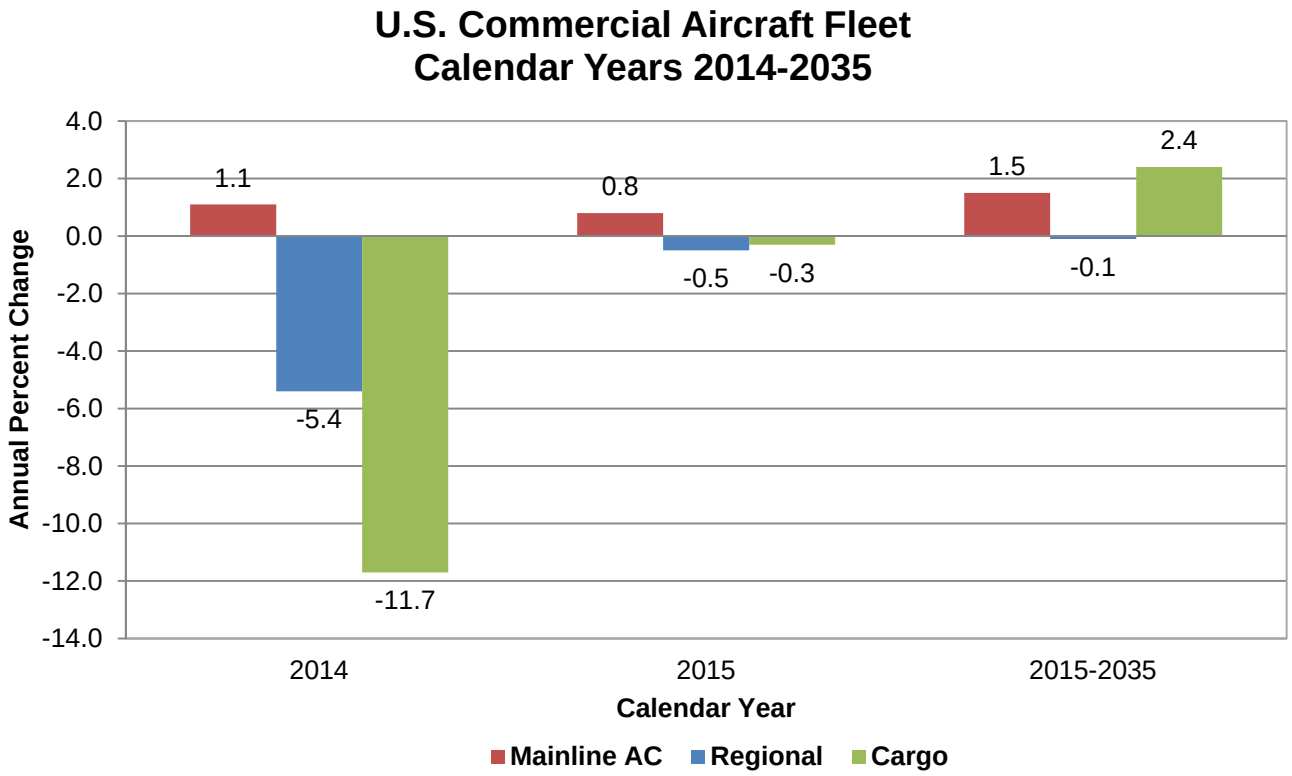
International cargo RTMs fell for the third year in a row, down 1.2 percent in 2014 as stagnation in Europe and a slowdown in China's economic growth slowed worldwide trade. They are projected to grow 4.9 percent in 2015 as global trade growth resumes. For the forecast period (2014-35) international cargo RTMs are forecast to increase an average of 4.7 percent a year based on projected growth in world GDP.

The share of international cargo RTMs flown by all-cargo carriers increased from 50.3 percent in 2000 to 72.3 percent in 2014. Continuing the trend experienced over the past decade, the all-cargo share of international RTMs flown is forecast to increase modestly to 78.6 percent by 2035.

Commercial Aircraft Fleet

The number of commercial aircraft is forecast to grow from 6,676 in 2014 to 8,131 in 2035, an average annual growth rate of 0.9 percent or 69 aircraft annually. The commercial fleet is projected to decrease by 2 aircraft in 2015 after shrinking by 57 aircraft in 2014 as the slow recovery in demand and rising fuel prices prompted carriers to prune their fleets. Since 2007, the U.S. commercial airline fleet has contracted by 1,056 aircraft. In comparison, the U.S.

commercial fleet contracted by 262 aircraft between 2000 and 2003, the last downturn in aviation.



The number of passenger jets in the U.S. mainline carrier fleet fell by 9 aircraft in 2014 and is projected to rise by 49 aircraft in 2015 as network carriers continue to remove older, less fuel efficient narrow body aircraft. After 2015, the mainline air carrier passenger fleet increases an average of 60 aircraft a year over the remaining years of the forecast period, totaling 5,015 aircraft in 2035. The narrow-body fleet (including E-190's at JetBlue and American Airways) is projected to grow by 38 aircraft annually over the period 2014-2035; the wide-body fleet grows by 21 aircraft a year as the Boeing 787 and Airbus A350's enter the fleet.

The regional carrier passenger fleet is forecast to decrease by 57 aircraft in 2015 as increases in larger regional jets are more than offset by reductions in 50 seat and smaller regional jets and turboprops. After 2015, the regional carrier fleet is projected to decrease by an average of 3 aircraft (-0.1 percent) a year over the remaining years of the forecast period, totaling 2,034 aircraft in 2035. The number of regional jets (90 seats or fewer) at regional carriers is projected to grow from 1,593 in 2014 to 1,852 in 2035, an average annual increase of 0.7 percent. All of the growth in regional jets over the forecast period occurs in the larger 70 to 90-seat aircraft. During the forecast period, all regional jets of 50 or less seats are removed from the fleet, reflecting the relaxation of scope clauses. The turboprop/piston fleet is expected to shrink from 555 units in 2014 to 182 in 2035. Turboprop/piston aircraft are expected to account for just 8.9 percent of the regional carrier passenger fleet in 2035, down from a 25.8 percent share in 2014.

Cargo large jet aircraft are forecast to increase by 6 aircraft in 2015 to 764 aircraft after increasing by 17 aircraft in 2014 primarily due to 757F's to Federal Express. For the

remainder of the forecast period, cargo large jet aircraft at U.S. carriers are forecast to grow at an average annual rate of 1.8 percent to 1,082 aircraft in 2035. The narrow-body, cargo jet fleet is projected to increase by 3 aircraft a year over the 21-year forecast period as older 757's and 737's are converted to cargo service. The wide-body, cargo jet fleet is projected to increase by 13 aircraft yearly.

General Aviation

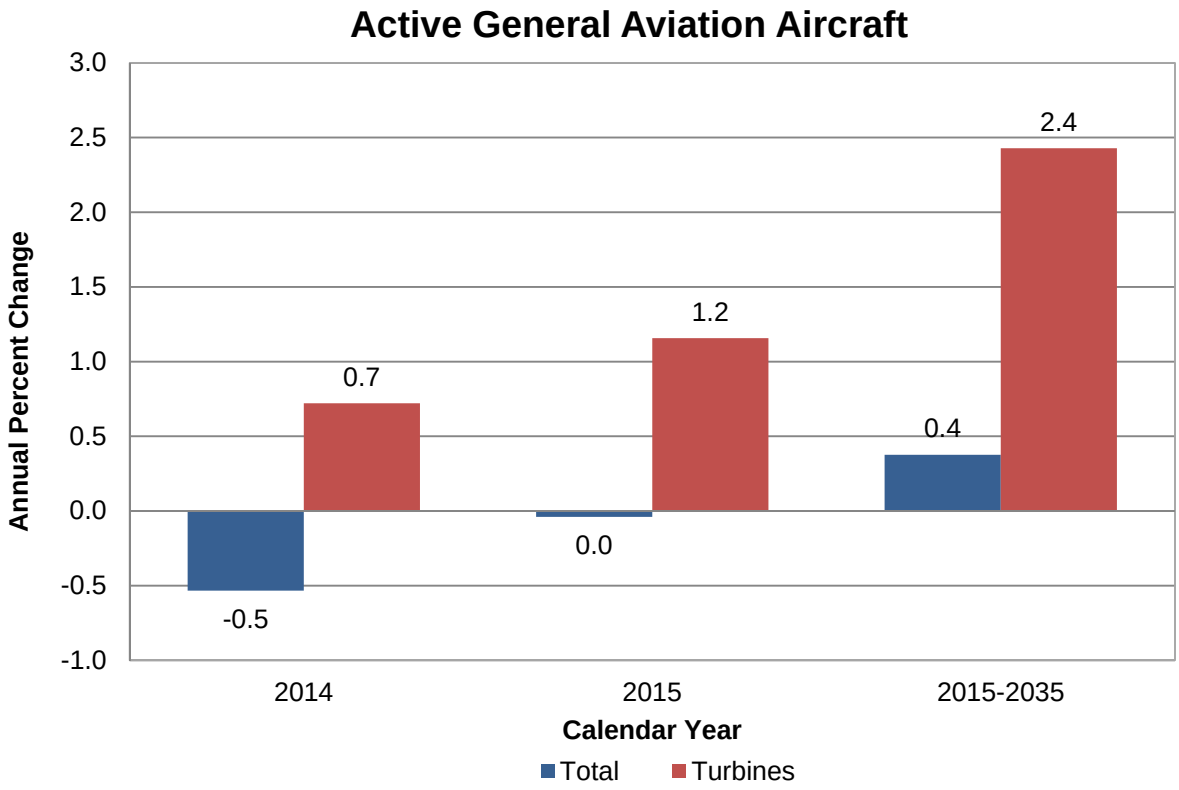
The FAA forecasts the fleet and hours flown for single-engine and multi-engine piston aircraft, turboprops, turbojets, piston and turbine powered rotorcraft, and light sport, experimental and "other" (which consists of gliders and lighter than air vehicles) aircraft. The forecasts are carried out for "active aircraft,"[20] not total aircraft. The FAA uses estimates of fleet size, hours flown, and utilization from the General Aviation and Part 135 Activity Survey (GA Survey) as baseline figures upon which assumed growth rates can be applied. Beginning with the 2004 GA Survey, there were significant improvements to the survey methodology. Coinciding with the changed survey methodology, large changes in many categories were observed, both in the number of aircraft and hours flown. The results of the 2013 GA Survey are consistent with the results of surveys conducted since 2004, reinforcing our belief that the methodological improvements have resulted in superior estimates relative to those of the past. Thus, they are used as the basis for our forecast. Because results from the GA Survey are not published until the following year, the 2013 statistics are the latest available. As an additional note, the results of the 2011 survey were not available to use. Therefore, estimates of 2011 fleet and hours were based on estimated number of general aviation aircraft in the FAA civil aircraft registration database by the end of CY 2011, and past rates of active aircraft and utilization by type of aircraft and age of the fleet. The 2013 GA Survey results reflect the majority of the anticipated effect of the 2010 Rule for Re-Registration and Renewal of Aircraft Registration. The complete effect of this Rule, which requires all aircraft registered in the U.S. to re-register within the three-year period from 2011 to 2013, will be noted after the 2014 Survey, when the residual Registry cleanup efforts are taken into account. The 2013 Survey showed that between 2010 and 2013 the number of active GA aircraft went down by 10.5 percent, from 223,370 to 199,927. There may be an additional marginal decline in the active fleet due to cleaning of the Registry. General aviation flight hours for 2014 are estimated based on the active fleet and other activity indicators at 23.1 million, with an increase of 0.8 percent from the previous year. Activity forecasts begin in 2015 and continue through 2035.

After growing rapidly for most of the past decade, and then slowing over the past few years, the most recent shipment activity indicates the modest growth continues in the overall general aviation aircraft market. While the recovery in the business jet market has been slow, 2014 recorded the first increase in shipments by U.S. manufacturers since 2008. The forecast calls for robust growth in the long term outlook, driven by higher corporate profits and the growth of worldwide GDP, though at rates slightly lower than those predicted last year. Continued concerns about safety, security, and flight delays keep business aviation attractive relative to commercial air travel. As the industry experts and prior year's survey results report a significant portion of piston aircraft hours are also used for business purposes, we predict

[20] An active aircraft is one that flies at least one hour during the year.

business usage of general aviation aircraft will expand at a faster pace than that for personal and recreational use. Increased demand for turboprop aircraft also contributes to increased turbine fleet and hours.

The active general aviation fleet is projected to increase at an average annual rate of 0.4 percent over the 21-year forecast period, growing from an estimated 198,860 in 2014 to 214,260 aircraft by 2035. The more expensive and sophisticated turbine-powered fleet (including rotorcraft) is projected to grow to a total of 45,905 aircraft at an average rate of 2.4 percent a year over the forecast period, with the turbine jet portion increasing at 2.8 percent a year, reaching a total of 20,815 by 2035.



The number of active piston-powered aircraft (including rotorcraft) is projected to decrease at an average annual rate of 0.5 percent from the 2014 total of 139,890 to 125,935 by 2035, with declines in both single and multi-engine fixed wing aircraft, but with the smaller category of piston-powered rotorcraft growing at 2.1 percent a year. Single-engine fixed-wing piston aircraft, which are much more numerous within this group, are projected to decline at a rate of 0.6 percent, while multi-engine fixed wing piston aircraft are projected to decline by 0.4 percent a year.

Starting in 2005, a new category of aircraft (previously not included in the FAA's aircraft registry counts) was created: "light sport" aircraft. At the end of 2013, a total of 2,056 active special light-sport aircraft were estimated in this category (Beginning in 2009, experimental light-sport aircraft category was reported in the FAA statistics as a separate category and until 2012 reported under light sport aircraft together with the special light-sport aircraft. Starting in 2012, this experimental light-sport group was re-classified within the experimental aircraft

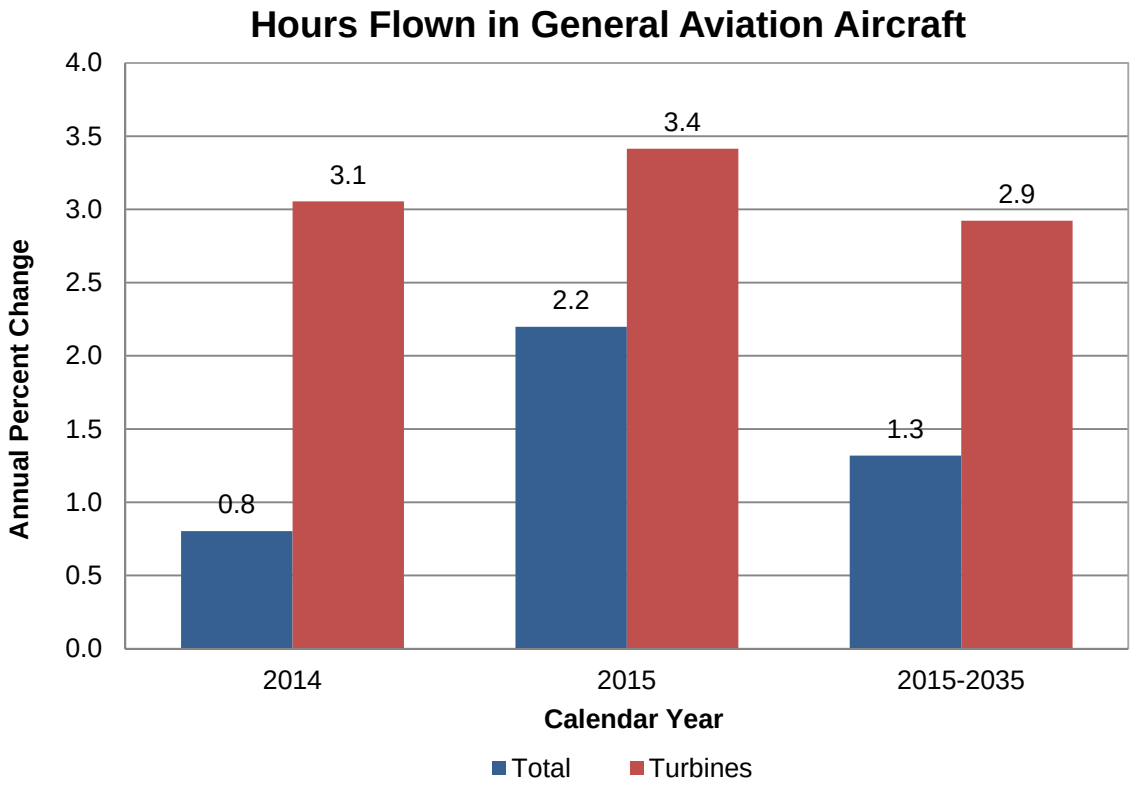
category). The forecast assumes about 4.3 percent annual growth of the fleet by 2035, to a total of 5,360 light sport aircraft.

The total number of general aviation hours flown is projected to increase by 1.4 percent yearly over the forecast period. The FAA projects faster growth in hours will occur after 2023 with increases in the fixed wing turbine aircraft fleet, as well as increasing utilization of both single and multi-engine piston aircraft as the aging of this fleet starts to slow down. In the medium term, much of the increase in hours flown reflects strong growth in the rotorcraft and turbine jet fleets. It is also expected that declining fuel prices will slow down the decrease in piston flight hours over the short to medium term.

Hours flown by turbine aircraft (including rotorcraft) are forecast to increase 2.9 percent yearly over the forecast period, compared with a decline of 0.3 percent for piston-powered aircraft. Although hours flown by piston rotorcraft are forecast to increase an average of 2.2 percent per year during the forecast period, they have a relatively small share (less than 10 percent) in this segment of hours flown by general aviation aircraft; and thus have a small impact on the overall trend. Jet aircraft are forecast to account for most of the increase, with hours flown increasing at an average annual rate of 3.6 percent over the forecast period. The large increases in jet hours result mainly from the increasing size of the business jet fleet, along with continued recovery in utilization rates from recession induced record lows. Turboprop hours are also expected to continue their increase, as indicated by the 2013 GA Survey.

Rotorcraft hours were less impacted by the economic downturn when compared to other categories and rebounded earlier. However, the 2013 GA survey recorded declines in the active rotorcraft fleet and utilization rates. It is uncertain if the decrease in utilization is permanent. The decline in oil prices has different effects on various segments of this sector. While decreasing activity is expected in oil exploration area, and some other functions such as aerial mapping/ photography, patrol, and surveillance may see decreasing use of rotorcrafts, yet other uses, including corporate, air taxi, air medical, and air tours, may experience offsetting increases. Rotorcraft hours are projected to grow by 3.0 percent yearly over the forecast period with utilization of rotorcraft projected to increase by 0.4 percent a year. Turbine rotorcraft hours are forecast to grow at an average annual rate of 3.2 percent over the forecast period.

Lastly, the light sport aircraft category, which now includes only the special light sport (experimental light-sport aircraft is now considered as part of the experimental aircraft category), is expected to see an increase of 5.1 percent a year in hours flown, primarily driven by growth in the fleet.



The number of active general aviation pilots (excluding air transport pilots) is projected to be 448,400 in 2035, an increase of about 8,000 (up 0.1 percent yearly) over the forecast period. Between 2011 and 2014, there was a decline of 16,543 in the number of commercial pilots, accompanied by an increase of 10,422 in the number of air transport pilots (ATPs). A substantial part of the decline in commercial pilot certifications is thought to be a result of these pilots obtaining the higher level ATP certificates as required by the Airline Safety and Federal Aviation Administration Extension Act of 2010. This Act mandated that all part 121 (scheduled airline) flight crew members would hold an ATP certificate by August 2, 2013. The FAA estimated there were about 13,000 airline pilots holding a commercial pilot certificate, most of which were serving at Second in Command positions at the regional airlines. Since airline pilots could no longer operate with only a commercial pilot certificate after August 2013 (excluding a limited number of special cases as specified by 2013 FAA Final Rule for Pilot Certification and Qualification Requirements for Air Carrier Operations), we have reduced the rate of increase of our commercial pilot forecast compared to the previous years. Thus, commercial pilots are projected to increase from 104,322 in 2014 to 113,350 in 2035 with an average annual growth rate of 0.4 percent over the forecast period, compared to the 0.6 percent average growth rate of the past year's forecast. Our ATP forecast, while higher than previous year's forecast during near to medium term, remains close to the last year's forecast after 2024, with a similar average annual rate of increase (0.5 percent) overall.

In other pilot certificate categories, the number of student pilots is forecast to decrease at an average annual rate of 0.3 percent over the forecast period, declining from 120,546 in 2014 to 112,200 in 2035. The number of private pilots is projected to decrease at an average yearly rate of 0.3 percent over the forecast period to a total of 163,600 in 2035, from 174,883 in 2014.

The number of rotorcraft-only pilot certificates is forecast to increase at an average rate of 2.2 percent, from 15,511 in 2014 to 24,440 in 2035. In addition, the FAA is projecting that by the end of the forecast period a total of 14,950 sport pilots will be certified. As of December 31, 2014, the number of sport pilot certificates issued was 5,157 reflecting a steady increase in this new "entry level" pilot certificate that was only created in 2005.

FAA Operations Forecasts

FAA and Contract Towers

Activity at the 516 FAA (264) and contract towers (252) totaled 49.6 million operations in 2014, down 0.9 percent from 2013. Activity is projected to rise slightly (0.4 percent) in 2015, with increases in both commercial and non-commercial activity. Growth in total activity at FAA and contract towers accelerates in 2016 (1.1 percent) and for the balance of the forecast, activity grows at an average rate of 0.9 percent per year, reaching 59.9 million operations in 2035.

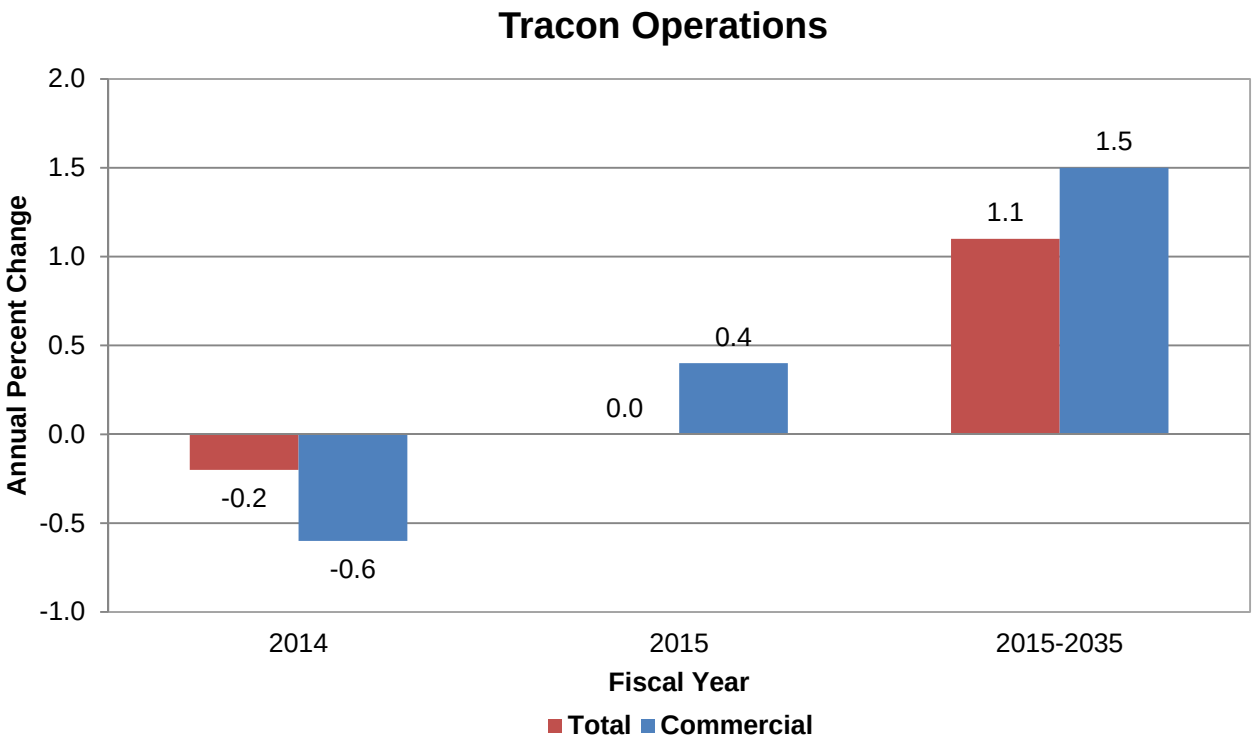
Most of the growth over the forecast period results from increased commercial aircraft activity (up 1.5 percent annually). Air carrier activity is projected to increase sharply (4.2 percent) in 2015 as carriers swap in larger regional jets for smaller (50 seats or less) regional jets and increase capacity to meet growing demand. Beyond 2015, air carrier activity is projected to increase an average of 2.7 percent per year over the forecast period. The increase in air carrier activity is driven by combination of mainline carriers increasing capacity in response to growing demand as well as an increase in the operations of 70-90 seat jets which are counted in the air carrier category. Commuter/air taxi operations are forecast to fall 4.9 percent in 2015 and decrease 1 percent a year for the balance of the forecast period as regional jets less than 50 seats exit the industry.

General aviation activity decreased 1.1 percent in 2014 as itinerant activity fell 1.4 percent. Overall general aviation activity is projected to increase 0.3 percent in 2015 reflecting the impact of an improving economy on flight hours and operations. For the entire forecast period, general aviation activity at towered airports is projected to increase an average of 0.4 percent a year, to 28.0 million operations in 2035. General aviation activity at combined FAA/contract towers grows in line with the modest increase forecast for general aviation hours already cited. Most operations at the smaller towers are in piston aircraft, while those at the largest airports tend to be turbine operations.

Military activity fell 1.4 percent in 2014 and is assumed to remain at 2014 levels (2.5 million) throughout the balance of the forecast period.

The forecasted growth in operations is not uniform across all facility categories. Over the forecast period, total operations at large hub airports (those airports that enplane 1% or more of total US enplanements) are projected to increase from 12.5 million in 2014 to 17.6 million in 2035, an average annual rate of 1.7 percent a year. Operations at these facilities are overwhelmingly commercial in nature (95.0 percent in 2014) and their growth will mirror the growth in total commercial operations. Total operations at medium hub airports (those airports that enplane 0.25 to 0.99 percent of total US enplanements) are projected to increase a bit slower than the large hubs, averaging 1.5 percent a year over the forecast period, to total 6.5 million in 2035. In the largest category, small and non-hub airports, where 81.6 percent of the operations are non-commercial in nature, total operations are projected to increase from 32.3 million in 2014 to 35.8 million in 2035, an average annual rate of 0.5 percent a year.

Operations[21] at FAA TRACONs (Terminal Radar Approach Control) fell 0.4 percent in 2014, the tenth year in a row. They are projected to remain steady in 2015 as declines in non-commercial activity offset a slight rise in commercial activity. After 2015, TRACON operations are forecast to increase at an average annual rate of 1.1 percent for the balance of the forecast, reflecting the increasingly commercial nature of TRACON operations. For the entire forecast period, TRACON operations grow an average of 1.1 percent per year, totaling 46.1 million in 2035.



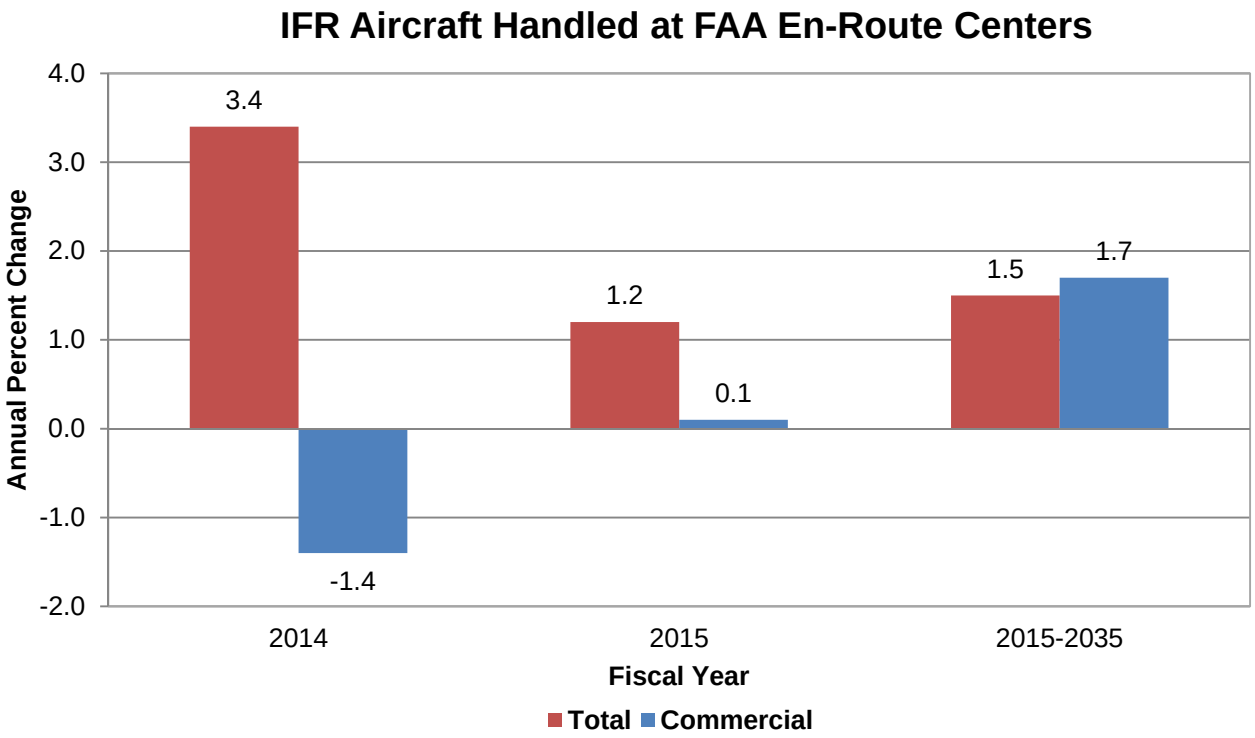
Over the forecast period, commercial aircraft operations at FAA TRACONs are forecast to increase at 1.5 percent per year driven by growth in air carrier activity. General aviation operations at FAA TRACONs are projected to grow 0.6 percent a year, reflecting the slow growth in the general aviation fleet and hours. Military activity is expected to remain at its 2014 level (2.2 million) of activity throughout the forecast period.

En-route Centers

The number of IFR aircraft handled at FAA en-route traffic control centers increased 3.4 percent to 41.3 million in 2014, with increases in all categories except commuter/air taxi. In 2015 increases in air carrier activity and general aviation activity, result in en-route center activity increasing by 1.2 percent. After 2015, through the balance of the forecast period, en-route activity increases 1.5 percent annually, reaching 56.1 million aircraft handled in 2035.

[21] TRACON operations consist of itinerant Instrument Flight Rules (IFR) and Visual Flight Rules (VFR) arrivals and departures at all airports in the domain of the TRACON as well as IFR and VFR overflights.

Between 2014 and 2034 commercial activity is projected to increase at an average annual rate of 1.7 percent, reflecting increases in the commercial fleet and aircraft stage lengths. During the same period, general aviation activity is projected to grow 0.8 percent per year, reflecting growth in business aviation. Military activity is held constant at the 2014 activity level throughout the forecast period.



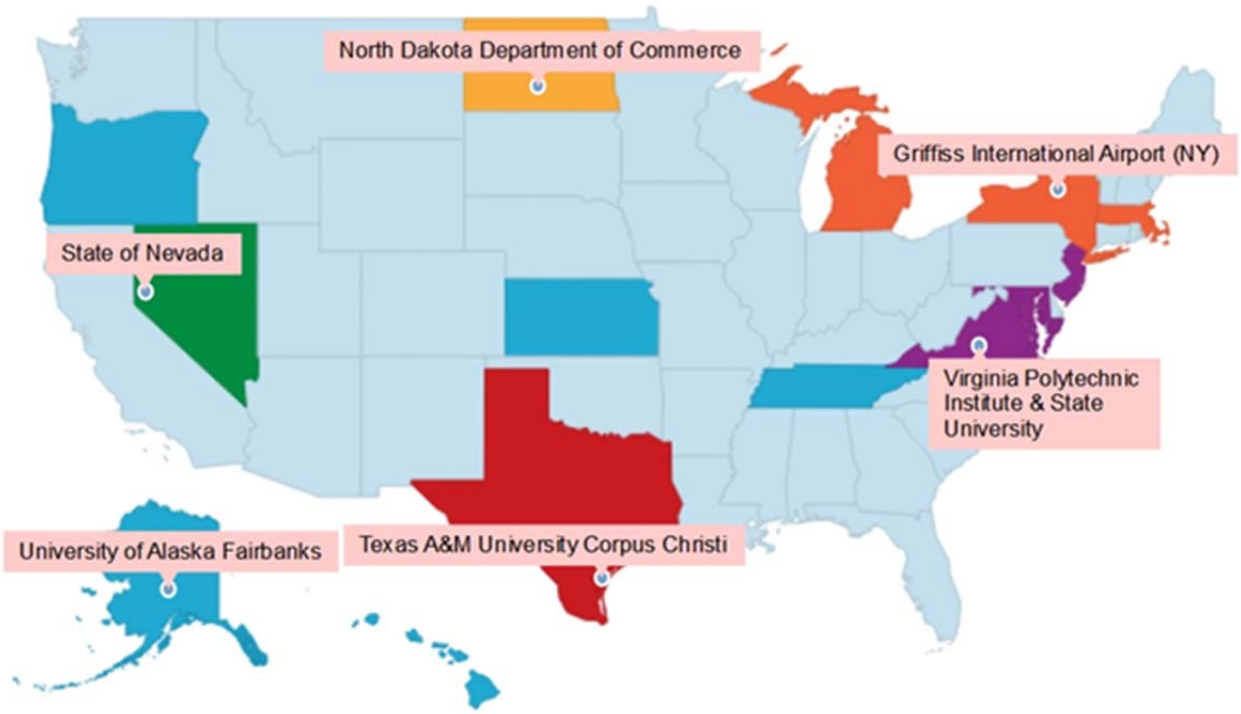
Activity at FAA en-route centers is growing faster than at towered airports because more of the activity at en-route centers is from the faster growing commercial sector and high-end (mainly turbine) general aviation flying. Much of general aviation activity at towered airports, which is growing more slowly, is local in nature, and does not impact the centers.

UNMANNED AIRCRAFT SYSTEMS

2014 has shown significant growth in Unmanned Aircraft Systems (UAS). Six UAS Test Sites were selected in late 2013 and are operational, the FAA is evaluating submissions for a UAS Center of Excellence (COE), and a Notice of Proposed Rulemaking (NPRM) for small UAS is being coordinated. All of these efforts help the FAA develop regulations and operational procedures to achieve the end goal of safe integration of public, commercial and civil UAS in the National Airspace System (NAS).

UAS Test Sites

The FAA Modernization and Reform Act of 2012 (FMRA) directed the FAA to establish a Test Site program to further the integration of UAS into the NAS. The agency solicited proposals from public entities, including state and local governments and eligible universities, interested in operating the Test Sites. During 2014, all six Tests Sites became operational. The six Test Sites have affiliate states where they plan to conduct operations, shown below.



The Test Sites will provide valuable safety data along with operational expertise to enable the safe operation of aircraft in the NAS.

UAS Center of Excellence

This year, the FAA will establish a Center of Excellence (COE) for UAS. The COE will be a geographically dispersed consortium of university partners and their affiliates. Specific projects will be defined and funded through grants. The goal is to create a cost-sharing relationship between academia, industry, and government that will focus on research areas of primary interest to the FAA and the UAS community. The FAA expects the COE to perform short- and long-term basic and applied research through a variety of analyses, simulations, and prototyping activities.

Section 333 Exemptions

Section 333 of the FMRA grants the Secretary of Transportation the authority to determine whether an airworthiness certification is required for certain UAS to operate safely in the NAS. This determination is based on the size, weight, speed and operational capabilities of the aircraft. After the Secretary makes this determination, a petition for exemption undergoes a safety evaluation by the FAA to determine what additional conditions and limitations are required for the proposed UAS operation.

In 2014, the Department of Transportation and FAA made progress in furthering integration of UAS under the authority of Section 333 of the FMRA. As of January 30, 2015, there have been 24 approvals for commercial UAS operations in the United States granted under Section 333 authority. These approvals cover a wide range of operations including motion picture, flare stack inspection, crop survey and construction use.

Certificates of Waiver or Authorization (COAs)

Since unmanned aircraft have no pilot on board, the ability to “see and avoid” other aircraft is accomplished by an “Alternate Means of Compliance (AMOC)” with the applicable Chapter of FAA Order 8900.1, Flight Standards Information Management System, Volume 16, Unmanned Aircraft Systems. The Certificate of Waiver or Authorization (COA) is the mechanism used to provide that alternate means. COAs are issued to agencies wishing to operate unmanned aircraft for purposes other than hobby or recreation. A COA is not required for operations in restricted areas, warning or prohibited areas. Public operators normally belong to government or state agencies and routinely conduct unmanned aircraft operations for strictly governmental purposes. These agencies include but are not limited to the Department of Defense, Department of Homeland Security, state and local law enforcement agencies, and public universities.

In the 2012 FMRA Section 333, Congress provided guidelines that allowed civil UAS to operate in the NAS for commercial purposes. In late 2014, the first COAs for commercial purposes were issued to applicants in the film and movie making industry. Since that time the FAA has issued more than sixty-three (63) COAs to various companies in a variety of industries to operate unmanned aircraft in the NAS. The COA provides specific operating areas and specific mitigations that help to ensure the safety of the NAS. The FAA predicts the number of COAs issued for commercial purposes will soon outpace the number of COAs approved for public operators.

UAS in the Arctic

The first commercial beyond line of sight operations in the United States were authorized in the Arctic in 2013. The FAA is continuing to work with industry partners to evolve the maturity of beyond line of sight operations in remote operating areas.

UAS Forecast

FAA uses the Teal Group's 2014 World Unmanned Aerial Vehicle Market Profile and Forecast as the basis for our forecast. Teal points out that the current market for unmanned aircraft outside the military is extremely small but will be one of the fastest growing segments in aviation over the next ten (10) years. There is the start of a non-military UAS market, but the size of the market will directly relate to regulations that are adopted. Once enabled, UAS weighing less than 55 pounds will become commercially viable.

The FAA is working to enable a new thriving industry to flourish while maintaining the safety of the NAS. Once small UAS are routinely authorized to operate in commercial markets, there will be a surge in the commercial applications of UAS. Potential markets will include aerial photography, precision agriculture and law enforcement.

UAS Small Commercial Forecast

Today, unmanned aircraft are flying in the NAS under very controlled conditions, and operations range from ground level to above 50,000 feet, depending on the specific type of aircraft. UAS are authorized to operate only on a case-by-case basis in Class B airspace, which exists over major urban areas and contains the highest density of manned aircraft in the National Airspace System.

Once the regulatory structure is developed and industry standards have been established, the FAA expects a commercial UAS market to mature rapidly. Relatively inexpensive UAS systems weighing less than 55 pounds are economically viable from a commercial standpoint, and the expectation is that market demand for UAS will occur within the constraints of the regulatory requirements. The number of small UAS forecasted is highly uncertain and is dependent on the regulatory structure finally adopted.

COMMERCIAL SPACE TRANSPORTATION

Since 1989, the Department of Transportation/Federal Aviation Administration has licensed over 230 U.S. commercial space launches. The FAA has also granted over 30 experimental permit launches since 2006. Activity in the U.S. commercial sector is expected to increase for both orbital and suborbital launches.

The FAA's Office of Commercial Space Transportation (AST) licenses and regulates U.S. commercial space launch activity including launch vehicles and non-federal launch sites authorized by Executive Order 12465 and Title 51 U.S. Code, Subtitle V, Chapter 509 (formerly the Commercial Space Launch Act). Title 51 and the Executive Order also direct the Department of Transportation to encourage, facilitate, and promote U.S. commercial launches. AST's mission is to license and regulate commercial launch and reentry operations and non-federal launch sites to protect public health and safety, the safety of property, and the national security and foreign policy interests of the United States.

Overview

The FAA licenses several expendable vehicles used for commercial orbital launches. The most frequently used orbital launch vehicles are:

- Falcon 9, an intermediate-class launch vehicle built, operated, and marketed by Space Exploration Technologies Corp. (SpaceX);
- Antares, Minotaur, and Pegasus vehicles built, operated, and marketed by Orbital Sciences Corporation (now Orbital ATK, Inc.);
- Zenit-3SL, a heavy-class vehicle built by the Ukrainian company KB Yuzhnoye for the Russian-owned Sea Launch venture, launched from a floating launch platform based at Long Beach, CA;
- Atlas V, a heavy-class vehicle built by United Launch Alliance (ULA), a joint venture between Boeing and Lockheed Martin, and marketed by Lockheed Martin Commercial Launch Services (LMCLS); and
- Delta IV, a heavy-class vehicle built and provided by ULA.

Companies such as Armadillo Aerospace have also carried out suborbital licensed launches. In addition to launch licenses, experimental permits were first granted by the FAA in 2006. Permits are used for suborbital reusable vehicle development and test flights. Companies that have been active in conducting permitted launches include Blue Origin, Scaled Composites, and SpaceX.

The FAA Office of Commercial Space Transportation does not license or grant permits for amateur-class rockets which are unmanned rockets that have less than 200,000 pound-seconds of total impulse and cannot reach an altitude greater than 150 kilometers above the Earth's surface.

The FAA licenses launches or reentries carried out by U.S. persons inside or outside the United States. The FAA does not license launches or reentries the U.S. Government carries out for the Government (such as those operated for and by NASA or the Department of Defense).

Nine commercial spaceports are currently licensed by the FAA. These are located in six states: Alaska (Kodiak Launch Complex), California (California Spaceport, part of Vandenberg Air Force Base, and Mojave Air and Space Port), Florida (Cape Canaveral Spaceport and Cecil Field Spaceport), New Mexico (Spaceport America), Oklahoma (Oklahoma Spaceport), Texas (Midland International Air and Space Port), and Virginia (Mid-Atlantic Regional Spaceport). Several other commercial spaceports around the United States have been proposed, including locations in Colorado, Georgia, and Hawaii.

Review of 2014

There were twelve orbital FAA-licensed launches in 2014, an increase from seven in 2013. SpaceX's Falcon 9 vehicle was used for six launches including two Dragon missions to the International Space Station (ISS), three missions to geosynchronous orbit, and one multiple satellite launch to low Earth orbit. There are nearly 50 future launches on the SpaceX manifest. Orbital Sciences conducted three launch attempts of the new Antares vehicle, two successful and one resulted in a launch failure. ULA performed two FAA-licensed launches, one by an Atlas V and the other by a Delta IV Heavy. Sea Launch (a multinational launch provider) conducted one launch of the Zenit 3SL launch vehicle. SpaceX carried out two licensed reentry missions when both Dragon capsules returned from orbit for an ocean landing after being berthed at the ISS for about two weeks following launch. The third licensed reentry was of the Orion space capsule, successfully concluding the NASA EFT 1 test mission.

In addition, there were seven suborbital flights during 2014 conducted under experimental permits. Five were carried out by SpaceX in Texas using its Falcon 9R Dev 1 test vehicle. Two permitted suborbital flights were performed by Scaled Composites with SpaceShipTwo; the second test flight resulted in a failure. Other companies are preparing experimental permit flights in 2015.

Launch providers such as SpaceX plan an increased number of licensed orbital launches in 2015. The increase in the number of permit flights and the commencement of licensed suborbital flights could take place in the years following 2015, depending on the results of the SpaceShipTwo launch failure investigation.

	2013	2014	2015 Forecast
Licensed Launches	7	12	16 - 18
Permitted Launches	7	7	7 - 10

FAA Licensed and Permitted Launches

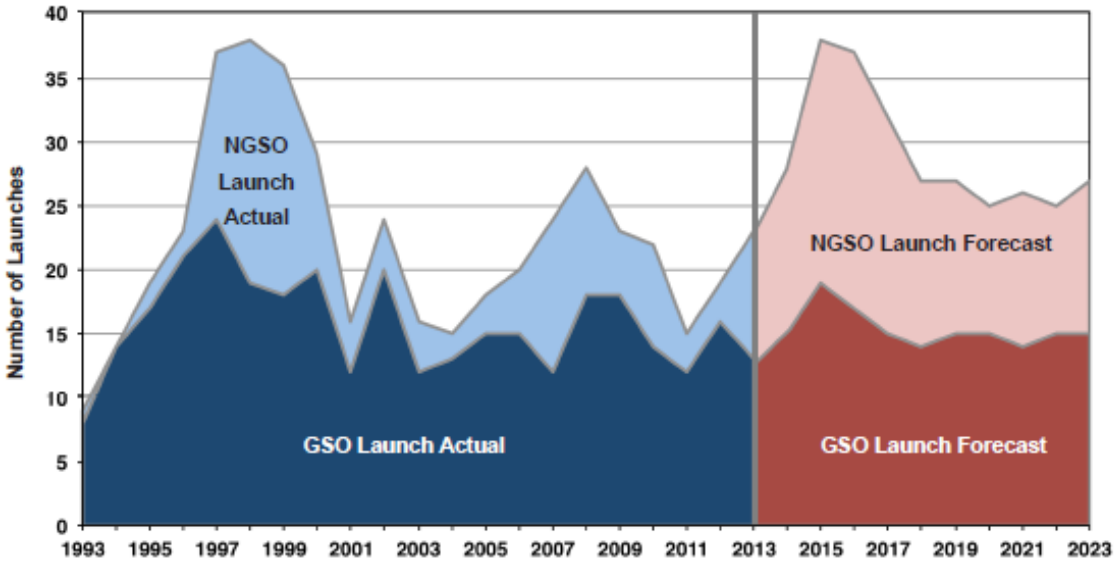
Overall there were 92 civil, commercial and military orbital launches worldwide in 2014, compared to 81 in 2013. Of these, 23 were commercial launches, the same number as in 2013.

Launch providers in the United States led with 11 orbital commercial launches of U.S.-manufactured vehicles in 2014, followed by six by Europe, four by Russia, one by India, and one by Sea Launch.

For more details, see the annual Compendium and *Year in Review* reports available online at: http://www.faa.gov/about/office_org/headquarters_offices/ast/reports_studies/#accst

Global Orbital Launch Forecast

In July 2014, the FAA and the Commercial Space Transportation Advisory Committee (COMSTAC) published their annual global forecast for commercial launch demand, the *2014 Commercial Space Transportation Forecasts*. The report calculates satellite demand and then applies models to estimate international commercial launch demand. Multiple satellites can fly on one launch vehicle. The 2014 forecast estimated an average global demand of about 16 commercial launches per year to geosynchronous orbit (GSO) and a global demand of about 14 launches per year to non-geosynchronous orbits (NGSO). The forecast covers the years 2014-2023. The 2014 forecast is up slightly down from the 2013 forecast for GSO and up for NGSO destinations.



Combined 2014 GSO and NGSO Historical Launches and Launch Forecasts

Commercial GSO launches are used for communications satellites with masses ranging from 2,500 to over 6,000 kilograms. Demand for commercial NGSO launches spans a number of markets and payload sizes, including resupply of the ISS, commercial remote sensing; science and technology demonstration; and replenishment and replacement of low Earth orbit communications satellite systems reaching the end of their lifespan. The forecast shows a continuing trend in demand for medium-to-heavy sized launch vehicles. Many small satellites, including a rapidly growing number of very small satellites known as CubeSats, find rides aboard medium-to-heavy lift launch vehicles as secondary payloads. The forecast demand for

small launch vehicles is an average of only one launch per year; however, it is up slightly from only 0.3 projected in the 2013 forecast.

The GSO and NGSO forecasts are not a prediction of what will actually be launched but instead represents the expected demand for launch services, based on a variety of inputs. The complete forecast report is available at:
http://www.faa.gov/about/office_org/headquarters_offices/ast/reports_studies/forecasts/

Suborbital Reusable Vehicle Forecast

The most recent global forecast for suborbital reusable vehicles (SRVs) was completed in July 2012. A report prepared by the Tauri Group for FAA AST and Space Florida covered a 10-year period that estimated demand once new suborbital vehicles begin flying. The goal of the study was to provide information for government and industry decision makers on the emerging SRV market by analyzing trends and areas of uncertainty in eight distinct markets SRVs could address. The eight markets include: Commercial Human Spaceflight, Basic and Applied Research, Aerospace Technology Test and Demonstration, Media and Public Relations, Education, Satellite Deployment, Remote Sensing, and Point-to-Point Transportation. The forecast includes three demand scenarios: baseline, growth, and constrained. Instead of flights, the forecast estimates seat demand. The demand is either for one seat for a single occupant or a cargo equivalent of 3.3 lockers (based on the size of mid-deck lockers used aboard the Space Shuttle).

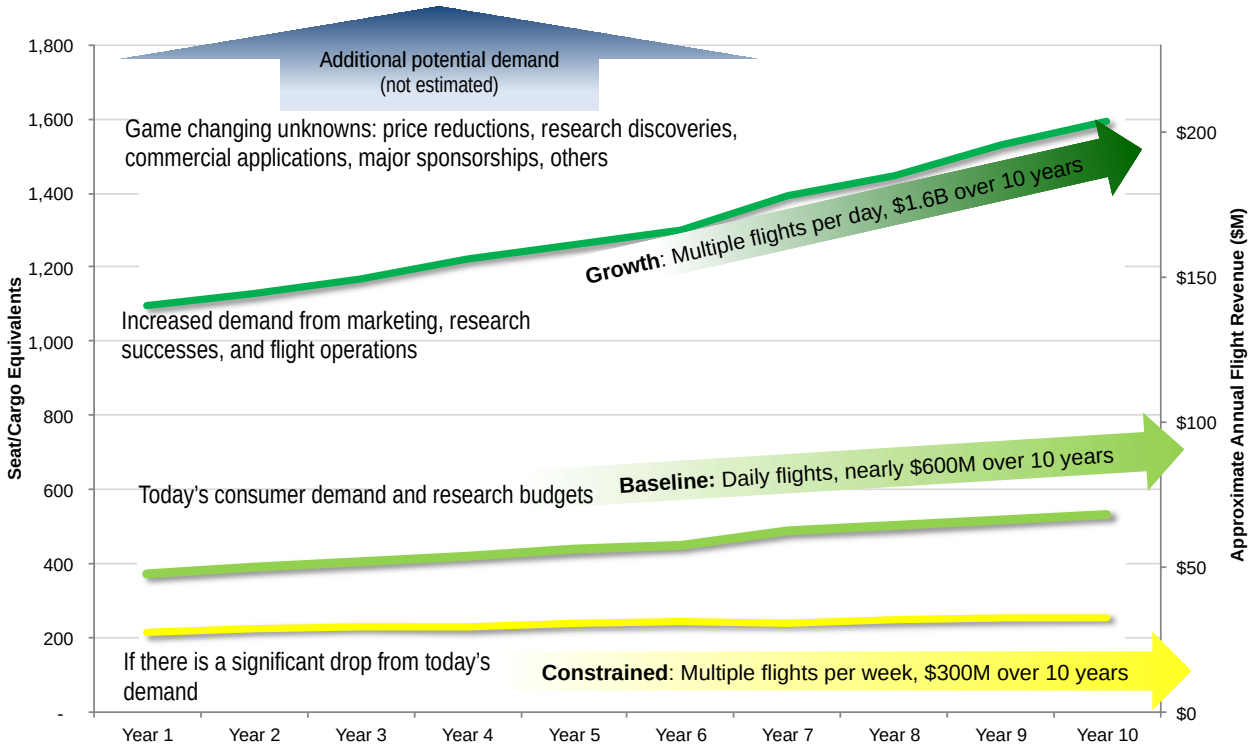
Total projected demand for SRVs, across all eight markets, is estimate to begin at around 373 seat/cargo equivalents in Year 1 and increasing to 533 seat/cargo equivalents in the tenth year of the baseline case. Year 1 represents the first year of regular SRV operations. Demand under the growth scenario, which reflects increases due to factors such as marketing, research successes, and flight operations, grows from about 1,100 to more than 1,500 seat/cargo equivalents over ten years. The constrained scenario, which reflects significantly reduced consumer spending and government budgets, shows demand from about 213 to 255 seat/cargo equivalents per year.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
Baseline Scenario	373	390	405	421	438	451	489	501	517	533	4,518
Growth Scenario	1,096	1,127	1,169	1,223	1,260	1,299	1,394	1,445	1,529	1,592	13,134
Constrained Scenario	213	226	232	229	239	243	241	247	252	255	2,378

Total projected demand for suborbital reusable vehicles by seat/cargo equivalents

Demand for SRVs is dominated by Commercial Human Spaceflight. The analysis indicates that about 8,000 high net worth individuals from across the globe are sufficiently interested and have spending patterns likely to result in the purchase of a suborbital flight. The second largest area of demand is Basic and Applied Research, funded primarily by government agencies, and also by research for not-for-profits, universities, and commercial firms. Aerospace Technology Test and Demonstration, Education, Satellite Deployment, and Media and PR generate the

remaining demand. The Remote Sensing and Point-to-Point Transportation markets are not forecasted to drive launches at this time.



10-year Suborbital Reusable Vehicle demand forecast

For more details, see the *Suborbital Reusable Vehicles: A 10-Year Forecast of Market Demand* report available online at:
http://www.faa.gov/about/office_org/headquarters_offices/ast/reports_studies/forecasts/

RISKS TO THE FORECASTS

The forecasts in this document are forecasts of aviation demand, driven by models built on forecasts of economic activity. There are many assumptions in both the economic forecasts and in the FAA models that could impact the degree to which these forecasts are realized. This year's forecast is driven, at least in the short-term, by a number of factors including the strength of the economic recovery and any impact resulting from the U.S. government fiscal situation. Also, as numerous incidents in the past few years (like the attempted bombing of a Northwest airliner on Christmas Day 2009, the discovery of multiple devices on cargo flights out of Europe in October 2010) remind us, terrorism remains among the greatest risks to aviation growth. Any terrorist incident aimed at aviation would have an immediate and significant impact on the demand for aviation services that would be greater than its impact on overall economic activity.

Although oil prices remained high for most of 2014, the recent volatility reminds us there is still considerable uncertainty as to the future direction of oil prices. The FAA's baseline forecast (derived from economic assumptions in IHS Global Insight's December 2014 U.S. macro forecast and 30-Year Focus released during the fourth quarter of 2014) calls for a sharp decrease in oil prices in 2015 to $60.50/bbl. Over the next six years (2015-21), the price of oil increases an average of 10.8% a year, to $112/barrel. After 2021, price increases moderate to average 2.7 percent a year for the remainder of the forecast period, reaching $162/barrel by the end of the forecast period in 2035. Some forecasters are calling for a more gradual rebound in the price of oil. In January 2015, the World Bank released its latest commodity price forecast. The forecast calls for oil prices to fall to $53/bbl in 2015, then rising to about $74 in 2020, and only exceeding $100/bbl in 2025. The International Monetary Fund (IMF) also sees oil price increasing at a more moderate rate than the FAA's base forecast, as its January 2015 forecast called for oil prices increasing from $51/bbl in 2015 to only $68.5/bbl by 2020. Over the long run, lower oil prices give consumers an impetus for additional spending, including air travel, and should enhance industry profitability. However lower oil prices could delay orders for new aircraft as carriers focus on maintaining and increasing cash balances and weigh the savings from new aircraft vs the costs of operating an older fleet.

The baseline forecast assumes that global economic growth will accelerate, over the next few years, but weakness in certain areas may threaten the strength and sustainability of the expansion. The baseline forecast assumes that growth in the emerging market economies will be significantly higher than in the other large economies, in particular the U.S., Japan and the European Union. While economic growth appears to be picking up in the U.S., there are concerns about the strength of demand in Japan and in the European Union as these areas continue to be constrained by structural economic problems and institutional constraints. In addition, many countries in the European Union are still grappling with the impacts of fiscal austerity policies, aimed at reducing government spending and debt, implemented during the past four years which have prolonged the regional downturn. Furthermore the steps that were taken to resuscitate the global economy may prove to be excessive, since the resulting surge in liquidity growth may cause asset bubbles and exacerbate existing global imbalances. The

current forecasts assume strong passenger growth for travel between the United States and other world regions. Any slowing of worldwide economic activity could seriously inhibit the growth in global passenger demand.

With the merger of American Airlines and US Airways completed, the outlook for further consolidation via mergers and acquisitions (M&A) appears to be rather limited. Based on FY 2014 data, the Big 3 (American, Delta, and United) plus Southwest accounted for almost 77% of the U.S. airline industry capacity and traffic. Of the network carriers, only Alaska remains independent, although it does have code share agreements with both American and Delta. In the low cost carrier sector, the merger between Southwest and AirTran achieved full integration of the fleet and a single ticketing system during 2014. Aside from Southwest and AirTran, there appears to be little scope for further consolidation as there are significant obstacles. In particular the financial situation of many low cost carriers limits the possibilities of additional merger activity. For many low cost carriers, the sheer size of merger transactions or the amount of financial risk associated with a merger makes further merger activity unlikely. However, U.S. airlines are continuing to explore other options including global alliances. Many of the major carriers in the U.S. are members of global alliances that operate with some measure of anti-trust immunity from the U.S. DOT. While anti-trust immunity may provide flexibility for airline operators across borders, it may create an anti-competitive environment in the marketplace. These market consolidating vehicles, particularly the anti-trust immunity provisions, may invite increased regulatory scrutiny. If such oversights are launched in the future, this will complicate the evolving structure of the airline industry and may impact demand via new regulations.

The forecast assumes the addition of sizable numbers of large regional jets (70 to 90 seats) into the fleet of regional carriers. However, the regional carriers' future is closely linked to those of the larger network carriers. As demand continues to slowly recover, financial pressures on regional operators have increased. Furthermore, as consolidation has occurred among the network carriers, many regional carriers have found themselves either saddled with excess capacity or lack of sufficient capacity, or lack of feed traffic. The network carriers continue to make adjustments to the size and breadth of their networks, without providing opportunities for regional carriers to backfill the loss of the mainline service. Delta is well along in its plans to reduce its small (read 50 seat) regional jet fleet and plans to retire another 50 to bring its total to just 125, down from almost 500 at the end of 2009. United is adding 85 Embraer 175's to its partners' regional fleet and reducing the number of small regional jets flown by its partners to 242 by the end of 2015 from an estimated 380 at the end of 2012. Meanwhile the new American Airways is planning to reduce its small regional jet fleet by 21 aircraft in 2015. While these actions may provide some opportunities for well positioned regional carriers, the overall impact of consolidation so far has been to reduce opportunities for regional flying substantially.

After suffering through a significant downturn in 2009-10, business and corporate aviation have seen a partial recovery during the past four years, with promising increases in aircraft deliveries in 2014. The pace of the recovery in business and corporate aviation is largely based upon the future prospects of economic growth and corporate profits. Future uncertainty in these leading indicators could pose a risk to the forecast, but the risk is not limited to these factors. Public perception of business and corporate aviation, potential environmental regulations and taxes, along with increased security measures placed on business jets, will

place downward pressure on the forecast. On the other hand, while corporate profits are currently high, perceived economic and political uncertainties are causing companies to postpone their purchase of new business aircraft. Translation of this pent-up demand into sales of business jets in the near future can create an upward impact on the forecast. The impact of fuel price decline on business aircraft demand is also uncertain. While a positive effect on corporate profits will increase the demand, revenue losses resulted from low fuel prices may move the demand in the other direction.

Other factors, such as new and more efficient product offerings and increased competition from new entrant manufacturers, serve to broaden the potential of the industry. Estimates show that a record number of new business jets are delivered overseas and, with the potential easing of regulations on the use of airspace in foreign countries, the scenario for business jet manufacturers looks all the more promising. Raising the level of security restrictions, and the subsequent travel hassles placed on airline passengers, could make corporate jet travel look increasingly appealing.

Not only is the volume of aircraft operating at most large hubs expected to increase over the next 20 years, but the mix of aircraft is changing for this same period. The expected increases in the numbers of regional jets and business jets will increase the impact on the national airspace system and make the FAA's job more challenging. This change in the mix of aircraft will impact workload strictly due to the increasing demand for aviation services projected over the forecast period.

Although overall activity at FAA and contract towers fell in 2014, activity at 10 of the Core 30 airports increased in 2014 and delays remained at historically high levels at many U.S. airports. As demand recovers and workload increases, congestion and delays could become a critical limit to growth over the forecast period. FAA's forecasts of both demand and operations are unconstrained in that they assume that there will be sufficient infrastructure to handle the projected levels of activity. Should the infrastructure be inadequate and result in even more congestion and delays, it is likely that the forecasts of both demand and operations would not be achieved.

There are concerns that aviation's impact on the environment could potentially restrict the ability of the aviation sector to grow to meet national economic and mobility needs. Airport expansion or new construction is often a contentious issue because of noise, air quality, and water quality concerns. There is also an ongoing effort to address the climate impacts of aviation. Aviation currently accounts for two to three percent of global carbon emissions, but this percentage is expected to increase with the growth in operations unless mitigated with new technologies and standards, renewable fuels, operational improvements and potentially as a gap filler, market based measures. While certain measures to address climate impacts can result in reduced costs, such as increased fuel efficiency, other measures, such as market instruments could pose additional constraints on growth. Energy concerns are also rising, driven by spikes in fuel prices, supply and security issues, and concerns about fossil fuel emissions contributing to global climate change. Lack of progress in improving the environmental and energy outlook for the future fleet may result in more access restrictions or operating limitations on the fleet in service which in turn may depress growth. By contrast, breakthroughs in quieter, cleaner aircraft technologies and renewable fuels could reduce environmental and energy constraints on the forecast, and enable sustainable growth.

APPENDIX A: ALTERNATIVE FORECAST SCENARIOS

Uncertainty exists in all industries, but especially in the commercial air travel industry. As volatility in the global environment has increased, the importance of scenarios for planning purposes has increased. In order to help stakeholders better prepare for the future, the FAA has begun to provide alternative scenarios to our baseline forecasts of airline traffic and capacity.

To create the baseline domestic forecast, economic assumptions for both U.S. and international regions from IHS Global Insight's 10-year and 30-year U.S. Macro Baseline (released in December 2014) were used to generate enplanements, mainline real yield and nominal yield. To develop the alternative scenarios, assumptions from IHS Global Insight's 10-year optimistic and pessimistic forecasts from their December 2014 Baseline U.S. Economic Outlook forecast were used. Inputs from these scenarios were substituted for the baseline scenario inputs to create a "high" and "low" traffic, capacity, and yield forecast.

International passengers and traffic are primarily determined by country specific Gross Domestic Product (GDP) forecasts provided by IHS Global Insight. Thus, the baseline forecast of GDP for both the U.S. and international regions is modified using the optimistic and pessimistic forecasts of GDP described above in order to create a high and low case. Since only the ten-year alternative GDP forecasts by Global Insight were available at the time of this analysis, the domestic and international alternative scenarios extend to 2024 only.

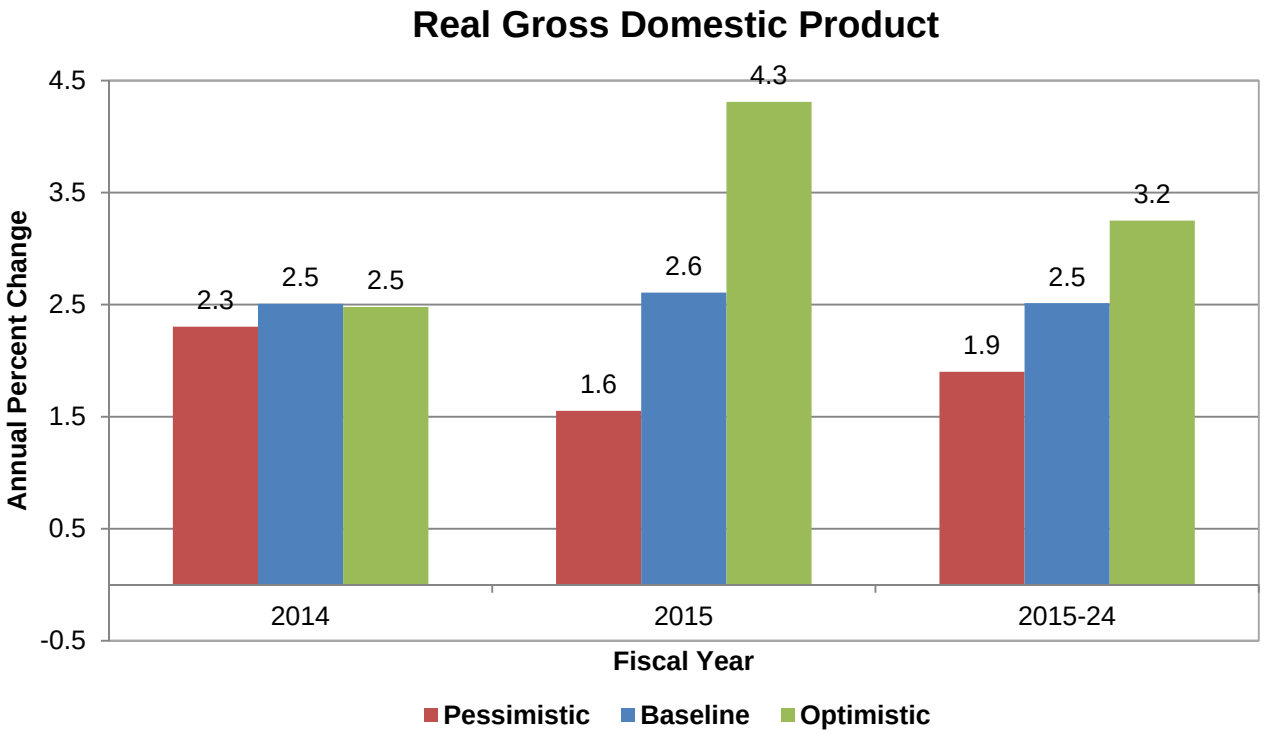
Scenario Assumptions

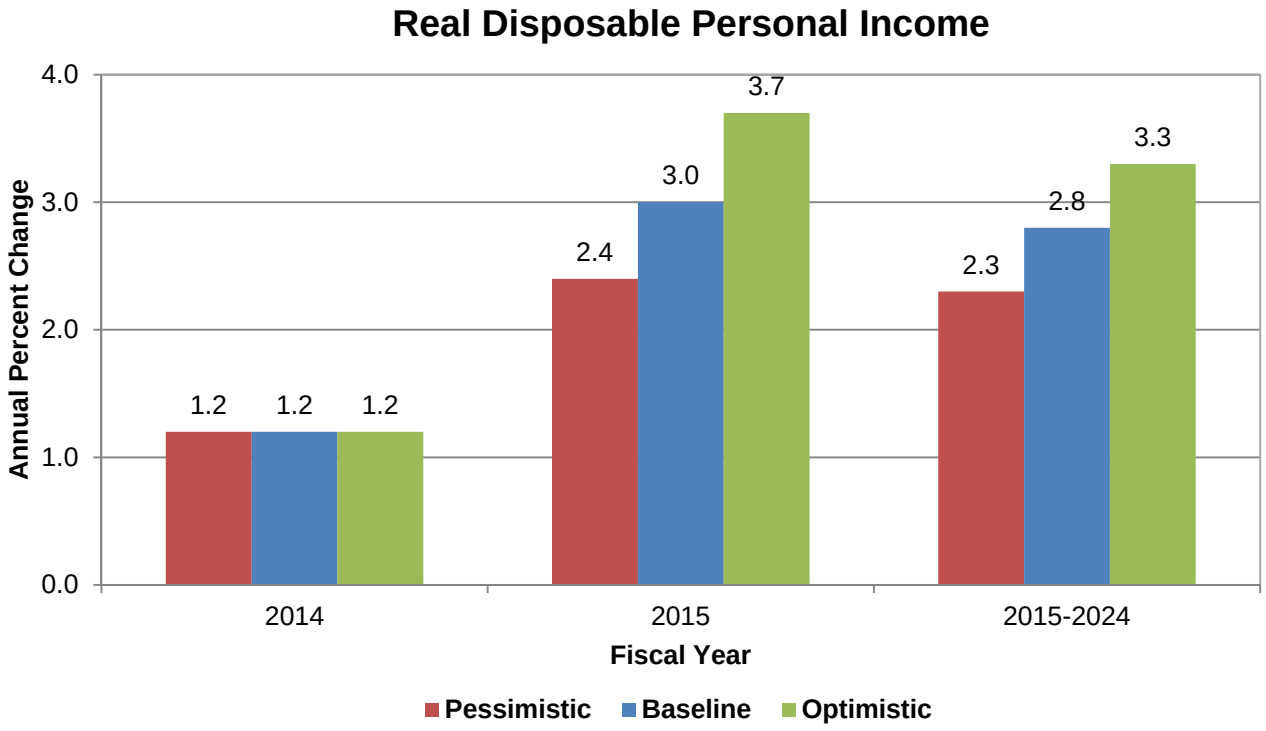
The FAA's baseline forecast assumes that the economy recovers from the current downturn and experiences very low oil prices in the short term, suffers no major swings in macro-economic policy, or financial sector collapses.

The FAA's high case forecast uses IHS Global Insight's optimistic forecast. The optimistic forecast sees improved business confidence leading to renewed vigor in the labor market, consumer spending, and sustained improvements in the housing sector as well as sustained low consumer prices, higher real disposable income, relatively low Brent crude prices, and a high GDP. Furthermore, in the optimistic case, it is assumed that fiscal deficits will diminish substantially in North America, Western Europe, and Japan. In this scenario GDP and real disposable income (DI) growth are about 0.67 and 0.87 percentage points, respectively, faster per year than the baseline forecast and unemployment averages 0.8 points lower on an annual basis than the baseline.[22]

Conversely, FAA's low case forecast uses IHS Global Insight's pessimistic scenario; in this forecast, the same assumptions apply as in the optimistic case, only the U.S. economy recovers at a much slower pace and the prices of Brent crude rise higher than in the base case. Moreover, the Eurozone's recovery will stall and growth in emerging markets will be less robust. Lastly, GDP and real DI grow 0.8 and 0.3 percentage points, respectively, slower per year than in the baseline; and unemployment, on average, is 1.5 points higher on an annual basis than in the baseline.

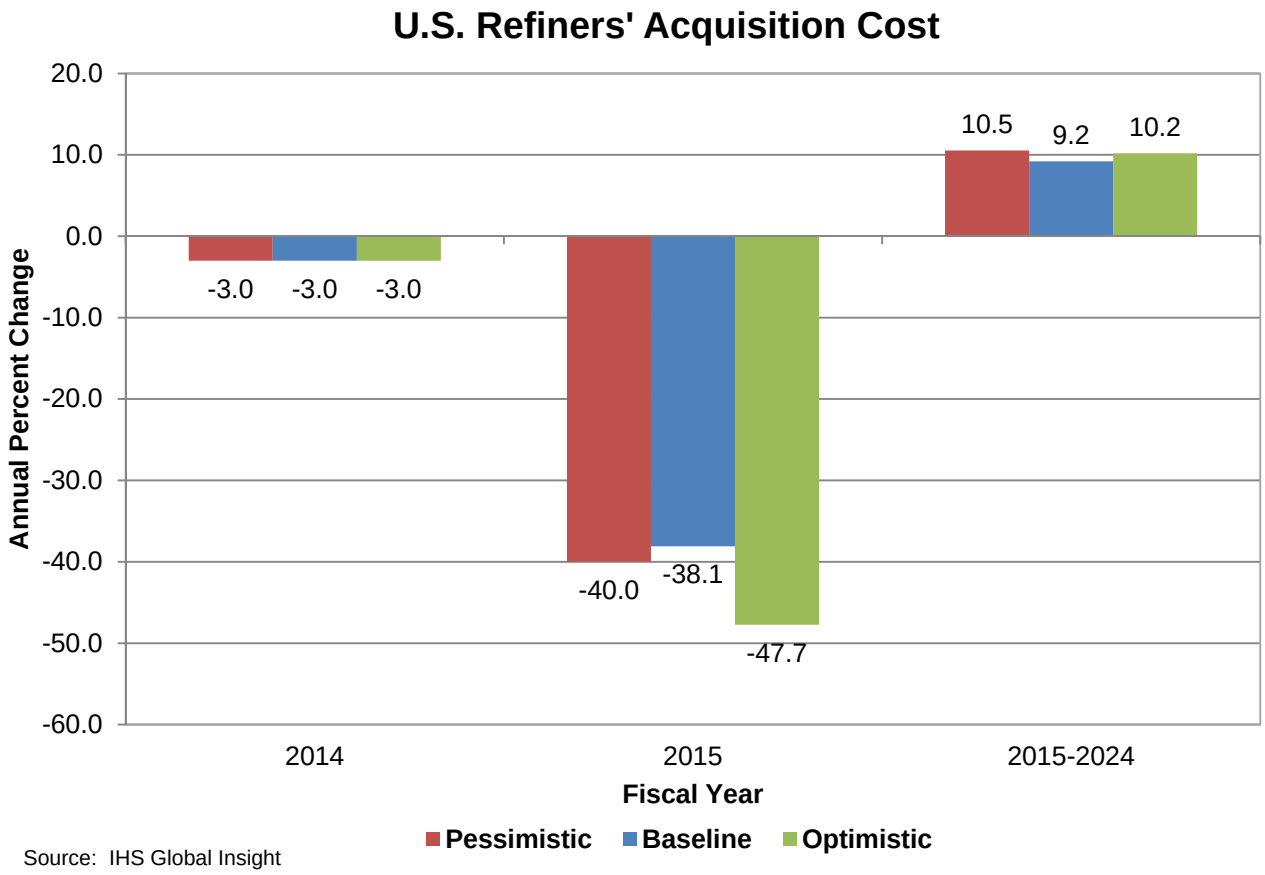
[22] Real disposable income and unemployment are used as an input variables to the FAA's base, high and low forecasts of enplanements.


Real Gross Domestic Product
4.5
3.5
2.5
1.5
0.5
-0.5
Annual Percent Change
2.3
2.5
2.5
1.6
2.6
4.3
1.9
2.5
3.2
2014
2015
2015-24
Fiscal Year
Pessimistic
Baseline
Optimistic

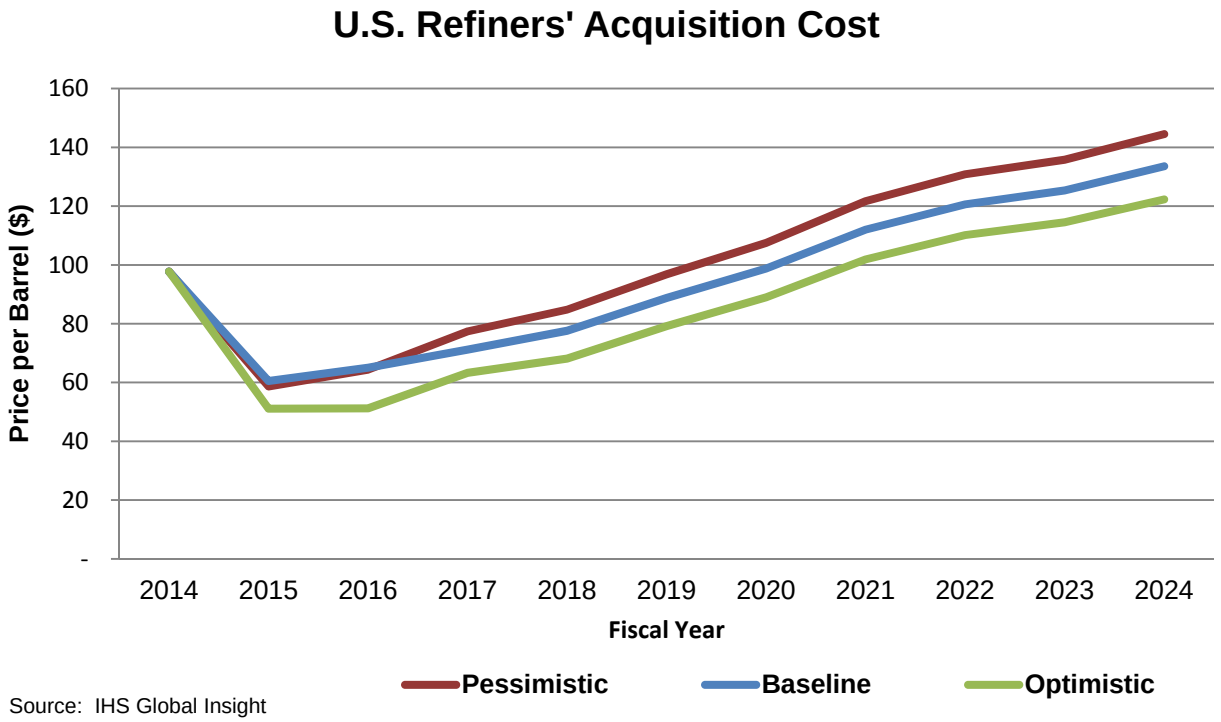

Real Disposable Personal Income
4.0
3.0
2.0
1.0
0.0
Annual Percent Change
1.2
1.2
1.2
2.4
3.0
3.7
2.3
2.8
3.3
2014
2015
2015-2024
Fiscal Year
Pessimistic
Baseline
Optimistic

Oil prices affect the supply of, and demand for, air travel and have a direct impact on the profitability of the industry. The pessimistic scenario does not feature a drop in the refiners acquisition cost (RAC) after 2014 due to a weaker dollar and lower productivity gains. The baseline features a large price drop in 2015 then an immediate rebound whereas the optimistic case shows a far more moderate drop in 2015 but continues dropping through 2017 before starting to climb again. The optimistic case is characterized by availability of energy, further gains in technology, and a stronger dollar; all of these factors help to temper prices compared to the baseline.

In the baseline forecast, technological improvements act as a counterbalance to partially offset rising prices.

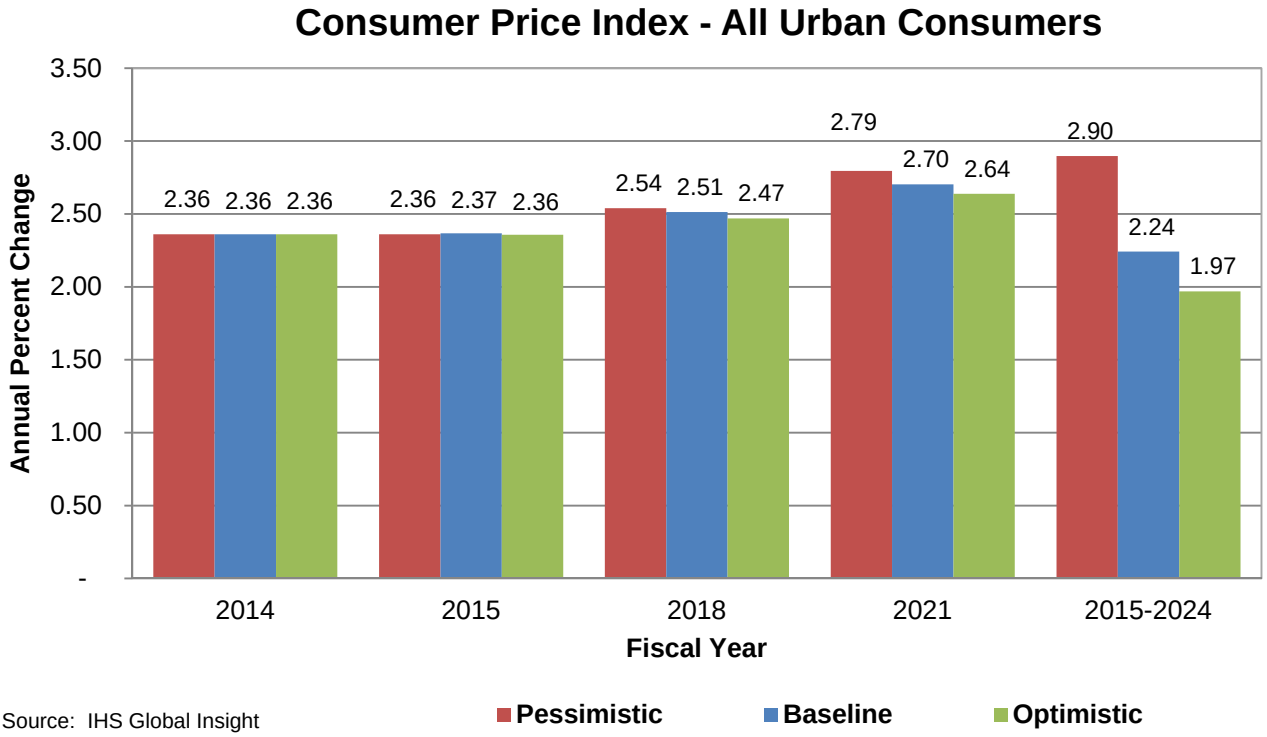


Source: IHS Global Insight



Source: IHS Global Insight

The price of energy is one of the critical drivers in the growth of consumer prices over the forecast period. In the optimistic case, energy prices, wages, and import prices grow more slowly than in the baseline. In the pessimistic case the opposite occurs with energy prices, wages and import prices rising more rapidly compared to the baseline. Please note that the annual rates amongst the alternatives do not begin to change significantly until fiscal year 2018.



Source: IHS Global Insight

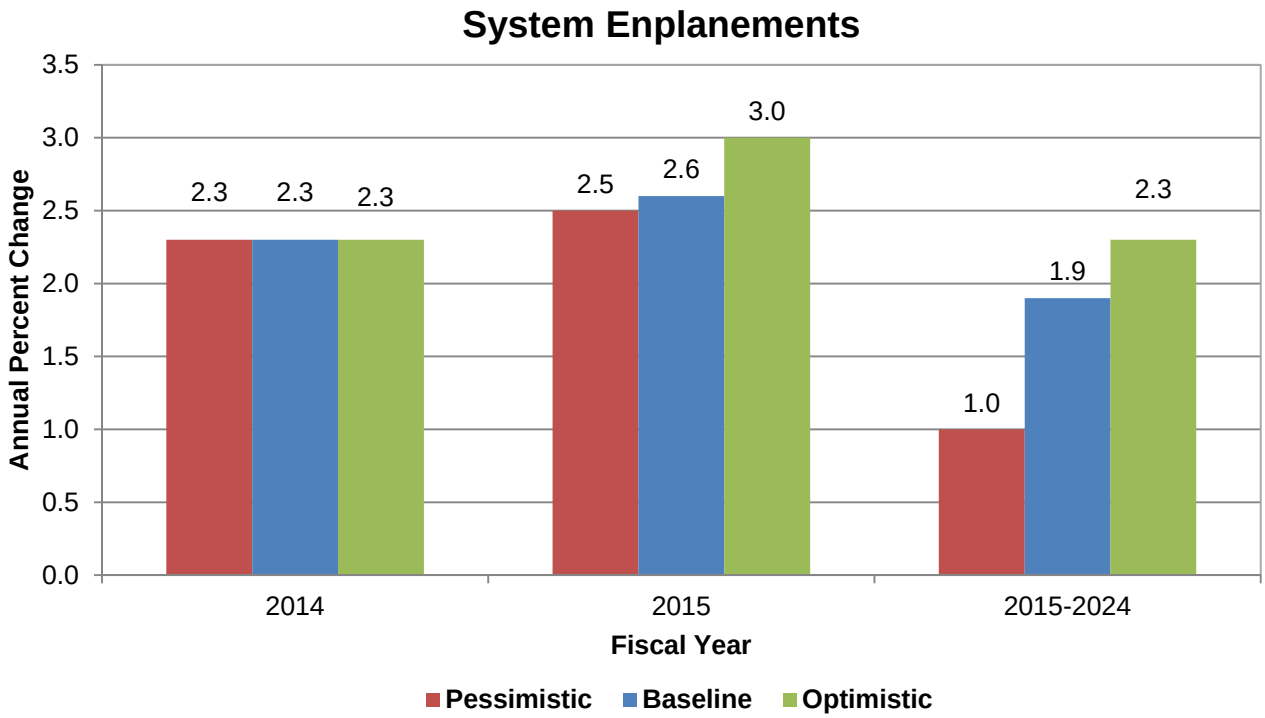
Alternative Forecasts

Passengers

In the baseline forecast, system passengers are forecast to grow at an average annual rate of 1.9 percent a year over the forecast horizon of 2014-2024 (with domestic and international passengers up 1.6 and 3.7 percent, respectively).

In the optimistic case, passengers grow at a quicker pace, averaging 2.3 percent per year (up 1.9 percent domestically and 4.8 percent internationally). This scenario is marked by a more favorable business environment, lower inflation, and lower fuel prices which make the price of flying more affordable to business and leisure travelers. By the end of the forecast period in 2024, system passengers in the optimistic case are 4.4 percent above the baseline, totaling 951 million, 40 million than in the baseline.

The pessimistic case is characterized by a period of weakened consumer confidence brought on by persistent unemployment, low consumer demand, and higher inflation. In this scenario passengers grow an average of 1.2 percent per year (domestic up 0.9 percent and international up 2.8 percent). In the pessimistic case, system passengers in 2024 are 6.6 percent below the baseline case, totaling 851 million, 61 million fewer than in the baseline.

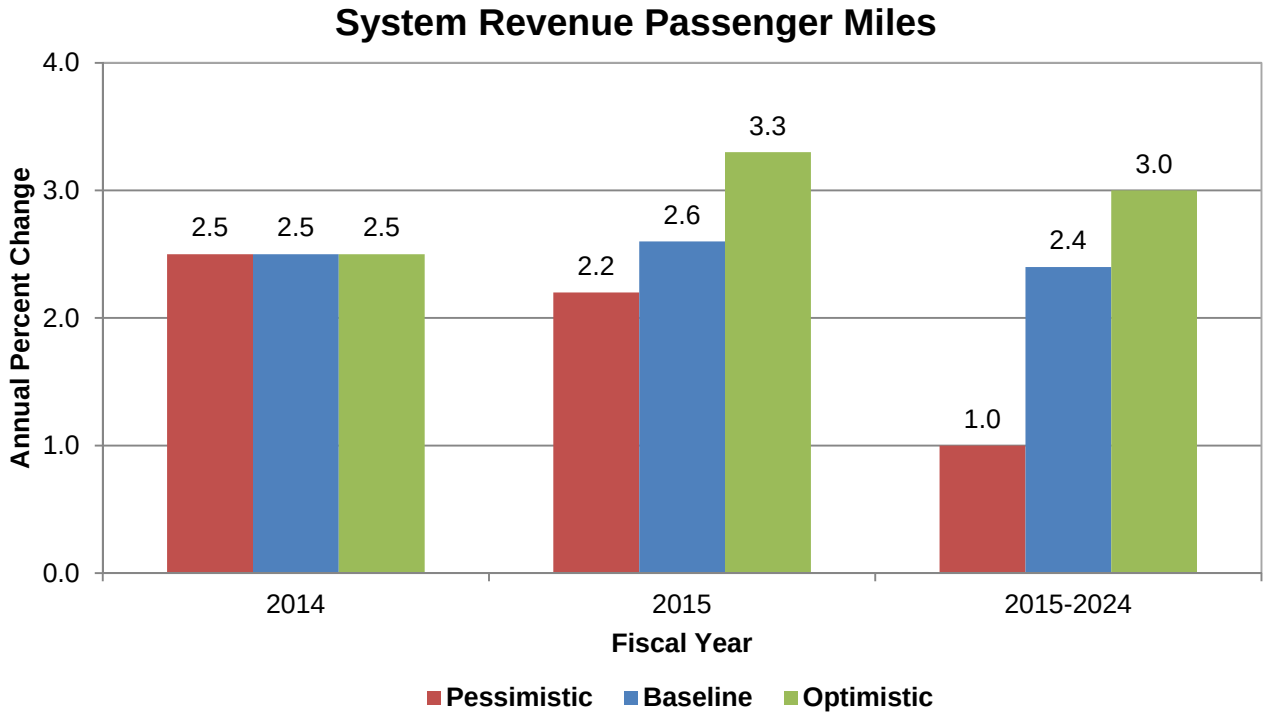


Revenue Passenger Miles

In the baseline forecast, system RPMs grow at an average annual rate of 2.5 percent a year over the forecast horizon (2014-2024), with domestic RPMs increasing 1.9 percent annually and international RPMs growing 3.8 percent annually.

In the optimistic case, the faster growing economy coupled with lower energy prices drives RPMs higher than the baseline, with growth averaging 3.0 percent per year (domestic and international RPMs up 2.1 and 4.9 percent, respectively).

In the pessimistic case, the combination of a slower growing economy and higher energy prices result in RPM growth averaging 1.8 percent annually with domestic markets growing 1.1 percent a year while international traffic grows 3.1percent annually.



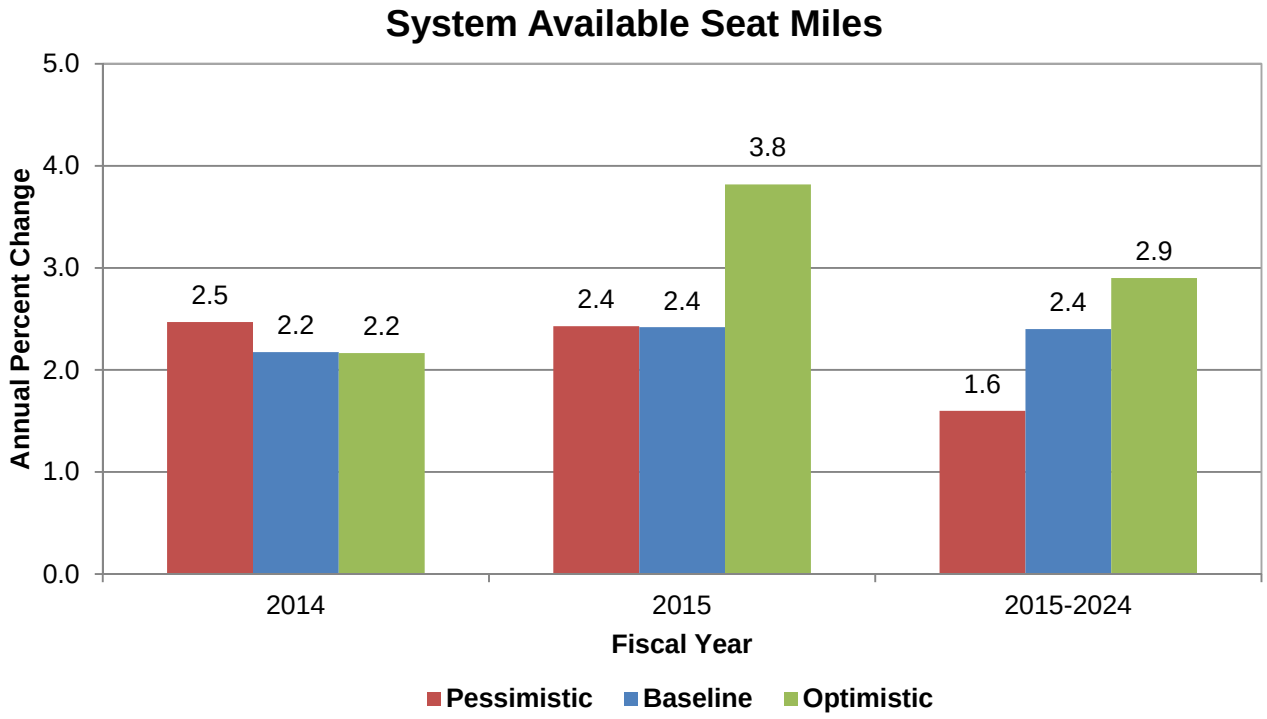
Available Seat Miles

In the base case, system capacity is forecast to increase an average of 2.4 percent annually over the forecast horizon with growth averaging 1.7 percent annually in domestic markets and 3.7 percent a year in international markets.

In the optimistic case, capacity grows at a faster clip than in the baseline forecast, averaging 3.0 percent annually (up 2.1 percent domestically and up 4.9 percent internationally). Carriers increase capacity compared to the baseline forecast to accommodate increased travel demand

brought about by a more favorable economic environment and by the end of the forecast horizon, system capacity in the optimistic case is 6.3 percent above the baseline case.

In the pessimistic case, demand for air travel is lower than in the baseline, thus system capacity grows at a slower pace of 1.7 percent annually (domestic growth of 1.0 percent annually and international up 3.1 percent annually). Total system capacity in the pessimistic case in 2024 is 5.9 percent below the baseline and 11.5 percent below the optimistic case.



Load Factor

System load factors over the 10-year forecast period are relatively similar for all three forecast scenarios. In the base case and in the optimistic scenario, system load factor rises from 83.4 percent in 2014 to 84.1percent and 83.5 in 2024, respectively.

In all three scenarios it is assumed that carriers will keep load factors on the high side by actively managing capacity (seats) to more precisely meet demand (passengers).

The domestic load factor increases over the forecast horizon from 84.4 percent to 85.3, 84.8, and 83.7 percent in the baseline, optimistic and pessimistic scenarios, respectively.

The international load factor forecast is slightly different in the three scenarios, reflecting in part the relative growth in demand and capacity in the three (Atlantic, Latin, and Pacific) international regions under each scenario.

In the base case, international load factor is relatively steady, going from 81.4 percent in 2014 to 81.9 percent in 2024.

In the optimistic scenario, international load factor is lower than in the other scenarios, falling to 81.2 percent by 2024, reflecting the faster growth in the relatively lower load factor Latin America market.

In the pessimistic scenario, the load factor remains at 81.3 for the forecast period.

Yield

In the baseline forecast, nominal system yield increases 2.2 percent annually, going from 14.79 cents in 2014 to 18.36 cents in 2024. In domestic markets, yield in the baseline forecast rises from 14.72 cents in 2014 to 19.02 cents in 2024, while international yield rises from 14.94 cents in 2014 to 17.10 cents in 2024.

System yield rises more slowly in the optimistic case, up 2.1 percent annually to be 18.25 cents at the end of the forecast period. Domestic yield increases to 18.89 cents while international yield increases to 17.12 cents. The slower growth in yield in the high case is due to advancements in technology, gains in productivity, more favorable fuel prices, and lower inflation. Increased competition is also assumed in this scenario. In the domestic market, fares are driven lower than baseline levels due to increased levels of competition between low cost and legacy carriers. In the international market, increased competition from growing liberalization puts downward pressure on fares.

In the pessimistic case, nominal yields rise more rapidly than in the baseline, growing an average of 2.7 percent annually, reaching 19.21 cents by 2024 (20.35 cents domestically and 17.05 cents internationally). This scenario reflects higher general inflation and higher energy prices than in the baseline, forcing carriers to increase fares in order to cover the higher costs of fuel, labor, and capital.

TABLE A-1

FAA FORECAST ECONOMIC ASSUMPTIONS

FISCAL YEARS 2014-2024

Variable	Scenario	Historical	FORECAST				PERCENT AVERAGE ANNUAL GROWTH			
		2014E	2015	2016	2020	2024	2014-15	2015-16	2015-20	2015-24
Economic Assumptions										
Real Disposable Income	Pessimistic	11,848	12,134	12,246	13,483	14,849	2.4%	0.9%	2.1%	2.3%
(BIL 10$)	Baseline	11,848	12,206	12,538	14,179	15,613	3.0%	2.7%	3.0%	2.8%
	Optimistic	11,848	12,281	12,900	14,917	16,476	3.7%	5.0%	4.0%	3.3%
Refiners Acquisition Cost -	Pessimistic	97.8	58.7	64.4	107.5	144.5	-40.0%	9.7%	12.9%	10.5%
Average - $ Per Barrel	Baseline	97.8	60.5	65.1	98.8	133.6	-38.1%	7.5%	10.3%	9.2%
	Optimistic	97.8	51.1	51.2	89.0	122.3	-47.7%	0.2%	11.7%	10.2%
Consumer Price Index	Pessimistic	2.36	2.36	2.40	2.71	3.05	0.0%	1.7%	2.8%	2.9%
All Urban, 1982-84 = 1.0	Baseline	2.36	2.37	2.41	2.64	2.89	0.3%	1.7%	2.2%	2.2%
	Optimistic	2.36	2.36	2.38	2.58	2.81	-0.1%	1.1%	1.8%	2.0%
Civilian Unemployment Rate	Pessimistic	6.5	5.9	6.4	7.1	7.1	-0.1	0.1	0.0	0.0
(%)	Baseline	6.5	5.6	5.4	5.2	5.0	-0.1	0.0	0.0	0.0
	Optimistic	6.5	5.7	5.1	4.2	4.5	-0.1	-0.1	-0.1	0.0

Sources: Baseline - IHS Global Insight, 30-Year Focus, December 8, 2014; Optimistic and Pessimistic - IHS Global Insight, 10 Year Optimistic Outlook, December 5, 2014

TABLE A-2

FAA FORECAST OF AVIATION ACTIVITY*

FISCAL YEARS 2014-2024

Variable	Scenario	Historical	FORECAST				PERCENT AVERAGE ANNUAL GROWTH			
		2014E	2015	2016	2020	2024	2014-15	2015-16	2015-20	2015-24
System										
Aviation Activity										
Available Seat Miles	Pessimistic	1,027.8	1,052.7	1,055.9	1,122.0	1,219.1	2.4%	0.3%	1.3%	1.6%
(BIL)	Baseline	1,024.8	1,049.6	1,070.3	1,180.1	1,295.8	2.4%	2.0%	2.4%	2.4%
	Optimistic	1,024.7	1,063.8	1,110.0	1,251.0	1,377.7	3.8%	4.3%	3.3%	2.9%
Revenue Passenger Miles	Pessimistic	857.2	876.1	879.7	937.8	1,020.6	2.2%	0.4%	1.4%	1.7%
(BIL)	Baseline	855.1	877.7	896.2	991.4	1,090.1	2.6%	2.1%	2.5%	2.4%
	Optimistic	855.1	883.3	922.9	1,043.4	1,150.3	3.3%	4.5%	3.4%	3.0%
Enplanements	Pessimistic	756.2	775.1	770.9	798.7	850.6	2.5%	-0.5%	0.6%	1.0%
(MIL)	Baseline	756.3	775.8	789.5	851.1	911.1	2.6%	1.8%	1.9%	1.8%
	Optimistic	756.4	778.8	811.8	891.3	951.0	3.0%	4.2%	2.7%	2.2%
Psgr Carrier Miles Flown	Pessimistic	7,070.3	7,247.0	7,215.8	7,512.3	8,038.7	2.5%	-0.4%	0.7%	1.2%
(MIL)	Baseline	7,058.9	7,198.5	7,287.0	7,790.0	8,346.0	2.0%	1.2%	1.6%	1.7%
	Optimistic	7,061.4	7,334.4	7,628.5	8,425.3	9,086.1	3.9%	4.0%	2.8%	2.4%
Psgr Carrier Departures	Pessimistic	9,030.4	9,162.6	9,082.2	9,327.2	9,818.9	1.5%	-0.9%	0.4%	0.8%
(000s)	Baseline	9,030.9	9,155.4	9,229.8	9,609.1	10,018.6	1.4%	0.8%	1.0%	1.0%
	Optimistic	9,032.5	9,247.2	9,600.4	10,462.0	11,009.2	2.4%	3.8%	2.5%	2.0%
Nominal Passenger Yield	Pessimistic	14.80	15.16	15.49	17.42	19.21	2.4%	2.2%	2.8%	2.7%
(cents)	Baseline	14.79	15.09	15.39	16.94	18.36	2.0%	2.0%	2.3%	2.2%
	Optimistic	14.81	15.13	15.27	16.88	18.25	2.2%	0.9%	2.2%	2.1%

* Includes domestic and international activity.

TABLE A-3

FAA FORECAST OF DOMESTIC AVIATION ACTIVITY

FISCAL YEARS 2014-2024

Variable	Scenario	Historical	FORECAST				PERCENT AVERAGE ANNUAL GROWTH			
		2014E	2015	2016	2020	2024	2014-15	2015-16	2015-20	2015-24
International										
Aviation Activity										
Available Seat Miles	Pessimistic	709.4	727.0	718.2	738.4	786.3	2.5%	-1.2%	0.3%	0.9%
(BIL)	Baseline	709.4	729.1	739.1	790.6	842.7	2.8%	1.4%	1.6%	1.6%
	Optimistic	709.4	729.1	757.6	822.7	869.3	2.8%	3.9%	2.4%	2.0%
Revenue Passenger Miles	Pessimistic	598.5	611.5	605.3	626.0	668.9	2.2%	-1.0%	0.5%	1.0%
(BIL)	Baseline	598.5	615.1	624.9	672.5	719.2	2.8%	1.6%	1.8%	1.8%
	Optimistic	598.5	611.5	636.8	695.6	737.5	2.2%	4.1%	2.6%	2.1%
Enplanements	Pessimistic	668.4	685.6	678.5	694.9	734.5	2.6%	-1.0%	0.3%	0.8%
(MIL)	Baseline	668.4	685.6	696.2	742.0	784.9	2.6%	1.5%	1.6%	1.5%
	Optimistic	668.4	685.6	713.7	772.1	809.7	2.6%	4.1%	2.4%	1.9%
Psgr Carrier Miles Flown	Pessimistic	5,590.6	5,737.7	5,656.3	5,762.8	6,086.7	2.6%	-1.4%	0.1%	0.7%
(MIL)	Baseline	5,590.6	5,705.7	5,746.8	5,996.5	6,278.4	2.1%	0.7%	1.0%	1.1%
	Optimistic	5,590.6	5,773.1	5,988.2	6,445.1	6,755.0	3.3%	3.7%	2.2%	1.8%
Psgr Carrier Departures	Pessimistic	8,396.3	8,517.9	8,421.2	8,603.4	9,026.3	1.4%	-1.1%	0.2%	0.6%
(000s)	Baseline	8,396.3	8,509.9	8,564.7	8,849.0	9,157.1	1.4%	0.6%	0.8%	0.8%
	Optimistic	8,396.3	8,571.9	8,893.1	9,620.5	10,033.2	2.1%	3.7%	2.3%	1.8%
Nominal Passenger Yield	Pessimistic	14.78	15.22	15.62	18.11	20.35	3.0%	2.6%	3.5%	3.3%
(cents)	Baseline	14.72	15.16	15.53	17.34	19.02	3.0%	2.5%	2.7%	2.5%
	Optimistic	14.78	15.22	15.36	17.27	18.89	3.0%	0.9%	2.6%	2.4%

*Includes mainline and regional carriers.

TABLE A-4

FAA FORECAST OF INTERNATIONAL AVIATION ACTIVITY*

FISCAL YEARS 2014-2024

Variable	Scenario	Historical	FORECAST				PERCENT AVERAGE ANNUAL GROWTH			
		2014E	2015	2016	2020	2024	2014-15	2015-16	2015-20	2015-24
International										
Aviation Activity										
Available Seat Miles	Pessimistic	318.4	325.7	337.7	383.7	432.7	2.3%	3.7%	3.3%	3.2%
(BIL)	Baseline	315.4	320.5	331.2	389.4	453.2	1.6%	3.4%	4.0%	3.9%
	Optimistic	315.3	334.8	352.3	428.3	508.4	6.2%	5.2%	5.1%	4.8%
Revenue Passenger Miles	Pessimistic	258.7	264.6	274.4	311.8	351.7	2.3%	3.7%	3.3%	3.2%
(BIL)	Baseline	256.7	262.5	271.3	318.9	371.0	2.3%	3.4%	4.0%	3.9%
	Optimistic	256.6	271.9	286.1	347.8	412.8	5.9%	5.2%	5.1%	4.7%
Enplanements	Pessimistic	87.9	89.4	92.4	103.8	116.1	1.8%	3.4%	3.0%	2.9%
(MIL)	Baseline	88.0	90.2	93.4	109.1	126.2	2.5%	3.5%	3.9%	3.8%
	Optimistic	88.0	93.2	98.0	119.2	141.2	5.9%	5.2%	5.0%	4.7%
Psgr Carrier Miles Flown	Pessimistic	1,479.7	1,509.2	1,559.5	1,749.5	1,952.0	2.0%	3.3%	3.0%	2.9%
(MIL)	Baseline	1,468.3	1,492.9	1,540.1	1,793.5	2,067.6	1.7%	3.2%	3.7%	3.7%
	Optimistic	1,470.8	1,561.3	1,640.3	1,980.2	2,331.2	6.1%	5.1%	4.9%	4.6%
Psgr Carrier Departures	Pessimistic	634.1	644.6	661.0	723.8	792.6	1.7%	2.5%	2.3%	2.3%
(000s)	Baseline	634.6	645.5	665.0	760.1	861.5	1.7%	3.0%	3.3%	3.3%
	Optimistic	636.2	675.3	707.3	841.6	976.0	6.2%	4.7%	4.5%	4.2%
Nominal Passenger Yield	Pessimistic	14.87	15.03	15.19	16.03	17.05	1.1%	1.0%	1.3%	1.4%
(cents)	Baseline	14.94	14.92	15.08	16.07	17.10	-0.2%	1.1%	1.5%	1.5%
	Optimistic	14.88	14.93	15.08	16.09	17.12	0.3%	1.0%	1.5%	1.5%

*Includes mainline and regional carriers.

APPENDIX B: FAA FORECAST ACCURACY

Forecasts, by their nature, have a degree of uncertainty incorporated in them. They involve not only statistical analyses and various scientific methods, but also judgment and reliance on industry knowledge and the forecaster's experience to incorporate industry trends not yet reflected in recent results. The FAA's annual Aerospace Forecast is no exception. Given the volatile nature of the U.S. airline industry, it is not surprising that each year's forecast would contain a certain degree of forecast variance. Therefore, FAA forecasters have tried to build forecast models that give a consistent and predictable pattern of results. Analysts relying on the forecasts produced by the models would then be able to adjust for the predictable variance from actual results.

The table below presents an analysis of the variance from historical results for a primary forecast assumption along with five key forecast metrics during the FY 2005-2014 forecast period. Although this period has experienced industry upheaval, the FAA's forecast methodology remained consistent during this time. For this reason, inclusion of prior periods in an analysis of forecast variance might lead to inconclusive or inaccurate implications about the accuracy of FAA's current forecast methodology.

The table below contains the mean absolute percent errors for the projected values versus the actual results for U.S. carriers' domestic operations along with the projected values versus actual results for U.S. GDP. Each metric has five values showing the relative forecast variance by the number of years in advance the preparation of the forecast took place. For example, the "3 Years" column for ASMs shows that the mean absolute percent error was 8.2 percent for ASM forecasts prepared 3 years in advance. For the period under examination, preparation of the forecasts for FY 2005 through FY 2014 occurred in FY 2004, FY 2005, FY 2006, FY 2007, FY 2008, FY 2009, FY 2010, FY 2011, FY 2012, and FY 2013 respectively.[23]

[23] It should be noted that the first forecasted year for each respective fiscal year is that very same year. Therefore, FY 2003's first forecasted year is FY 2003, and the third forecasted year is FY 2005.

U.S. AIR CARRIERS
DOMESTIC SCHEDULED PASSENGER ACTIVITY
FORECAST EVALUATION

Forecast Variable	Mean Absolute Percent Error (Combined FY 2005 - FY 2014) (Forecast Variance from Actual) Forecast Performed Years Prior to Actual				
	1 Year	2 Years	3 Years	4 Years	5 Years
U.S. Real GDP	2.1%	3.7%	5.6%	7.2%	8.5%
ASMs	0.8%	4.1%	7.5%	11.3%	16.3%
RPMs	1.1%	3.2%	6.0%	8.7%	11.8%
Passenger Enplanements	1.0%	2.8%	5.9%	8.4%	11.9%
Mainline Domestic Yield	3.1%	5.0%	7.0%	8.8%	10.9%
IFR Aircraft Handled*	2.4%	5.8%	9.1%	12.1%	16.6%

Total - scheduled and nonscheduled commercial plus noncommercial

Presenting forecast variances from actual data in such a manner simplifies a review of longer-term trends. Typically, one would expect the variances to decrease as the forecast year is closer to the year the forecast is prepared. Presenting forecast variances in this way allows an examination of changes in the relative variances by time horizon, signaling when dramatic shifts in accuracy occur.

Examination of the forecast variances reveals several items. First, the forecast variances for GDP, a key exogenous variable, are similar to the variances of the key traffic measures, Passenger Enplanements and RPMs. This suggests that a substantial amount of the forecast variance for the traffic variables may be attributed to the forecast error in the exogenous variables. Second, all the metrics examined show increasing variances as the forecast time horizon lengthens. Third, the ASM forecast variance being larger than the RPM forecast variance indicates a consistent underestimation of load factors which is an important factor in translating passenger demand into aviation activity. All other things being equal, large variances in forecasts of load factor can lead to large variances in the forecasts of ASMs which in turn will typically result in variances of aviation activity, as can been seen in the variances of the IFR aircraft handled forecasts.

Furthermore, ASMs and aircraft handled are difficult to forecast beyond a relatively short time horizon, as carriers often react to changing market conditions not always tied to the general economic trends that have long term impacts. The relatively large variances in these forecasts beyond two years suggest that carriers have been permanently removing capacity by reducing flights and by changing the mix of aircraft to satisfy demand. In the short term, such capacity reductions can be identified by using advance schedule information. However, the FAA's longer-term forecasts rely on anticipated aircraft deliveries and retirements as well as historic relationships between economic activity and capacity deployed. Given the volatile nature of

many of the factors that may influence longer term ASM and aircraft handled forecasts, a simpler approach to projecting ASMs, such as RPMs divided by load factors, may improve the long run accuracy of the ASM and aircraft handled forecasts.

APPENDIX C: ACKNOWLEDGEMENTS

This document was prepared by the Forecasts and Performance Analysis Division (APO-100), Office of Aviation Policy and Plans, under the direction of Mr. Roger D. Schaufele, Jr. The following individuals were responsible for individual subject areas:

Economic Environment	Roger Schaufele	(202) 267-3306
Commercial Air Carriers		
Passengers	Roger Schaufele	(202) 267-3306
	Katherine Lizotte	(202) 267-3302
Cargo	Nick Miller	(202) 267-3309
General Aviation		
Forecasts	H. Anna Barlett	(202) 267-4070
Survey Data	H. Anna Barlett	(202) 267-4070
FAA Workload Measures		
Forecasts	Roger Schaufele	(202) 267-3306
Data	Forecasts and Performance Analysis Division, APO-100	
Unmanned Aircraft Systems	Michael Lukacs	(202) 267-9641
	Merideth Tracey	(202) 385-4600
Commercial Space	Mary Carolyn Thies Becker	(202) 267-8863
	Commercial Space Transportation, AST-100	
Text and Table Preparation	Forecasts and Performance Analysis Division Staff	

APO Websites

Forecasts/Statistical Publications	http://www.faa.gov/data_statistics
APO Data System	http://aspm.faa.gov

Email

APO staff	first name.last name@faa.gov

This page has been intentionally left blank.

APPENDIX D: FORECAST TABLES

TABLE 1

U.S. SHORT-TERM ECONOMIC FORECASTS

ECONOMIC VARIABLE	FISCAL YEAR 2014				FISCAL YEAR 2015				FISCAL YEAR 2016			
	1ST. QTR.	2ND. QTR.	3RD QTR.	4TH. QTR.	1ST. QTR.	2ND. QTR.	3RD QTR.	4TH. QTR.	1ST. QTR.	2ND. QTR.	3RD QTR.	4TH. QTR.
Real Disposable Income												
(Billions of chained 2010 $)	11,810.1	11,900.4	11,969.5	12,051.1	12,192.4	12,262.9	12,316.8	12,401.9	12,487.7	12,578.7	12,685.7	12,789.6
Seasonally Adjusted Annual Rate		3.1%	2.3%	2.8%	4.8%	2.3%	1.8%	2.8%	2.8%	2.9%	3.4%	3.3%
Refiners' Acquisition Cost - Average												
(Dollars per barrel)	97.63	101.03	96.35	71.32	58.39	53.58	58.79	59.99	64.03	67.54	68.68	72.02
Annual rate - not seasonally adjusted		14.7%	-17.3%	-70.0%	-55.1%	-29.1%	45.0%	8.4%	29.8%	23.8%	6.9%	21.0%
Consumer Price Index												
(1982-84 equals 100)	235.2	237.0	237.7	237.0	235.8	236.3	237.8	238.8	240.3	241.5	242.7	244.2
Seasonally Adjusted Annual Rate		3.0%	1.1%	-1.1%	-2.0%	0.8%	2.6%	1.7%	2.5%	2.1%	2.0%	2.5%

Source: Global Insight Dec 2014 Baseline U.S. Economic Outlook

TABLE 2

U.S. LONG-TERM ECONOMIC FORECASTS

FISCAL YEAR	REAL GROSS DOMESTIC PRODUCT (Billions 2010 $)	REAL DISPOSABLE PERSONAL INCOME (Billions 2010 $)	CONSUMER PRICE INDEX (1982-84=1.00)	REFINERS' ACQUISITION COST AVERAGE (Dollars per barrel)
Historical				
2001	12,675.8	9,106.6	1.76	25.80
2007	14,805.0	10,788.6	2.05	60.62
2008	14,934.1	10,956.8	2.14	101.52
2009	14,427.5	10,962.4	2.14	54.68
2010	14,684.5	10,983.9	2.17	74.61
2011	14,957.8	11,284.9	2.23	96.00
2012	15,308.3	11,533.0	2.29	102.81
2013	15,589.7	11,706.2	2.32	100.78
2014E	15,980.6	11,847.9	2.36	97.76
Forecast				
2015	16,397.3	12,205.8	2.37	60.52
2016	16,798.3	12,538.5	2.41	65.06
2017	17,257.2	12,978.0	2.46	71.17
2018	17,673.6	13,396.7	2.51	77.59
2019	18,132.1	13,782.0	2.57	88.79
2020	18,638.0	14,178.8	2.64	98.76
2021	19,124.8	14,532.6	2.70	112.00
2022	19,579.5	14,886.3	2.76	120.60
2023	20,041.3	15,248.8	2.83	125.36
2024	20,500.8	15,613.0	2.89	133.56
2025	20,974.2	15,992.0	2.96	141.17
2026	21,464.3	16,399.0	3.02	145.79
2027	21,960.2	16,834.0	3.09	148.80
2028	22,473.3	17,276.8	3.15	150.87
2029	22,991.5	17,713.8	3.21	151.80
2030	23,523.3	18,149.9	3.28	152.47
2031	24,058.6	18,580.5	3.34	153.21
2032	24,606.6	19,025.6	3.41	153.84
2033	25,174.8	19,488.1	3.48	156.13
2034	25,754.7	19,953.2	3.56	158.88
2035	26,345.0	20,419.8	3.63	162.37
Avg Annual Growth				
2001-14	1.8%	2.0%	2.3%	10.8%
2014-15	2.6%	3.0%	0.3%	-38.1%
2014-24	2.5%	2.8%	2.0%	3.2%
2014-35	2.4%	2.6%	2.1%	2.4%

Source: Global Insight Baseline U.S. Economic Outlook and U.S. Macro - 30 Year Baseline, Dec 2014

TABLE 3

INTERNATIONAL GDP FORECASTS BY TRAVEL REGION

	GROSS DOMESTIC PRODUCT (In Billions of 2010 U.S. Dollars)				
CALENDAR YEAR	CANADA	EUROPE / AFRICA/ MIDDLE EAST	LATIN AMERICA / CARIBBEAN / MEXICO	JAPAN / PACIFIC BASIN / CHINA / OTHER ASIA / AUSTRALIA / NEW ZEALAND	WORLD
Historical					
2001	1,359.2	20,209.1	3,787.6	12,051.0	50,244.0
2007	1,586.3	24,573.0	4,762.5	16,439.6	62,416.1
2008	1,605.0	24,953.9	4,948.8	17,016.6	63,535.0
2009	1,561.5	24,082.4	4,882.7	17,340.7	62,461.4
2010	1,614.2	24,800.6	5,173.4	18,619.5	65,171.2
2011	1,661.9	25,415.1	5,388.3	19,482.9	67,151.5
2012	1,693.9	25,612.8	5,524.8	20,389.8	68,777.4
2013	1,727.8	25,848.3	5,671.7	21,330.1	70,479.3
2014E	1,769.6	26,274.2	5,722.3	22,239.5	72,264.2
Forecast					
2015	1,812.8	26,782.6	5,809.8	23,208.2	74,309.6
2016	1,857.1	27,441.3	5,975.4	24,294.5	76,687.4
2017	1,906.0	28,174.7	6,185.4	25,418.6	79,258.8
2018	1,954.9	28,928.4	6,412.8	26,665.3	81,958.3
2019	2,002.9	29,676.4	6,645.6	28,020.1	84,823.1
2020	2,050.6	30,446.3	6,889.3	29,449.6	87,828.5
2021	2,099.3	31,232.8	7,135.8	30,923.2	90,863.7
2022	2,146.9	32,017.3	7,389.8	32,426.6	93,914.4
2023	2,195.3	32,799.3	7,653.1	33,947.8	96,997.8
2024	2,245.2	33,592.6	7,922.2	35,491.8	100,117.7
2025	2,295.8	34,387.6	8,199.5	37,062.7	103,298.9
2026	2,347.3	35,178.9	8,483.6	38,662.7	106,522.7
2027	2,399.6	35,980.1	8,776.6	40,290.1	109,805.6
2028	2,453.4	36,793.8	9,077.5	41,922.4	113,130.3
2029	2,508.1	37,618.4	9,388.1	43,539.9	116,467.4
2030	2,564.2	38,458.6	9,706.5	45,164.8	119,850.2
2031	2,623.7	39,312.0	10,036.0	46,829.9	123,299.9
2032	2,683.8	40,174.5	10,374.2	48,502.3	126,785.1
2033	2,743.6	41,050.2	10,723.7	50,231.6	130,375.4
2034	2,804.6	41,938.9	11,083.4	51,971.5	134,018.0
2035	2,868.1	42,839.1	11,454.9	53,737.7	137,727.4
Avg Annual Growth					
2001-14	2.1%	2.0%	3.2%	4.8%	2.8%
2014-15	2.4%	1.9%	1.5%	4.4%	2.8%
2014-24	2.4%	2.5%	3.3%	4.8%	3.3%
2014-35	2.3%	2.4%	3.4%	4.3%	3.1%

Source: Global Insight website, GDP Components Tables (Interim Forecast, Monthly), Release date 15 December 2014

TABLE 4

INTERNATIONAL GDP FORECASTS – SELECTED AREAS/COUNTRIES

CALENDAR YEAR	GROSS DOMESTIC PRODUCT (In Billions of 2010 U.S. Dollars) NORTH AMERICA (NAFTA)	EUROZONE	UNITED KINGDOM	JAPAN	CHINA
Historical					
2001	15,071.9	11,446.1	2,082.8	5,114.3	2,370.5
2007	17,676.6	12,874.2	2,477.4	5,617.6	4,486.5
2008	17,665.9	12,921.5	2,469.1	5,557.5	4,917.1
2009	17,156.4	12,344.6	2,362.7	5,250.7	5,370.2
2010	17,629.7	12,587.6	2,407.9	5,496.4	5,931.4
2011	17,959.6	12,797.1	2,447.5	5,473.6	6,483.1
2012	18,388.3	12,709.7	2,463.6	5,569.3	6,979.4
2013	18,783.3	12,653.5	2,506.2	5,658.2	7,515.1
2014E	19,207.1	12,762.1	2,581.5	5,669.3	8,065.7
Forecast					
2015	19,727.1	12,938.0	2,648.7	5,730.0	8,589.2
2016	20,239.2	13,160.2	2,723.6	5,808.4	9,169.0
2017	20,794.4	13,388.5	2,790.6	5,841.8	9,791.3
2018	21,320.8	13,605.9	2,854.8	5,893.3	10,486.9
2019	21,901.9	13,816.1	2,919.9	5,963.0	11,250.7
2020	22,517.0	14,033.5	2,986.5	6,022.0	12,070.0
2021	23,095.7	14,259.1	3,055.1	6,077.7	12,904.5
2022	23,655.6	14,476.6	3,122.7	6,132.0	13,773.3
2023	24,225.9	14,696.0	3,190.1	6,185.7	14,632.3
2024	24,791.4	14,917.8	3,257.1	6,238.9	15,507.5
2025	25,384.9	15,134.8	3,325.5	6,291.7	16,389.7
2026	25,989.6	15,351.3	3,394.0	6,344.1	17,289.8
2027	26,609.0	15,569.4	3,464.3	6,396.6	18,204.8
2028	27,246.0	15,789.6	3,535.3	6,448.3	19,111.8
2029	27,892.5	16,011.6	3,607.8	6,498.2	19,996.7
2030	28,554.5	16,237.1	3,682.1	6,546.1	20,872.1
2031	29,223.1	16,465.5	3,757.9	6,592.5	21,774.4
2032	29,903.5	16,689.5	3,836.1	6,637.4	22,666.0
2033	30,610.1	16,912.4	3,914.3	6,680.7	23,589.4
2034	31,337.0	17,137.7	3,993.4	6,722.3	24,501.1
2035	32,084.2	17,363.4	4,073.7	6,762.0	25,412.5
Avg Annual Growth					
2001-14	1.9%	0.8%	1.7%	0.8%	9.9%
2014-15	2.7%	1.4%	2.6%	1.1%	6.5%
2014-24	2.6%	1.6%	2.4%	1.0%	6.8%
2014-35	2.5%	1.5%	2.2%	0.8%	5.6%

Source: Global Insight website, GDP Components Tables (Interim Forecast, Monthly), Release date 15 December 2014

TABLE 5

U.S. COMMERCIAL AIR CARRIERS[1]

TOTAL SCHEDULED U.S. PASSENGER TRAFFIC

FISCAL	REVENUE PASSENGER ENPLANEMENTS (Millions)			REVENUE PASSENGER MILES (Billions)		
YEAR	DOMESTIC	INTERNATIONAL	SYSTEM	DOMESTIC	INTERNATIONAL	SYSTEM
Historical						
2001	625.3	56.7	682.0	507.5	183.3	690.8
2007	688.5	75.3	763.8	600.5	221.2	821.7
2008	680.7	78.3	759.1	594.6	233.8	828.5
2009	630.8	73.6	704.4	548.6	221.3	770.0
2010	634.8	77.3	712.1	555.3	231.0	786.3
2011	650.1	81.0	731.1	572.2	242.5	814.6
2012	653.8	82.9	736.7	577.7	244.6	822.2
2013	654.4	85.1	739.5	584.0	250.3	834.2
2014E	668.4	88.0	756.3	598.5	256.7	855.1
Forecast						
2015	685.6	90.2	775.8	615.1	262.5	877.7
2016	696.2	93.4	789.5	624.9	271.3	896.2
2017	708.8	97.0	805.8	637.1	282.3	919.4
2018	720.6	100.5	821.1	649.5	293.2	942.7
2019	729.5	104.6	834.1	659.3	305.6	965.0
2020	742.0	109.1	851.1	672.5	318.9	991.4
2021	752.0	113.3	865.3	683.4	331.9	1,015.2
2022	762.4	117.5	879.9	694.7	344.7	1,039.4
2023	774.2	121.9	896.1	707.4	357.8	1,065.2
2024	784.9	126.2	911.1	719.2	371.0	1,090.1
2025	796.6	130.8	927.4	731.9	384.8	1,116.7
2026	809.2	135.5	944.7	745.4	399.0	1,144.4
2027	823.8	140.4	964.2	760.9	413.6	1,174.5
2028	839.4	145.5	984.9	777.5	428.7	1,206.2
2029	855.1	150.7	1,005.8	794.1	444.1	1,238.3
2030	871.0	156.1	1,027.1	811.2	460.0	1,271.2
2031	886.4	161.5	1,048.0	827.7	476.0	1,303.8
2032	902.6	167.1	1,069.7	845.1	492.5	1,337.6
2033	918.9	173.0	1,091.9	862.6	509.7	1,372.3
2034	935.3	179.1	1,114.4	880.4	527.5	1,407.8
2035	951.0	185.5	1,136.5	897.6	545.8	1,443.4
Avg Annual Growth						
2001-14	0.5%	3.4%	0.8%	1.3%	2.6%	1.7%
2014-15	2.6%	2.5%	2.6%	2.8%	2.3%	2.6%
2014-24	1.6%	3.7%	1.9%	1.9%	3.8%	2.5%
2014-35	1.7%	3.6%	2.0%	1.9%	3.7%	2.5%

Source: Forms 41 and 298-C, U.S. Department of Transportation.

[1] Sum of U.S. Mainline and Regional Air Carriers.

TABLE 6

U.S. COMMERCIAL AIR CARRIERS[1]

SCHEDULED PASSENGER CAPACITY, TRAFFIC, AND LOAD FACTORS

	DOMESTIC			INTERNATIONAL			SYSTEM		
FISCAL YEAR	ASMs (BIL)	RPMs (BIL)	% LOAD FACTOR	ASMs (BIL)	RPMs (BIL)	% LOAD FACTOR	ASMs (BIL)	RPMs (BIL)	% LOAD FACTOR
Historical									
2001	731.5	507.5	69.4	246.6	183.3	74.3	978.1	690.8	70.6
2007	752.5	600.5	79.8	275.9	221.2	80.2	1,028.4	821.7	79.9
2008	749.6	594.6	79.3	292.7	233.8	79.9	1,042.4	828.5	79.5
2009	682.5	548.6	80.4	283.3	221.3	78.1	965.8	770.0	79.7
2010	679.5	555.3	81.7	281.3	231.0	82.1	960.8	786.3	81.8
2011	693.5	572.2	82.5	300.4	242.5	80.7	993.9	814.6	82.0
2012	694.4	577.7	83.2	300.5	244.6	81.4	994.9	822.2	82.6
2013	699.8	584.0	83.4	303.2	250.3	82.6	1,003.0	834.2	83.2
2014E	709.4	598.5	84.4	315.4	256.7	81.4	1,024.8	855.1	83.4
Forecast									
2015	729.1	615.1	84.4	320.5	262.5	81.9	1,049.6	877.7	83.6
2016	739.1	624.9	84.5	331.2	271.3	81.9	1,070.3	896.2	83.7
2017	752.2	637.1	84.7	344.6	282.3	81.9	1,096.8	919.4	83.8
2018	765.5	649.5	84.8	358.0	293.2	81.9	1,123.5	942.7	83.9
2019	776.1	659.3	85.0	373.1	305.6	81.9	1,149.3	965.0	84.0
2020	790.6	672.5	85.1	389.4	318.9	81.9	1,180.1	991.4	84.0
2021	802.6	683.4	85.1	405.3	331.9	81.9	1,207.9	1,015.2	84.0
2022	815.2	694.7	85.2	421.0	344.7	81.9	1,236.2	1,039.4	84.1
2023	829.5	707.4	85.3	437.0	357.8	81.9	1,266.5	1,065.2	84.1
2024	842.7	719.2	85.3	453.2	371.0	81.9	1,295.8	1,090.1	84.1
2025	857.0	731.9	85.4	470.1	384.8	81.9	1,327.1	1,116.7	84.1
2026	872.4	745.4	85.4	487.5	399.0	81.8	1,359.9	1,144.4	84.2
2027	890.1	760.9	85.5	505.4	413.6	81.8	1,395.5	1,174.5	84.2
2028	909.0	777.5	85.5	524.0	428.7	81.8	1,433.0	1,206.2	84.2
2029	928.1	794.1	85.6	542.8	444.1	81.8	1,470.9	1,238.3	84.2
2030	947.7	811.2	85.6	562.2	460.0	81.8	1,509.9	1,271.2	84.2
2031	966.6	827.7	85.6	581.9	476.0	81.8	1,548.6	1,303.8	84.2
2032	986.5	845.1	85.7	602.1	492.5	81.8	1,588.7	1,337.6	84.2
2033	1,006.8	862.6	85.7	623.2	509.7	81.8	1,629.9	1,372.3	84.2
2034	1,027.1	880.4	85.7	645.0	527.5	81.8	1,672.1	1,407.8	84.2
2035	1,046.9	897.6	85.7	667.5	545.8	81.8	1,714.4	1,443.4	84.2
Avg Annual Growth									
2001-14	-0.2%	1.3%		2.1%	2.8%		0.4%	1.8%	
2014-15	2.8%	2.8%		1.6%	2.3%		2.4%	2.6%	
2014-24	1.7%	1.9%		3.7%	3.8%		2.4%	2.5%	
2014-35	1.9%	1.9%		3.6%	3.7%		2.5%	2.5%	

Source: Forms 41 and 298-C, U.S. Department of Transportation.

[1]Sum of U.S. Mainline and Regional Air Carriers.

TABLE 7

U.S. COMMERCIAL AIR CARRIERS[1]

TOTAL SCHEDULED U.S. INTERNATIONAL PASSENGER TRAFFIC

	REVENUE PASSENGER ENPLANEMENTS				REVENUE PASSENGER MILES			
FISCAL YEAR	ATLANTIC (Mil)	LATIN AMERICA (Mil)	PACIFIC (Mil)	TOTAL INTERNATIONAL (Mil)	ATLANTIC (Bil)	LATIN AMERICA (Bil)	PACIFIC (Bil)	TOTAL INTERNATIONAL (Bil)
Historical								
2001	20.5	23.1	11.4	55.0	86.2	37.2	59.4	182.9
2007	24.1	37.6	13.6	75.2	102.2	57.7	61.4	221.2
2008	26.0	39.1	13.2	78.3	112.7	60.7	60.4	233.8
2009	24.7	36.8	12.0	73.6	108.9	57.7	54.7	221.3
2010	24.5	39.9	12.9	77.3	108.6	63.1	59.2	231.0
2011	25.3	42.2	13.5	81.0	111.7	67.2	63.6	242.5
2012	24.8	44.1	14.0	82.9	107.9	70.3	66.4	244.6
2013	24.8	45.9	14.4	85.1	107.0	74.6	68.6	250.3
2014E	25.0	49.1	14.0	88.0	107.9	80.3	68.5	256.7
Forecast								
2015	25.3	51.0	13.8	90.1	109.5	83.7	69.4	262.5
2016	26.1	50.0	14.4	90.4	113.7	87.0	70.6	271.3
2017	26.8	52.2	14.9	93.9	117.7	91.0	73.5	282.3
2018	27.6	54.3	15.5	97.4	121.6	95.0	76.7	293.2
2019	28.4	56.9	16.2	101.5	125.7	99.7	80.2	305.6
2020	29.2	59.7	17.0	105.9	130.1	105.0	83.8	318.9
2021	30.0	62.4	17.7	110.1	134.5	110.0	87.4	331.9
2022	30.8	65.1	18.4	114.3	138.7	114.9	91.1	344.7
2023	31.6	67.8	19.1	118.6	143.1	120.0	94.7	357.8
2024	32.4	70.6	19.8	122.9	147.4	125.1	98.4	371.0
2025	33.2	73.6	20.6	127.4	151.9	130.6	102.2	384.8
2026	34.1	76.7	21.3	132.1	156.5	136.4	106.1	399.0
2027	34.9	79.9	22.1	136.9	161.2	142.4	110.0	413.6
2028	35.8	83.3	22.9	142.0	166.1	148.6	114.0	428.7
2029	36.7	86.8	23.7	147.1	171.0	155.1	118.0	444.1
2030	37.6	90.4	24.4	152.4	176.1	161.9	122.0	460.0
2031	38.5	94.1	25.2	157.8	181.3	168.7	126.0	476.0
2032	39.4	97.9	26.0	163.3	186.5	175.8	130.1	492.5
2033	40.3	102.0	26.9	169.1	191.9	183.4	134.4	509.7
2034	41.2	106.2	27.7	175.2	197.5	191.3	138.7	527.5
2035	42.2	110.7	28.5	181.4	203.2	199.6	143.1	545.8
Avg Annual Growth								
2001-14	1.5%	5.9%	1.6%	3.7%	1.7%	6.1%	1.1%	2.6%
2014-15	1.5%	4.0%	-1.5%	2.4%	1.5%	4.3%	1.2%	2.3%
2014-24	2.6%	3.7%	3.6%	3.4%	3.2%	4.5%	3.7%	3.8%
2014-35	2.5%	4.0%	3.5%	3.5%	3.1%	4.4%	3.6%	3.7%

Source: Forms 41 and 298-C, U.S. Department of Transportation.

[1]Sum of U.S. Mainline and Regional Air Carriers.

TABLE 8

U.S. AND FOREIGN FLAG CARRIERS

TOTAL PASSENGER TRAFFIC TO/FROM THE UNITED STATES

CALENDAR YEAR	TOTAL PASSENGERS BY WORLD TRAVEL AREA (Millions)				
	ATLANTIC	LATIN AMERICA	PACIFIC	U.S./CANADA TRANSBORDER	TOTAL
Historical					
2001	47.5	38.8	23.2	19.2	128.7
2007	53.3	48.6	26.3	21.5	149.7
2008	57.1	49.8	25.8	21.7	154.4
2009	55.0	48.0	24.4	20.2	147.5
2010	55.9	53.1	26.7	21.8	157.5
2011	58.1	57.2	27.8	22.5	165.6
2012	60.8	61.0	30.8	24.8	177.4
2013	62.7	64.7	32.3	25.7	185.5
2014E	65.6	69.5	33.9	26.7	195.7
Forecast					
2015	68.5	73.8	35.3	27.3	204.9
2016	71.2	75.4	37.0	28.1	211.8
2017	74.6	78.3	38.6	29.1	220.6
2018	77.8	81.8	40.4	30.1	230.1
2019	81.2	85.6	42.5	31.2	240.4
2020	84.8	89.8	44.5	32.4	251.5
2021	88.3	94.1	46.6	33.5	262.5
2022	91.9	98.5	48.6	34.7	273.6
2023	95.4	103.1	50.7	35.8	285.0
2024	99.1	107.8	52.7	37.0	296.6
2025	102.8	112.8	54.9	38.2	308.7
2026	106.7	117.9	57.1	39.4	321.1
2027	110.6	123.3	59.3	40.7	334.0
2028	114.7	129.0	61.5	42.1	347.3
2029	118.9	134.8	63.7	43.5	360.9
2030	123.3	140.9	66.0	44.9	375.0
2031	127.7	147.3	68.2	46.3	389.5
2032	132.2	153.9	70.5	47.8	404.4
2033	136.9	160.8	72.8	49.4	420.0
2034	141.8	168.1	75.2	51.0	436.1
2035	146.9	175.7	77.6	52.7	452.9
Avg Annual Growth					
2001-14	2.5%	4.6%	3.0%	2.6%	3.3%
2014-15	4.3%	6.1%	4.3%	2.5%	4.7%
2014-24	4.2%	4.5%	4.5%	3.3%	4.2%
2014-35	3.9%	4.5%	4.0%	3.3%	4.1%

Source: US Customs & Border Protection data processed and released by Department of Commerce; data also received from Transport Canada.

TABLE 9

U.S. COMMERCIAL AIR CARRIERS' FORECAST ASSUMPTIONS[1]

SEATS PER AIRCRAFT MILE AND PASSENGER TRIP LENGTH

	AVERAGE SEATS PER AIRCRAFT MILE			AVERAGE PASSENGER TRIP LENGTH		
FISCAL YEAR	DOMESTIC (Seats/Mile)	INT'L. (Seats/Mile)	SYSTEM (Seats/Mile)	DOMESTIC (Miles)	INT'L. (Miles)	SYSTEM (Miles)
Historical						
2001	127.5	226.9	143.4	811.6	3,233.9	1,012.9
2007	120.4	216.1	136.6	872.1	2,939.3	1,075.8
2008	120.8	218.6	138.2	873.5	2,985.2	1,091.4
2009	121.8	219.0	140.0	869.8	3,008.1	1,093.1
2010	121.8	216.4	139.7	874.8	2,988.0	1,104.2
2011	122.5	216.8	141.1	880.1	2,992.7	1,114.2
2012	123.4	213.9	141.5	883.6	2,949.6	1,116.1
2013	124.9	214.0	142.9	892.4	2,942.1	1,128.2
2014E	126.9	214.8	145.2	895.4	2,917.4	1,130.6
Forecast						
2015	127.8	214.7	145.8	897.2	2,911.3	1,131.3
2016	128.6	215.0	146.9	897.5	2,906.5	1,135.1
2017	129.4	215.6	148.0	898.9	2,911.6	1,141.1
2018	130.3	216.1	149.2	901.3	2,917.4	1,148.1
2019	131.2	216.7	150.4	903.8	2,921.7	1,156.8
2020	131.8	217.1	151.5	906.3	2,924.3	1,164.9
2021	132.5	217.6	152.5	908.8	2,928.2	1,173.3
2022	133.1	218.2	153.5	911.2	2,932.2	1,181.2
2023	133.6	218.7	154.4	913.7	2,935.6	1,188.7
2024	134.2	219.2	155.3	916.2	2,939.1	1,196.4
2025	134.7	219.7	156.1	918.7	2,941.6	1,204.0
2026	135.3	220.1	157.0	921.2	2,943.7	1,211.4
2027	135.8	220.6	157.8	923.7	2,945.2	1,218.1
2028	136.4	221.0	158.6	926.2	2,946.1	1,224.7
2029	136.9	221.4	159.3	928.7	2,946.6	1,231.1
2030	137.4	221.8	160.1	931.3	2,946.6	1,237.6
2031	137.9	222.3	160.8	933.8	2,946.8	1,244.1
2032	138.4	222.7	161.6	936.3	2,946.5	1,250.4
2033	138.9	223.0	162.3	938.8	2,945.7	1,256.8
2034	139.4	223.4	163.0	941.3	2,944.3	1,263.3
2035	139.9	223.8	163.8	943.8	2,942.7	1,270.1

Source: Forms 41 and 298-C, U.S. Department of Transportation.

[1]Sum of U.S. Mainline and Regional Air Carriers.

TABLE 10

U. S. MAINLINE AIR CARRIERS

SCHEDULED PASSENGER TRAFFIC

FISCAL YEAR	REVENUE PASSENGER ENPLANEMENTS (Millions)			REVENUE PASSENGER MILES (Billions)		
	DOMESTIC	INTERNATIONAL	TOTAL	DOMESTIC	INTERNATIONAL	TOTAL
Historical						
2001	544.9	53.5	598.4	483.2	182.3	665.6
2007	532.3	71.9	604.1	529.9	219.5	749.4
2008	521.6	74.8	596.5	521.3	231.9	753.3
2009	476.8	71.0	547.8	478.3	220.0	698.3
2010	473.1	74.6	547.7	480.3	229.6	709.9
2011	488.4	78.6	567.0	496.7	241.2	737.9
2012	494.8	79.9	574.6	503.3	242.7	746.1
2013	498.9	82.2	581.1	511.0	248.4	759.4
2014E	513.2	85.1	598.3	525.1	254.8	779.9
Forecast						
2015	527.0	87.3	614.3	539.3	260.6	799.9
2016	535.2	90.4	625.6	547.6	269.4	817.0
2017	544.9	93.9	638.8	558.2	280.3	838.5
2018	554.0	97.4	651.4	568.9	291.1	860.0
2019	560.9	101.5	662.4	577.4	303.5	881.0
2020	570.5	105.9	676.4	588.8	316.8	905.6
2021	578.2	110.1	688.4	598.3	329.7	928.0
2022	586.3	114.3	700.6	608.1	342.4	950.5
2023	595.4	118.6	714.0	619.1	355.5	974.6
2024	603.7	122.9	726.6	629.3	368.7	998.0
2025	612.7	127.4	740.2	640.3	382.4	1,022.8
2026	622.4	132.1	754.5	652.1	396.6	1,048.6
2027	633.7	136.9	770.7	665.5	411.2	1,076.7
2028	645.7	142.0	787.7	679.9	426.2	1,106.1
2029	657.9	147.1	805.0	694.4	441.5	1,135.9
2030	670.2	152.4	822.6	709.2	457.3	1,166.5
2031	682.0	157.8	839.8	723.5	473.4	1,196.9
2032	694.4	163.3	857.8	738.5	489.7	1,228.3
2033	707.0	169.1	876.2	753.8	506.9	1,260.6
2034	719.6	175.2	894.8	769.1	524.6	1,293.7
2035	731.7	181.4	913.1	784.0	542.9	1,326.9
Avg Annual Growth						
2001-14	-0.5%	3.6%	0.8%	0.6%	2.6%	1.7%
2014-15	2.7%	2.5%	2.6%	2.7%	2.3%	2.6%
2014-24	1.6%	3.7%	1.9%	1.8%	3.8%	2.5%
2014-35	1.7%	3.7%	2.0%	1.9%	3.7%	2.5%

Source: Form 41, U.S. Department of Transportation.

TABLE 11

U.S. MAINLINE AIR CARRIERS

SCHEDULED PASSENGER CAPACITY, TRAFFIC, AND LOAD FACTORS

	DOMESTIC			INTERNATIONAL			SYSTEM		
FISCAL YEAR	ASMs (BIL)	RPMs (BIL)	% LOAD FACTOR	ASMs (BIL)	RPMs (BIL)	% LOAD FACTOR	ASMs (BIL)	RPMs (BIL)	% LOAD FACTOR
Historical									
2001	690.1	483.2	70.0	244.9	182.3	74.4	935.0	665.6	71.2
2007	659.0	529.9	80.4	273.4	219.5	80.3	932.4	749.4	80.4
2008	650.2	521.3	80.2	290.1	231.9	80.0	940.3	753.3	80.1
2009	587.8	478.3	81.4	281.5	220.0	78.2	869.3	698.3	80.3
2010	581.0	480.3	82.7	279.5	229.6	82.2	860.5	709.9	82.5
2011	594.4	496.7	83.6	298.6	241.2	80.8	893.0	737.9	82.6
2012	598.7	503.3	84.1	297.9	242.7	81.5	896.6	746.1	83.2
2013	606.8	511.0	84.2	300.7	248.4	82.6	907.5	759.4	83.7
2014E	617.7	525.1	85.0	312.9	254.8	81.4	930.6	779.9	83.8
Forecast									
2015	633.8	539.3	85.1	317.9	260.6	82.0	951.7	799.9	84.1
2016	642.0	547.6	85.3	328.5	269.4	82.0	970.6	817.0	84.2
2017	653.1	558.2	85.5	341.9	280.3	82.0	994.9	838.5	84.3
2018	664.4	568.9	85.6	355.2	291.1	82.0	1,019.6	860.0	84.4
2019	673.4	577.4	85.8	370.3	303.5	82.0	1,043.7	881.0	84.4
2020	685.7	588.8	85.9	386.6	316.8	81.9	1,072.3	905.6	84.5
2021	695.9	598.3	86.0	402.4	329.7	81.9	1,098.3	928.0	84.5
2022	706.7	608.1	86.1	418.0	342.4	81.9	1,124.7	950.5	84.5
2023	718.8	619.1	86.1	434.0	355.5	81.9	1,152.8	974.6	84.5
2024	730.1	629.3	86.2	450.1	368.7	81.9	1,180.2	998.0	84.6
2025	742.4	640.3	86.3	467.0	382.4	81.9	1,209.3	1,022.8	84.6
2026	755.5	652.1	86.3	484.3	396.6	81.9	1,239.8	1,048.6	84.6
2027	770.7	665.5	86.4	502.2	411.2	81.9	1,272.8	1,076.7	84.6
2028	786.9	679.9	86.4	520.6	426.2	81.9	1,307.5	1,106.1	84.6
2029	803.3	694.4	86.4	539.4	441.5	81.9	1,342.7	1,135.9	84.6
2030	820.1	709.2	86.5	558.7	457.3	81.9	1,378.8	1,166.5	84.6
2031	836.3	723.5	86.5	578.4	473.4	81.8	1,414.7	1,196.9	84.6
2032	853.3	738.5	86.5	598.5	489.7	81.8	1,451.8	1,228.3	84.6
2033	870.6	753.8	86.6	619.5	506.9	81.8	1,490.1	1,260.6	84.6
2034	888.0	769.1	86.6	641.2	524.6	81.8	1,529.2	1,293.7	84.6
2035	905.0	784.0	86.6	663.6	542.9	81.8	1,568.6	1,326.9	84.6
Avg Annual Growth									
2001-14	-0.8%	0.6%	1.5%	1.9%	2.6%	0.7%	0.0%	1.2%	1.3%
2014-15	2.6%	2.7%	0.1%	1.6%	2.3%	0.7%	2.3%	2.6%	0.3%
2014-24	1.7%	1.8%	0.1%	3.7%	3.8%	0.1%	2.4%	2.5%	0.1%
2014-35	1.8%	1.9%	0.1%	3.6%	3.7%	0.0%	2.5%	2.6%	0.0%

Source: Form 41, U.S. Department of Transportation.

TABLE 12

U.S. MAINLINE AIR CARRIERS

SCHEDULED INTERNATIONAL PASSENGER ENPLANEMENTS

FISCAL YEAR	REVENUE PASSENGER ENPLANEMENTS (MIL)			
	ATLANTIC	LATIN AMERICA	PACIFIC	TOTAL
Historical				
2001	20.5	21.7	11.4	20.5
2007	24.1	34.2	13.6	71.9
2008	26.0	35.6	13.2	74.8
2009	24.7	34.3	12.0	71.0
2010	24.5	37.2	12.9	74.6
2011	25.3	39.8	13.5	78.6
2012	24.8	41.0	14.0	79.9
2013	24.8	43.0	14.4	82.2
2014E	25.0	46.2	14.0	85.1
Forecast				
2015	25.3	48.2	13.8	87.3
2016	26.1	50.0	14.4	90.4
2017	26.8	52.2	14.9	93.9
2018	27.6	54.3	15.5	97.4
2019	28.4	56.9	16.2	101.5
2020	29.2	59.7	17.0	105.9
2021	30.0	62.4	17.7	110.1
2022	30.8	65.1	18.4	114.3
2023	31.6	67.8	19.1	118.6
2024	32.4	70.6	19.8	122.9
2025	33.2	73.6	20.6	127.4
2026	34.1	76.7	21.3	132.1
2027	34.9	79.9	22.1	136.9
2028	35.8	83.3	22.9	142.0
2029	36.7	86.8	23.7	147.1
2030	37.6	90.4	24.4	152.4
2031	38.5	94.1	25.2	157.8
2032	39.4	97.9	26.0	163.3
2033	40.3	102.0	26.9	169.1
2034	41.2	106.2	27.7	175.2
2035	42.2	110.7	28.5	181.4
Avg Annual Growth				
2001-14	1.5%	6.0%	1.6%	11.6%
2014-15	1.5%	4.3%	-1.5%	2.5%
2014-24	2.6%	4.3%	3.6%	3.7%
2014-35	2.5%	4.2%	3.5%	3.7%

Source: Form 41, U.S. Department of Transportation.

TABLE 13

U.S. MAINLINE AIR CARRIERS

SCHEDULED PASSENGER CAPACITY, TRAFFIC, AND LOAD FACTORS BY INTERNATIONAL TRAVEL REGIONS

	ATLANTIC			LATIN AMERICA			PACIFIC			INTERNATIONAL		
FISCAL YEAR	ASMs (BIL)	RPMs (BIL)	% LOAD FACTOR	ASMs (BIL)	RPMs (BIL)	% LOAD FACTOR	ASMs (BIL)	RPMs (BIL)	% LOAD FACTOR	ASMs (BIL)	RPMs (BIL)	% LOAD FACTOR
Historical												
2001	112.9	86.2	76.4	53.0	36.6	69.2	79.1	59.4	75.2	244.9	182.3	74.4
2007	126.6	102.2	80.7	72.7	55.9	76.9	74.1	61.4	82.9	273.4	219.5	80.3
2008	141.0	112.7	80.0	74.2	58.8	79.3	74.9	60.4	80.6	290.1	231.9	80.0
2009	138.2	108.9	78.9	73.5	56.4	76.8	69.9	54.7	78.3	281.5	220.0	78.2
2010	130.9	108.6	82.9	78.0	61.8	79.2	70.5	59.2	84.1	279.5	229.6	82.2
2011	138.3	111.7	80.7	82.5	65.9	79.9	77.8	63.6	81.8	298.6	241.2	80.8
2012	132.3	107.9	81.5	84.7	68.5	80.9	81.0	66.4	82.0	297.9	242.7	81.5
2013	128.4	107.0	83.3	89.7	72.8	81.1	82.6	68.6	83.1	300.7	248.4	82.6
2014E	132.1	107.9	81.7	97.2	78.4	80.6	83.6	68.5	82.0	312.9	254.8	81.4
Forecast												
2015	130.3	109.5	84.0	101.8	81.7	80.3	85.7	69.4	80.9	317.9	260.6	82.0
2016	135.4	113.7	84.0	105.9	85.0	80.3	87.3	70.6	80.9	328.5	269.4	82.0
2017	140.2	117.7	84.0	110.8	89.0	80.3	90.9	73.5	80.9	341.9	280.3	82.0
2018	144.7	121.6	84.0	115.7	92.9	80.3	94.7	76.7	80.9	355.2	291.1	82.0
2019	149.7	125.7	84.0	121.6	97.6	80.3	99.1	80.2	80.9	370.3	303.5	82.0
2020	154.9	130.1	84.0	128.0	102.8	80.3	103.6	83.8	80.9	386.6	316.8	81.9
2021	160.1	134.5	84.0	134.2	107.8	80.3	108.1	87.4	80.9	402.4	329.7	81.9
2022	165.1	138.7	84.0	140.3	112.6	80.3	112.6	91.1	80.9	418.0	342.4	81.9
2023	170.3	143.1	84.0	146.6	117.7	80.3	117.1	94.7	80.9	434.0	355.5	81.9
2024	175.5	147.4	84.0	152.9	122.8	80.3	121.6	98.4	80.9	450.1	368.7	81.9
2025	180.9	151.9	84.0	159.8	128.3	80.3	126.3	102.2	80.9	467.0	382.4	81.9
2026	186.3	156.5	84.0	166.8	134.0	80.3	131.1	106.1	80.9	484.3	396.6	81.9
2027	192.0	161.2	84.0	174.2	139.9	80.3	136.0	110.0	80.9	502.2	411.2	81.9
2028	197.7	166.1	84.0	182.0	146.1	80.3	140.9	114.0	80.9	520.6	426.2	81.9
2029	203.6	171.0	84.0	190.0	152.5	80.3	145.8	118.0	80.9	539.4	441.5	81.9
2030	209.7	176.1	84.0	198.3	159.2	80.3	150.8	122.0	80.9	558.7	457.3	81.9
2031	215.8	181.3	84.0	206.8	166.0	80.3	155.8	126.0	80.9	578.4	473.4	81.8
2032	222.0	186.5	84.0	215.6	173.1	80.3	160.9	130.1	80.9	598.5	489.7	81.8
2033	228.5	191.9	84.0	224.9	180.6	80.3	166.1	134.4	80.9	619.5	506.9	81.8
2034	235.1	197.5	84.0	234.7	188.4	80.3	171.4	138.7	80.9	641.2	524.6	81.8
2035	241.9	203.2	84.0	244.9	196.6	80.3	176.9	143.1	80.9	663.6	542.9	81.8
Avg Annual Growth												
2001-14	1.2%	1.7%		4.8%	6.0%		0.4%	1.1%		1.9%	2.6%	
2014-15	-1.3%	1.5%		4.7%	4.3%		2.6%	1.2%		1.6%	2.3%	
2014-24	2.9%	3.2%		4.6%	4.6%		3.8%	3.7%		3.7%	3.8%	
2014-35	2.9%	3.1%		4.5%	4.5%		3.6%	3.6%		3.6%	3.7%	

Source: Form 41, U.S. Department of Transportation.

TABLE 14

U.S. MAINLINE AIR CARRIER FORECAST ASSUMPTIONS

SEATS PER AIRCRAFT MILE

FISCAL YEAR	DOMESTIC (Seats/Mile)	INTERNATIONAL ATLANTIC (Seats/Mile)	INTERNATIONAL LATIN AMERICA (Seats/Mile)	INTERNATIONAL PACIFIC (Seats/Mile)	INTERNATIONAL TOTAL (Seats/Mile)	SYSTEM (Seats/Mile)
Historical						
2001	146.4	232.6	174.7	304.1	233.6	162.3
2007	150.6	229.2	176.2	279.6	222.3	166.3
2008	150.3	229.2	177.3	292.3	224.9	167.5
2009	151.2	230.0	175.8	291.3	223.7	168.9
2010	152.0	231.7	171.7	287.2	220.9	169.2
2011	152.3	230.5	173.2	282.9	221.0	170.0
2012	152.7	230.4	171.8	278.3	219.4	169.9
2013	153.9	233.3	171.8	276.2	219.2	170.8
2014E	155.1	236.1	173.0	276.2	219.7	172.1
Forecast						
2015	156.3	236.6	173.5	276.9	219.7	173.0
2016	156.9	237.1	174.0	277.7	220.0	173.8
2017	157.5	237.6	174.5	278.4	220.4	174.6
2018	158.1	238.1	175.0	279.2	220.8	175.5
2019	158.8	238.6	175.5	279.9	221.3	176.5
2020	159.4	239.1	176.0	280.7	221.6	177.3
2021	160.0	239.6	176.5	281.4	222.0	178.2
2022	160.5	240.1	177.0	282.2	222.4	179.0
2023	161.1	240.6	177.5	282.9	222.9	179.8
2024	161.6	241.1	178.0	283.7	223.3	180.6
2025	162.1	241.6	178.5	284.4	223.7	181.4
2026	162.6	242.1	179.0	285.2	224.1	182.1
2027	163.1	242.6	179.5	285.9	224.5	182.8
2028	163.5	243.1	180.0	286.7	224.8	183.4
2029	164.0	243.6	180.5	287.4	225.2	184.1
2030	164.4	244.1	181.0	288.2	225.5	184.7
2031	164.8	244.6	181.5	288.9	225.9	185.3
2032	165.2	245.1	182.0	289.7	226.2	185.9
2033	165.6	245.6	182.5	290.4	226.6	186.5
2034	166.0	246.1	183.0	291.2	226.9	187.1
2035	166.4	246.6	183.5	291.9	227.2	187.7

Source: Form 41, U.S. Department of Transportation.

TABLE 15

U.S. MAINLINE AIR CARRIER FORECAST ASSUMPTIONS

AVERAGE PASSENGER TRIP LENGTH

FISCAL YEAR	DOMESTIC (Miles)	INTERNATIONAL ATLANTIC (Miles)	INTERNATIONAL LATIN AMERICA (Miles)	INTERNATIONAL PACIFIC (Miles)	INTERNATIONAL TOTAL (Miles)	SYSTEM (Miles)
Historical						
2001	886.9	4,211.8	1,688.3	5,228.8	3,405.0	1,012.9
2007	995.6	4,247.8	1,634.7	4,515.1	3,054.6	1,075.8
2008	999.4	4,332.7	1,651.6	4,583.5	3,100.1	1,091.4
2009	1,003.2	4,402.4	1,645.6	4,549.9	3,097.6	1,093.1
2010	1,015.2	4,433.0	1,660.1	4,586.6	3,077.2	1,104.2
2011	1,016.9	4,414.7	1,655.3	4,706.9	3,067.5	1,114.2
2012	1,017.3	4,355.7	1,668.2	4,725.1	3,039.6	1,116.1
2013	1,024.3	4,312.6	1,692.9	4,773.6	3,022.9	1,128.2
2014E	1,023.3	4,320.8	1,696.4	4,909.6	2,993.0	1,130.6
Forecast						
2015	1,023.3	4,322.9	1,696.4	5,044.1	2,986.2	1,131.3
2016	1,023.3	4,365.3	1,700.5	4,919.5	2,979.7	1,135.1
2017	1,024.4	4,387.8	1,705.6	4,924.5	2,983.3	1,141.1
2018	1,026.9	4,410.3	1,710.3	4,929.4	2,987.8	1,148.1
2019	1,029.5	4,433.0	1,715.7	4,934.4	2,990.2	1,156.8
2020	1,032.1	4,455.8	1,721.2	4,939.4	2,991.1	1,164.9
2021	1,034.7	4,478.7	1,726.1	4,944.4	2,993.2	1,173.3
2022	1,037.3	4,501.7	1,730.6	4,949.4	2,995.7	1,181.2
2023	1,039.9	4,524.9	1,734.9	4,954.4	2,997.8	1,188.7
2024	1,042.4	4,548.1	1,739.0	4,959.4	3,000.0	1,196.4
2025	1,045.0	4,571.5	1,743.0	4,964.4	3,001.2	1,204.0
2026	1,047.6	4,595.0	1,746.9	4,969.4	3,002.0	1,211.4
2027	1,050.2	4,618.6	1,750.7	4,974.5	3,002.4	1,218.1
2028	1,052.9	4,642.4	1,754.4	4,979.5	3,002.3	1,224.7
2029	1,055.5	4,666.2	1,757.9	4,984.5	3,001.7	1,231.1
2030	1,058.2	4,690.2	1,761.3	4,989.6	3,000.8	1,237.6
2031	1,060.8	4,714.3	1,764.5	4,994.6	3,000.0	1,244.1
2032	1,063.5	4,738.5	1,767.6	4,999.6	2,998.8	1,250.4
2033	1,066.1	4,762.9	1,770.6	5,004.7	2,996.9	1,256.8
2034	1,068.8	4,787.4	1,773.6	5,009.8	2,994.6	1,263.3
2035	1,071.5	4,812.0	1,776.4	5,014.8	2,992.0	1,270.1

Source: Form 41, U.S. Department of Transportation.

TABLE 16

U.S. MAINLINE AIR CARRIER FORECAST ASSUMPTIONS

PASSENGER YIELDS

	REVENUE PER PASSENGER MILE					
	DOMESTIC		INTERNATIONAL		SYSTEM	
FISCAL YEAR	CURRENT $ (Cents)	FY 2014 $ (Cents)	CURRENT $ (Cents)	FY 2014 $ (Cents)	CURRENT $ (Cents)	FY 2014 $ (Cents)
Historical						
2001	13.54	18.13	10.34	13.85	13.36	17.89
2007	12.45	14.31	12.45	14.32	13.11	15.07
2008	13.11	14.43	13.37	14.72	13.90	15.30
2009	11.95	13.20	11.68	12.90	12.35	13.63
2010	12.62	13.70	12.84	13.93	12.98	14.10
2011	13.62	14.41	14.09	14.90	13.90	14.70
2012	14.08	14.55	14.77	15.25	14.20	14.67
2013	14.42	14.65	14.88	15.12	14.31	14.54
2014E	15.18	15.18	15.00	15.00	14.79	14.79
Forecast						
2015	15.64	15.59	14.98	14.93	15.09	15.04
2016	16.02	15.70	15.13	14.83	15.39	15.09
2017	16.46	15.80	15.36	14.74	15.75	15.12
2018	16.86	15.83	15.61	14.66	16.10	15.11
2019	17.40	15.95	15.87	14.55	16.53	15.15
2020	17.89	16.01	16.13	14.43	16.94	15.15
2021	18.46	16.11	16.37	14.29	17.38	15.17
2022	18.88	16.12	16.63	14.19	17.72	15.13
2023	19.21	16.05	16.88	14.10	18.02	15.05
2024	19.62	16.02	17.15	14.01	18.36	15.00
2025	20.02	15.99	17.43	13.92	18.71	14.94
2026	20.36	15.91	17.71	13.83	19.01	14.85
2027	20.66	15.80	17.97	13.75	19.28	14.75
2028	20.93	15.68	18.24	13.67	19.53	14.64
2029	21.18	15.55	18.50	13.59	19.78	14.52
2030	21.41	15.42	18.76	13.51	20.01	14.41
2031	21.67	15.29	19.04	13.44	20.26	14.30
2032	21.93	15.16	19.32	13.36	20.51	14.18
2033	22.22	15.05	19.60	13.27	20.79	14.08
2034	22.52	14.95	19.87	13.19	21.06	13.98
2035	22.83	14.85	20.16	13.11	21.36	13.89
Avg Annual Growth						
2001-14	0.9%	-1.4%	2.9%	0.6%	0.8%	-1.5%
2014-15	3.0%	2.7%	-0.2%	-0.5%	2.0%	1.7%
2014-24	2.6%	0.5%	1.3%	-0.7%	2.2%	0.1%
2014-35	2.0%	-0.1%	1.4%	-0.6%	1.8%	-0.3%

Source: Form 41, U.S. Department of Transportation.

TABLE 17

U.S. MAINLINE AIR CARRIER FORECAST ASSUMPTIONS

INTERNATIONAL PASSENGER YIELDS BY REGION

	REVENUE PER PASSENGER MILE							
	ATLANTIC		LATIN AMERICA		PACIFIC		TOTAL INTERNATIONAL	
FISCAL	CURRENT $	FY 2014 $	CURRENT $	FY 2014 $	CURRENT $	FY 2014 $	CURRENT $	FY 2014 $
YEAR	(Cents)	(Cents)	(Cents)	(Cents)	(Cents)	(Cents)	(Cents)	(Cents)
Historical								
2001	9.71	11.96	13.38	16.48	9.38	11.55	10.34	12.74
2007	12.46	13.11	13.37	14.06	11.61	12.21	12.45	13.10
2008	13.29	13.46	14.19	14.38	12.73	12.90	13.37	13.55
2009	11.25	11.43	12.99	13.20	11.20	11.38	11.68	11.87
2010	12.73	12.73	13.33	13.33	12.50	12.50	12.84	12.84
2011	13.48	13.07	15.13	14.67	14.07	13.64	14.09	13.66
2012	13.95	13.25	15.90	15.10	14.95	14.20	14.77	14.03
2013	14.45	13.52	16.06	15.04	14.30	13.38	14.88	13.93
2014E	14.88	13.70	16.00	14.74	14.04	12.93	15.00	13.81
Forecast								
2015	15.02	13.70	15.77	14.38	13.96	12.73	14.98	13.66
2016	15.18	13.63	15.91	14.29	14.11	12.67	15.13	13.59
2017	15.43	13.56	16.11	14.16	14.33	12.59	15.36	13.50
2018	15.70	13.50	16.35	14.05	14.58	12.54	15.61	13.42
2019	15.98	13.43	16.58	13.93	14.83	12.46	15.87	13.34
2020	16.26	13.36	16.82	13.82	15.08	12.39	16.13	13.25
2021	16.52	13.29	17.04	13.71	15.32	12.32	16.37	13.17
2022	16.80	13.23	17.27	13.60	15.56	12.26	16.63	13.09
2023	17.08	13.16	17.50	13.49	15.82	12.19	16.88	13.01
2024	17.37	13.10	17.74	13.38	16.08	12.12	17.15	12.93
2025	17.68	13.03	18.00	13.27	16.36	12.06	17.43	12.85
2026	17.97	12.97	18.24	13.16	16.64	12.00	17.71	12.77
2027	18.26	12.90	18.48	13.06	16.90	11.94	17.97	12.70
2028	18.55	12.84	18.72	12.96	17.17	11.88	18.24	12.62
2029	18.83	12.77	18.96	12.86	17.43	11.83	18.50	12.55
2030	19.10	12.71	19.20	12.77	17.70	11.77	18.76	12.48
2031	19.40	12.64	19.46	12.69	17.98	11.72	19.04	12.41
2032	19.70	12.58	19.70	12.58	18.27	11.66	19.32	12.34
2033	20.01	12.52	19.93	12.47	18.56	11.61	19.60	12.26
2034	20.31	12.46	20.17	12.37	18.85	11.56	19.87	12.19
2035	20.63	12.39	20.41	12.26	19.26	11.50	20.16	12.11
Avg Annual Growth								
2001-14	3.3%	1.0%	1.4%	-0.9%	3.2%	0.9%	2.9%	0.6%
2014-15	1.0%	0.0%	-1.5%	-2.4%	-0.5%	-1.5%	-0.2%	-1.1%
2014-24	1.6%	-0.5%	1.0%	-1.0%	1.4%	-0.6%	1.3%	-0.7%
2014-35	1.6%	-0.5%	1.2%	-0.9%	1.5%	-0.6%	1.4%	-0.6%

Source: Form 41, U.S. Department of Transportation.

TABLE 18

U.S. MAINLINE AIR CARRIER FORECAST ASSUMPTIONS

JET FUEL PRICES

FISCAL YEAR	DOMESTIC CURRENT $ (Cents)	DOMESTIC FY 2014 $ (Cents)	INTERNATIONAL CURRENT $ (Cents)	INTERNATIONAL FY 2014 $ (Cents)	SYSTEM CURRENT $ (Cents)	SYSTEM FY 2014 $ (Cents)
Historical						
2001	82.66	110.70	86.37	115.67	83.68	112.07
2007	194.17	223.21	203.31	233.72	197.00	226.47
2008	292.53	322.00	314.57	346.26	299.65	329.83
2009	202.07	223.10	208.27	229.94	204.14	225.38
2010	219.16	237.90	220.12	238.94	219.49	238.26
2011	289.32	306.07	288.10	304.77	288.87	305.59
2012	314.56	324.87	309.52	319.67	312.64	322.89
2013	309.18	314.18	299.68	304.53	305.53	310.47
2014E	300.55	300.55	292.35	292.35	297.44	297.44
Forecast						
2015	207.33	206.71	201.67	201.07	205.18	204.57
2016	201.20	197.18	195.71	191.80	199.12	195.14
2017	215.10	206.47	209.23	200.84	212.87	204.33
2018	233.46	219.22	227.09	213.24	231.04	216.95
2019	264.42	242.38	257.21	235.77	261.69	239.87
2020	294.71	263.70	286.67	256.51	291.66	260.97
2021	332.90	290.66	323.82	282.73	329.46	287.65
2022	361.14	308.29	351.29	299.88	357.41	305.10
2023	378.11	315.85	367.80	307.24	374.20	312.59
2024	401.43	327.84	390.48	318.89	397.28	324.45
2025	424.49	338.92	412.91	329.67	420.10	335.41
2026	440.15	343.83	428.14	334.45	435.59	340.27
2027	450.45	344.60	438.16	335.19	445.79	341.03
2028	457.45	342.79	444.97	333.44	452.72	339.24
2029	461.04	338.58	448.46	329.34	456.27	335.08
2030	463.36	333.68	450.72	324.58	458.57	330.23
2031	465.61	328.61	452.91	319.64	460.80	325.21
2032	467.58	323.27	454.82	314.45	462.74	319.93
2033	473.56	320.80	460.64	312.04	468.66	317.48
2034	481.45	319.60	468.31	310.88	476.47	316.29
2035	491.50	319.67	478.09	310.95	486.42	316.36
Avg Annual Growth						
2001-14	10.4%	8.0%	9.8%	7.4%	10.2%	7.8%
2014-15	-31.0%	-31.2%	-31.0%	-31.2%	-31.0%	-31.2%
2014-24	2.9%	0.9%	2.9%	0.9%	2.9%	0.9%
2014-35	2.4%	0.3%	2.4%	0.3%	2.4%	0.3%

Source: Form 41, U.S. Department of Transportation

TABLE 19

U.S. COMMERCIAL AIR CARRIERS

AIR CARGO REVENUE TON MILES[1, 2, 3]

FISCAL YEAR	ALL-CARGO CARRIER RTMS (Millions)			PASSENGER CARRIER RTMS (Millions)			TOTAL RTMS (Millions)		
	DOMESTIC	INT'L.	TOTAL	DOMESTIC	INT'L.	TOTAL	DOMESTIC	INT'L.	TOTAL
Historical									
2001	9,992.3	7,380.0	17,372.4	3,945.6	7,166.9	11,112.5	13,937.9	14,547.0	28,484.9
2007	12,940.5	17,502.7	30,443.2	2,278.6	7,187.0	9,465.7	15,219.1	24,689.7	39,908.8
2008	12,260.7	17,516.1	29,776.7	2,147.0	6,905.4	9,052.4	14,407.6	24,421.5	38,829.1
2009	10,275.3	13,834.3	24,109.7	1,623.2	5,265.9	6,889.1	11,898.6	19,100.2	30,998.8
2010	11,243.2	16,732.7	27,975.9	1,579.8	6,331.9	7,911.7	12,823.1	23,064.5	35,887.6
2011	10,601.2	18,979.7	29,580.9	1,445.7	6,250.5	7,696.2	12,046.9	25,230.2	37,277.0
2012	10,886.1	18,310.1	29,196.1	1,408.7	5,952.4	7,361.1	12,294.8	24,262.5	36,557.2
2013	10,996.0	16,741.2	27,737.2	1,380.8	5,699.5	7,080.3	12,376.8	22,440.7	34,817.5
2014E	11,225.6	16,022.9	27,248.4	1,440.7	6,138.2	7,578.9	12,666.2	22,161.0	34,827.3
Forecast									
2015	11,429.9	16,872.2	28,302.1	1,452.4	6,367.1	7,819.5	12,882.3	23,239.4	36,121.6
2016	11,539.2	17,781.2	29,320.4	1,455.3	6,609.4	8,064.7	12,994.5	24,390.6	37,385.0
2017	11,732.7	18,805.3	30,538.1	1,468.5	6,884.3	8,352.9	13,201.3	25,689.7	38,890.9
2018	11,811.9	19,821.6	31,633.4	1,467.2	7,145.9	8,613.1	13,279.1	26,967.4	40,246.5
2019	11,953.1	21,019.5	32,972.6	1,473.5	7,461.5	8,934.9	13,426.6	28,481.0	41,907.5
2020	12,165.2	22,338.3	34,503.5	1,488.1	7,807.1	9,295.2	13,653.3	30,145.4	43,798.6
2021	12,315.8	23,619.6	35,935.4	1,494.9	8,126.4	9,621.3	13,810.7	31,746.0	45,556.7
2022	12,382.3	24,883.7	37,266.0	1,491.3	8,427.0	9,918.3	13,873.7	33,310.7	47,184.3
2023	12,442.0	26,187.6	38,629.7	1,486.8	8,728.3	10,215.1	13,928.8	34,916.0	48,844.8
2024	12,477.8	27,509.7	39,987.5	1,479.4	9,022.8	10,502.2	13,957.2	36,532.5	50,489.7
2025	12,519.7	28,913.6	41,433.2	1,472.6	9,330.9	10,803.5	13,992.3	38,244.5	52,236.8
2026	12,571.9	30,365.4	42,937.3	1,467.0	9,640.7	11,107.7	14,038.9	40,006.1	54,045.0
2027	12,614.6	31,875.0	44,489.5	1,460.1	9,954.7	11,414.8	14,074.7	41,829.6	55,904.3
2028	12,667.2	33,440.4	46,107.6	1,454.4	10,271.5	11,725.9	14,121.6	43,711.9	57,833.5
2029	12,708.4	35,033.2	47,741.5	1,447.3	10,581.8	12,029.1	14,155.7	45,615.0	59,770.6
2030	12,752.6	36,682.3	49,434.9	1,440.5	10,894.1	12,334.6	14,193.0	47,576.4	61,769.4
2031	12,782.6	38,369.1	51,151.7	1,432.0	11,202.2	12,634.2	14,214.6	49,571.3	63,785.9
2032	12,813.6	40,103.3	52,916.9	1,423.6	11,508.4	12,932.1	14,237.2	51,611.8	65,849.0
2033	12,856.5	41,941.7	54,798.2	1,416.5	11,828.4	13,244.9	14,273.0	53,770.1	68,043.1
2034	12,897.5	43,848.3	56,745.7	1,409.1	12,150.7	13,559.8	14,306.5	55,999.0	70,305.5
2035	12,934.1	45,824.8	58,758.9	1,401.2	12,475.1	13,876.2	14,335.3	58,299.9	72,635.1
Avg Annual Growth									
2001-14	0.9%	6.1%	3.5%	-7.5%	-1.2%	-2.9%	-0.7%	3.3%	1.6%
2014-15	1.8%	5.3%	3.9%	0.8%	3.7%	3.2%	1.7%	4.9%	3.7%
2014-24	1.1%	5.6%	3.9%	0.3%	3.9%	3.3%	1.0%	5.1%	3.8%
2014-35	0.7%	5.1%	3.7%	-0.1%	3.4%	2.9%	0.6%	4.7%	3.6%

Source: Form 41, U.S. Department of Transportation

[1]Includes freight/express and mail revenue ton miles on mainline air carriers and regionals/commuters.

[2]Domestic figures from 2000 through 2002 exclude Airborne Express, Inc.; international figures for 2003 and beyond include new reporting of contract service by U.S. carriers for foreign flag carriers.

[3]Domestic figures from 2003 and beyond include Airborne Express. Inc.

TABLE 20

U.S. COMMERCIAL AIR CARRIERS

INTERNATIONAL AIR CARGO REVENUE TON MILES BY REGION[1, 2]

FISCAL YEAR	ATLANTIC (MILLIONS)	LATIN AMERICA (MILLIONS)	PACIFIC (MILLIONS)	OTHER INTERNATIONAL (MILLIONS)	TOTAL (MILLIONS)
Historical					
2001	5,282.0	1,867.3	6,948.7	1,320.3	15,418.4
2007	6,124.7	2,304.2	9,497.3	6,763.5	24,689.7
2008	6,415.4	2,336.3	9,050.0	6,619.8	24,421.5
2009	5,740.1	1,793.4	6,855.4	4,711.2	19,100.2
2010	6,865.3	1,990.6	8,348.4	5,860.3	23,064.5
2011	7,235.5	1,832.4	9,105.4	7,056.9	25,230.2
2012	7,026.5	1,870.0	8,568.9	6,797.1	24,262.5
2013	6,661.7	1,788.6	8,184.2	5,806.3	22,440.7
2014E	6,886.7	1,740.5	8,428.8	5,105.1	22,161.0
Forecast					
2015	7,138.5	1,761.6	9,016.0	5,323.3	23,239.4
2016	7,437.7	1,780.8	9,660.9	5,511.2	24,390.6
2017	7,776.6	1,799.9	10,419.9	5,693.2	25,689.7
2018	8,120.7	1,817.4	11,157.7	5,871.7	26,967.4
2019	8,489.1	1,835.8	12,101.7	6,054.3	28,481.0
2020	8,883.1	1,854.9	13,161.2	6,246.2	30,145.4
2021	9,280.1	1,872.7	14,147.4	6,445.8	31,746.0
2022	9,678.4	1,889.8	15,098.5	6,644.0	33,310.7
2023	10,086.1	1,906.9	16,077.6	6,845.3	34,916.0
2024	10,503.6	1,923.8	17,054.2	7,050.9	36,532.5
2025	10,937.4	1,941.2	18,105.2	7,260.8	38,244.5
2026	11,381.0	1,958.5	19,192.0	7,474.6	40,006.1
2027	11,840.0	1,976.1	20,320.2	7,693.2	41,829.6
2028	12,316.9	1,993.9	21,486.1	7,915.1	43,711.9
2029	12,808.0	2,011.6	22,657.3	8,138.1	45,615.0
2030	13,318.1	2,029.5	23,864.3	8,364.5	47,576.4
2031	13,841.5	2,047.3	25,086.4	8,596.2	49,571.3
2032	14,380.7	2,065.1	26,335.2	8,830.7	51,611.8
2033	14,943.3	2,083.4	27,670.8	9,072.7	53,770.1
2034	15,527.0	2,101.9	29,051.7	9,318.4	55,999.0
2035	16,131.0	2,120.5	30,479.3	9,569.0	58,299.9
Avg Annual Growth					
2001-14	2.1%	-0.5%	1.5%	11.0%	2.8%
2014-15	3.7%	1.2%	7.0%	4.3%	4.9%
2014-24	4.3%	1.0%	7.3%	3.3%	5.1%
2014-35	4.1%	0.9%	6.3%	3.0%	4.7%

Source: Form 41, U.S. Department of Transportation

[1]Includes freight/express and mail revenue ton miles on mainline air carriers and regionals/commuters.

[2]Figures for 2003 and beyond include new reporting of contract service by U.S. carriers for foreign flag carriers.

TABLE 21

U.S. MAINLINE AIR CARRIERS

PASSENGER JET AIRCRAFT

CALENDAR	LARGE NARROWBODY				LARGE WIDEBODY				LARGE	REGIONAL	TOTAL
YEAR	2 ENGINE	3 ENGINE	4 ENGINE	TOTAL	2 ENGINE	3 ENGINE	4 ENGINE	TOTAL	JETS	JETS	JETS
Historical											
2001	3,364	385	0	3,749	424	169	120	713	4,462	26	4,488
2007	3,302	26	0	3,328	462	19	49	530	3,858	39	3,897
2008	3,354	29	0	3,383	477	12	47	536	3,919	63	3,982
2009	3,170	10	1	3,181	471	9	44	524	3,705	79	3,784
2010	3,108	9	1	3,118	447	9	42	498	3,616	78	3,694
2011	3,120	8	1	3,129	470	9	43	522	3,651	71	3,722
2012	3,127	7	1	3,135	471	7	41	519	3,654	76	3,730
2013	3,121	7	0	3,128	480	3	40	523	3,651	82	3,733
2014E	3,155	5	0	3,160	481	0	40	521	3,681	93	3,774
Forecast											
2015	3,174	5	0	3,179	489	0	40	529	3,708	96	3,804
2016	3,199	5	0	3,204	507	0	40	547	3,751	102	3,853
2017	3,238	5	0	3,243	527	0	40	567	3,810	108	3,918
2018	3,271	5	0	3,276	543	0	40	583	3,859	114	3,973
2019	3,273	5	0	3,278	578	0	40	618	3,896	107	4,003
2020	3,291	5	0	3,296	594	0	31	625	3,921	97	4,018
2021	3,336	5	0	3,341	633	0	16	649	3,990	97	4,087
2022	3,376	5	0	3,381	670	0	12	682	4,063	97	4,160
2023	3,430	1	0	3,431	701	0	6	707	4,138	97	4,235
2024	3,476	0	0	3,476	714	0	4	718	4,194	97	4,291
2025	3,512	0	0	3,512	731	0	0	731	4,243	97	4,340
2026	3,554	0	0	3,554	757	0	0	757	4,311	102	4,413
2027	3,601	0	0	3,601	775	0	0	775	4,376	107	4,483
2028	3,635	0	0	3,635	783	0	0	783	4,418	112	4,530
2029	3,665	0	0	3,665	808	0	0	808	4,473	114	4,587
2030	3,718	0	0	3,718	833	0	0	833	4,551	114	4,665
2031	3,779	0	0	3,779	860	0	0	860	4,639	114	4,753
2032	3,839	0	0	3,839	885	0	0	885	4,724	113	4,837
2033	3,895	0	0	3,895	918	0	0	918	4,813	113	4,926
2034	3,948	0	0	3,948	948	0	0	948	4,896	113	5,009
2035	4,016	0	0	4,016	983	0	0	983	4,999	113	5,112
Avg Annual Growth											
2001-14	-0.5%	-30.4%	N/A	-1.4%	1.1%	N/A	-8.7%	-2.6%	-1.6%	11.2%	-1.4%
2014-15	0.6%	0.0%	N/A	0.6%	1.7%	N/A	0.0%	1.5%	0.7%	3.2%	0.8%
2014-24	1.0%	-100.0%	N/A	1.0%	4.0%	N/A	-20.6%	3.3%	1.3%	0.4%	1.3%
2014-35	1.2%	-99.9%	N/A	1.1%	3.5%	N/A	-99.9%	3.1%	1.5%	0.9%	1.5%

TABLE 22

U.S. MAINLINE AIR CARRIERS

CARGO JET AIRCRAFT

CALENDAR	LARGE NARROWBODY				LARGE WIDEBODY				
YEAR	2 ENGINE	3 ENGINE	4 ENGINE	TOTAL	2 ENGINE	3 ENGINE	4 ENGINE	TOTAL	TOTAL
Historical									
2001	166	332	176	674	164	158	68	390	1,064
2007	162	220	78	460	260	208	80	548	1,008
2008	162	162	75	399	272	213	86	571	970
2009	163	116	29	308	274	207	82	563	871
2010	154	107	30	291	253	196	82	531	822
2011	153	104	31	288	265	200	97	562	850
2012	175	89	26	290	281	203	96	580	870
2013	186	67	12	265	292	188	93	573	838
2014E	191	15	0	206	296	174	64	534	740
Forecast									
2015	191	15	0	206	294	174	64	532	738
2016	193	15	0	208	301	172	67	540	748
2017	199	13	0	212	309	173	70	552	764
2018	204	13	0	217	316	171	73	560	777
2019	210	13	0	223	338	167	73	578	801
2020	213	13	0	226	356	164	75	595	821
2021	216	11	0	227	374	154	78	606	833
2022	219	9	0	228	390	144	81	615	843
2023	224	7	0	231	408	136	84	628	859
2024	235	2	0	237	421	131	88	640	877
2025	243	0	0	243	439	128	91	658	901
2026	251	0	0	251	453	127	92	672	923
2027	257	0	0	257	470	127	94	691	948
2028	263	0	0	263	490	128	95	713	976
2029	270	0	0	270	511	129	97	737	1,007
2030	275	0	0	275	530	129	99	758	1,033
2031	282	0	0	282	551	129	102	782	1,064
2032	288	0	0	288	569	130	105	804	1,092
2033	294	0	0	294	589	131	110	830	1,124
2034	299	0	0	299	608	131	113	852	1,151
2035	306	0	0	306	628	132	116	876	1,182
Avg Annual Growth									
2001-14	1.2%	-22.7%	-100.0%	-9.4%	5.0%	0.8%	-0.5%	2.7%	-3.0%
2014-15	0.0%	0.0%	N/A	0.0%	-0.7%	0.0%	0.0%	-0.4%	-0.3%
2014-24	2.1%	-18.2%	N/A	1.4%	3.6%	-2.8%	3.2%	1.8%	1.7%
2014-35	2.3%	-100.0%	N/A	1.9%	3.6%	-1.3%	2.9%	2.4%	2.3%

TABLE 23

TOTAL JET FUEL AND AVIATION GASOLINE FUEL CONSUMPTION

U.S. CIVIL AVIATION AIRCRAFT

(Millions of Gallons)

FISCAL YEAR	JET FUEL					AVIATION GASOLINE			TOTAL FUEL CONSUMED
	U.S. AIR CARRIERS[1]			GENERAL AVIATION	TOTAL	AIR CARRIER	GENERAL AVIATION	TOTAL	
	DOMESTIC	INT'L.	TOTAL						
Historical									
2001	15,030	5,484	20,513	972	21,485	2	333	335	21,350
2007	13,775	6,186	19,961	1,643	21,603	2	283	285	21,889
2008	13,882	6,309	20,191	1,486	21,676	2	274	276	21,952
2009	13,397	6,499	19,896	1,706	21,602	2	248	250	21,852
2010	11,896	6,033	17,929	1,447	19,376	2	227	229	19,606
2011	11,973	6,290	18,263	1,435	19,698	2	221	223	19,921
2012	12,092	6,547	18,639	1,456	20,095	2	217	219	20,315
2013	12,038	6,590	18,628	1,435	20,063	2	206	208	20,272
2014E	11,812	6,355	18,167	1,413	19,580	2	207	209	19,789
Forecast									
2015	11,810	6,462	18,271	1,470	19,741	2	204	206	19,947
2016	12,035	6,703	18,738	1,521	20,259	2	200	202	20,461
2017	12,252	6,950	19,202	1,576	20,777	2	198	200	20,977
2018	12,461	7,209	19,670	1,636	21,305	2	196	198	21,504
2019	12,681	7,462	20,143	1,694	21,837	2	195	197	22,034
2020	12,862	7,719	20,581	1,757	22,338	2	194	196	22,534
2021	13,002	7,958	20,960	1,823	22,783	2	192	194	22,977
2022	13,094	8,190	21,283	1,878	23,161	2	191	193	23,355
2023	13,171	8,420	21,591	1,935	23,526	2	191	193	23,719
2024	13,260	8,655	21,916	1,990	23,906	2	191	193	24,098
2025	13,384	8,905	22,289	2,045	24,334	2	191	193	24,527
2026	13,515	9,157	22,672	2,104	24,775	2	191	193	24,968
2027	13,645	9,414	23,059	2,158	25,218	2	190	192	25,410
2028	13,767	9,675	23,442	2,216	25,658	2	190	192	25,851
2029	13,899	9,939	23,838	2,276	26,114	2	190	192	26,307
2030	14,021	10,214	24,235	2,336	26,571	2	191	193	26,764
2031	14,144	10,493	24,637	2,394	27,031	2	191	193	27,224
2032	14,254	10,775	25,029	2,454	27,483	2	192	194	27,677
2033	14,365	11,060	25,424	2,511	27,936	2	194	196	28,131
2034	14,474	11,353	25,827	2,568	28,395	2	195	197	28,592
2035	14,584	11,653	26,237	2,629	28,866	2	197	199	29,064
Avg Annual Growth									
2001-14	-1.8%	1.1%	-0.9%	2.9%	-0.7%	0.0%	-3.6%	-3.6%	-0.6%
2014-15	0.0%	1.7%	0.6%	4.0%	0.8%	0.0%	-1.5%	-1.5%	0.8%
2014-24	1.2%	3.1%	1.9%	3.5%	2.0%	0.0%	-0.8%	-0.8%	2.0%
2014-35	1.0%	2.9%	1.8%	3.0%	1.9%	0.0%	-0.2%	-0.2%	1.8%

Source: Air carrier jet fuel, Form 41, U.S. Department of Transportation; all others, FAA APO estimates.

[1]Includes both passenger (mainline and regional air carrier) and cargo carriers.

[2]Forecast assumes 1.0% annual improvement in ASMs/Gallon for U.S. Commercial Air Carrier

TABLE 24

U.S. REGIONAL CARRIER FORECAST ASSUMPTIONS

FISCAL YEAR	AVERAGE SEATS PER AIRCRAFT MILE			AVERAGE PASSENGER TRIP LENGTH			REVENUE PER PASSENGER MILE**	
	DOMESTIC (Seats/Mile)	INT'L. (Seats/Mile)	SYSTEM (Seats/Mile)	DOMESTIC (Miles)	INT'L. (Miles)	SYSTEM (Miles)	CURRENT $ (Cents)	2014 $ (Cents)
Historical								
2001	40.5	43.0	40.6	302.1	302.9	302.1	31.65	42.39
2007	49.9	54.0	50.0	451.4	518.1	452.8	19.95	22.93
2008	52.9	53.4	53.0	460.8	532.7	462.3	21.04	23.16
2009	55.2	52.8	55.1	456.9	512.3	457.8	17.04	18.82
2010	56.1	53.2	56.0	464.0	502.9	464.6	15.74	17.08
2011	56.4	52.7	56.3	467.0	531.4	468.0	15.10	15.98
2012	56.1	54.8	56.0	467.4	605.7	470.0	13.16	13.60
2013	56.1	54.6	56.1	469.2	641.5	472.3	11.66	11.84
2014E	57.0	56.6	57.0	472.5	661.7	475.9	11.76	11.76
Forecast								
2015	57.8	56.9	57.7	478.1	669.5	481.5	12.10	12.07
2016	58.6	57.2	58.6	479.6	671.6	483.0	12.40	12.15
2017	59.5	57.5	59.5	481.6	674.4	485.1	12.73	12.22
2018	60.4	57.8	60.3	483.6	677.2	487.1	13.03	12.24
2019	61.3	58.1	61.2	485.6	680.1	489.1	13.45	12.33
2020	61.9	58.4	61.8	487.7	682.9	491.2	13.83	12.38
2021	62.5	58.7	62.4	489.7	685.7	493.2	14.26	12.45
2022	63.0	59.0	62.9	491.7	688.5	495.2	14.59	12.45
2023	63.5	59.3	63.3	493.7	691.4	497.3	14.84	12.40
2024	63.9	59.6	63.8	495.7	694.2	499.3	15.16	12.38
2025	64.4	59.9	64.3	497.8	697.0	501.4	15.47	12.35
2026	64.9	60.2	64.7	499.8	699.9	503.4	15.73	12.28
2027	65.4	60.5	65.2	501.8	702.7	505.4	15.95	12.20
2028	65.8	60.8	65.7	503.8	705.5	507.5	16.16	12.11
2029	66.3	61.1	66.2	505.8	708.3	509.5	16.36	12.01
2030	66.8	61.4	66.7	507.8	711.2	511.5	16.54	11.91
2031	67.3	61.7	67.1	509.9	714.0	513.6	16.73	11.81
2032	67.8	62.0	67.6	511.9	716.8	515.6	16.93	11.71
2033	68.3	62.3	68.1	513.9	719.6	517.6	17.16	11.62
2034	68.8	62.6	68.6	515.9	722.5	519.7	17.39	11.54
2035	69.3	62.9	69.1	518.0	725.3	521.7	17.63	11.47
Avg Annual Growth								
2001-14	2.7%	2.1%	2.7%	3.5%	6.2%	3.6%	-7.3%	-9.4%
2014-15	1.3%	0.5%	1.2%	1.2%	1.2%	1.2%	2.9%	2.6%
2014-24	1.1%	0.5%	1.1%	0.5%	0.5%	0.5%	2.6%	0.5%
2014-35	0.9%	0.5%	0.9%	0.4%	0.4%	0.4%	1.9%	-0.1%

Source: Form 41 and 298C, U.S. Department of Transportation.

** Reporting carriers.

TABLE 25

U.S. REGIONAL CARRIERS

SCHEDULED PASSENGER TRAFFIC

(In Millions)

FISCAL	REVENUE PASSENGERS ENPLANEMENTS (Millions)			REVENUE PASSENGER MILES (Billions)		
YEAR	DOMESTIC	INTERNATIONAL	SYSTEM	DOMESTIC	INTERNATIONAL	SYSTEM
Historical						
2001	80.4	3.1	83.6	24,299	947	25,246
2007	156.3	3.4	159.7	70,528	1,772	72,300
2008	159.1	3.5	162.6	73,305	1,867	75,172
2009	154.0	2.5	156.6	70,374	1,304	71,678
2010	161.7	2.7	164.4	75,030	1,347	76,377
2011	161.7	2.4	164.1	75,513	1,270	76,783
2012	159.0	3.1	162.1	74,330	1,856	76,187
2013	155.5	2.9	158.4	72,956	1,851	74,807
2014E	155.2	2.9	158.1	73,338	1,888	75,226
Forecast						
2015	158.6	2.9	161.5	75,831	1,952	77,784
2016	161.0	3.0	164.0	77,225	1,988	79,213
2017	163.9	3.0	166.9	78,939	2,032	80,972
2018	166.6	3.1	169.7	80,569	2,074	82,644
2019	168.6	3.1	171.7	81,892	2,108	84,000
2020	171.5	3.2	174.6	83,620	2,153	85,773
2021	173.7	3.2	176.9	85,075	2,190	87,265
2022	176.1	3.2	179.3	86,588	2,229	88,817
2023	178.8	3.3	182.1	88,273	2,273	90,546
2024	181.2	3.3	184.6	89,842	2,313	92,155
2025	183.9	3.4	187.3	91,534	2,357	93,891
2026	186.7	3.4	190.2	93,330	2,403	95,733
2027	190.1	3.5	193.6	95,380	2,456	97,836
2028	193.6	3.6	197.2	97,553	2,512	100,065
2029	197.2	3.6	200.8	99,755	2,568	102,324
2030	200.8	3.7	204.5	102,000	2,626	104,626
2031	204.4	3.8	208.2	104,216	2,683	106,900
2032	208.1	3.8	211.9	106,532	2,743	109,274
2033	211.9	3.9	215.8	108,891	2,804	111,694
2034	215.7	4.0	219.6	111,263	2,865	114,127
2035	219.3	4.0	223.3	113,578	2,924	116,502
Avg Annual Growth						
2001-14	5.2%	-0.7%	5.0%	8.9%	5.5%	8.8%
2014-15	2.2%	2.2%	2.2%	3.4%	3.4%	3.4%
2014-24	1.6%	1.6%	1.6%	2.1%	2.1%	2.1%
2014-35	1.7%	1.7%	1.7%	2.1%	2.1%	2.1%

Source: Form 41 and 298C, U.S. Department of Transportation.

TABLE 26

U.S. REGIONAL CARRIERS

SCHEDULED PASSENGER CAPACITY, TRAFFIC, AND LOAD FACTORS

	DOMESTIC			INTERNATIONAL			SYSTEM		
FISCAL YEAR	ASMs (MIL)	RPMs (MIL)	% LOAD FACTOR	ASMs (MIL)	RPMs (MIL)	% LOAD FACTOR	ASMs (MIL)	RPMs (MIL)	% LOAD FACTOR
Historical									
2001	41,418	24,299	58.7	1,633	947	58.0	43,051	25,246	58.6
2007	93,452	70,528	75.5	2,550	1,772	69.5	96,002	72,300	75.3
2008	99,469	73,305	73.7	2,632	1,867	70.9	102,101	75,172	73.6
2009	94,664	70,374	74.3	1,859	1,304	70.2	96,523	71,678	74.3
2010	98,461	75,030	76.2	1,857	1,347	72.5	100,318	76,377	76.1
2011	99,075	75,513	76.2	1,818	1,270	69.9	100,893	76,783	76.1
2012	95,748	74,330	77.6	2,595	1,856	71.5	98,343	76,187	77.5
2013	93,084	72,956	78.4	2,448	1,851	75.6	95,532	74,807	78.3
2014E	91,666	73,338	80.0	2,508	1,888	75.3	94,174	75,226	79.9
Forecast									
2015	95,333	75,831	79.5	2,608	1,952	74.9	97,941	77,784	79.4
2016	97,039	77,225	79.6	2,655	1,988	74.9	99,694	79,213	79.5
2017	99,149	78,939	79.6	2,713	2,032	74.9	101,861	80,972	79.5
2018	101,154	80,569	79.7	2,767	2,074	75.0	103,921	82,644	79.5
2019	102,774	81,892	79.7	2,812	2,108	75.0	105,586	84,000	79.6
2020	104,904	83,620	79.7	2,870	2,153	75.0	107,774	85,773	79.6
2021	106,692	85,075	79.7	2,919	2,190	75.0	109,611	87,265	79.6
2022	108,554	86,588	79.8	2,970	2,229	75.1	111,524	88,817	79.6
2023	110,632	88,273	79.8	3,027	2,273	75.1	113,659	90,546	79.7
2024	112,565	89,842	79.8	3,080	2,313	75.1	115,645	92,155	79.7
2025	114,654	91,534	79.8	3,137	2,357	75.1	117,791	93,891	79.7
2026	116,871	93,330	79.9	3,197	2,403	75.2	120,069	95,733	79.7
2027	119,409	95,380	79.9	3,267	2,456	75.2	122,676	97,836	79.8
2028	122,100	97,553	79.9	3,341	2,512	75.2	125,441	100,065	79.8
2029	124,828	99,755	79.9	3,415	2,568	75.2	128,243	102,324	79.8
2030	127,609	102,000	79.9	3,491	2,626	75.2	131,100	104,626	79.8
2031	130,354	104,216	79.9	3,566	2,683	75.2	133,921	106,900	79.8
2032	133,223	106,532	80.0	3,645	2,743	75.3	136,868	109,274	79.8
2033	136,147	108,891	80.0	3,725	2,804	75.3	139,872	111,694	79.9
2034	139,088	111,263	80.0	3,805	2,865	75.3	142,893	114,127	79.9
2035	141,957	113,578	80.0	3,884	2,924	75.3	145,841	116,502	79.9
Avg Annual Growth									
2001-14	6.8%	9.6%	2.6%	3.6%	5.9%	2.2%	6.7%	9.5%	2.6%
2014-15	4.0%	3.4%	-0.6%	4.0%	3.4%	-0.6%	4.0%	3.4%	-0.6%
2014-24	2.1%	2.1%	0.0%	2.1%	2.1%	0.0%	2.1%	2.1%	0.0%
2014-35	2.1%	2.1%	0.0%	2.1%	2.1%	0.0%	2.1%	2.1%	0.0%

Source: Form 41 and 298C, U.S. Department of Transportation.

TABLE 27

U.S. REGIONAL CARRIERS

PASSENGER AIRCRAFT

	REGIONAL AIRCRAFT											
AS OF	LESS THAN	10 TO 19	20 TO 30	31 TO 40 SEATS			OVER 40 SEATS			TOTAL FLEET		
JANUARY 1	9 SEATS	SEATS	SEATS	PROP	JET	TOTAL	PROP	JET*	TOTAL	NON JET	JET	TOTAL
Historical												
2001	470	343	262	474	74	548	155	496	651	1,704	570	2,274
2007	453	204	88	224	92	316	87	1,584	1,671	1,056	1,676	2,732
2008	453	172	79	228	91	319	101	1,656	1,757	1,033	1,747	2,780
2009	451	107	68	180	25	205	121	1,730	1,851	927	1,755	2,682
2010	466	103	65	153	29	182	115	1,722	1,837	902	1,751	2,653
2011	440	92	82	144	28	172	99	1,728	1,827	857	1,756	2,613
2012	447	94	67	113	27	140	135	1,683	1,818	856	1,710	2,566
2013	394	90	55	115	23	138	104	1,559	1,663	758	1,582	2,340
2014E	337	94	52	37	0	37	51	1,642	1,693	571	1,642	2,213
Forecast												
2015	326	91	50	36	0	36	53	1,646	1,699	556	1,646	2,202
2016	317	88	49	35	0	35	54	1,642	1,696	543	1,642	2,185
2017	304	85	47	33	0	33	57	1,640	1,697	526	1,640	2,166
2018	293	82	45	32	0	32	59	1,645	1,704	511	1,645	2,156
2019	282	79	43	31	0	31	61	1,644	1,705	496	1,644	2,140
2020	271	75	42	30	0	30	62	1,660	1,722	480	1,660	2,140
2021	258	72	40	28	0	28	64	1,668	1,732	462	1,668	2,130
2022	247	69	38	27	0	27	67	1,689	1,756	448	1,689	2,137
2023	234	65	36	26	0	26	69	1,712	1,781	430	1,712	2,142
2024	219	61	34	24	0	24	72	1,724	1,796	410	1,724	2,134
2025	204	57	32	22	0	22	75	1,740	1,815	390	1,740	2,130
2026	190	53	29	21	0	21	77	1,752	1,829	370	1,752	2,122
2027	173	48	27	19	0	19	80	1,768	1,848	347	1,768	2,115
2028	157	44	24	17	0	17	83	1,784	1,867	325	1,784	2,109
2029	144	40	22	16	0	16	85	1,801	1,886	307	1,801	2,108
2030	129	36	20	14	0	14	89	1,827	1,916	288	1,827	2,115
2031	116	32	18	13	0	13	91	1,855	1,946	270	1,855	2,125
2032	99	28	15	11	0	11	94	1,879	1,973	247	1,879	2,126
2033	85	24	13	9	0	9	97	1,904	2,001	228	1,904	2,132
2034	72	20	11	8	0	8	100	1,928	2,028	211	1,928	2,139
2035	55	15	9	6	0	6	103	1,953	2,056	188	1,953	2,141
Avg Annual Growth												
2001-14	-2.5%	-9.5%	-11.7%	-17.8%	-100.0%	-18.7%	-8.2%	9.6%	7.6%	-8.1%	8.5%	-0.2%
2014-15	-3.3%	-3.2%	-3.8%	-2.7%	N/A	-2.7%	3.9%	0.2%	0.4%	-2.6%	0.2%	-0.5%
2014-24	-4.2%	-4.2%	-4.2%	-4.2%	N/A	-4.2%	3.5%	0.5%	0.6%	-3.3%	0.5%	-0.4%
2014-35	-8.3%	-8.4%	-8.0%	-8.3%	N/A	-8.3%	3.4%	0.8%	0.9%	-5.2%	0.8%	-0.2%

Source: The Velocity Group for the Regional Airline Association through 2004.

*Independence Air A319 aircraft are included in Table 20 - U.S. Mainline Air Carriers Passenger Jet Aircraft.

TABLE 28

ACTIVE GENERAL AVIATION AND AIR TAXI AIRCRAFT

	FIXED WING												TOTAL		
	PISTON			TURBINE			ROTORCRAFT						GENERAL		
AS OF	SINGLE	MULTI-		TURBO	TURBO					EXPERI-	SPORT		AVIATION	TOTAL	TOTAL
DEC. 31	ENGINE	ENGINE	TOTAL	PROP	JET	TOTAL	PISTON	TURBINE	TOTAL	MENTAL**	AIRCRAFT**	OTHER	FLEET	PISTONS	TURBINES
Historical*															
2001	145,034	18,192	163,226	6,596	7,787	14,383	2,292	4,491	6,783	20,421	N/A	6,633	211,446	165,518	18,874
2007	147,569	19,337	166,906	9,514	10,385	19,899	2,769	6,798	9,567	23,228	6,066	5,940	231,606	169,675	26,697
2008	145,497	17,515	163,012	8,907	11,042	19,949	3,498	6,378	9,876	23,364	6,811	5,652	228,664	166,510	26,327
2009	140,649	16,474	157,123	9,055	11,268	20,323	3,499	6,485	9,984	24,419	6,547	5,480	223,876	160,622	26,808
2010	139,519	15,900	155,419	9,369	11,484	20,853	3,588	6,514	10,102	24,784	6,528	5,684	223,370	159,007	27,367
2011E	136,895	15,702	152,597	9,523	11,650	21,173	3,411	6,671	10,082	24,275	6,645	5,681	220,453	156,008	27,844
2012	128,847	14,313	143,160	10,304	11,793	22,097	3,292	6,763	10,055	26,715	2,001	5,006	209,034	146,452	28,860
2013	124,398	13,257	137,655	9,619	11,637	21,256	3,137	6,628	9,765	24,918	2,056	4,277	199,927	140,792	27,884
2014E	123,440	13,215	136,655	9,485	11,750	21,235	3,235	6,850	10,085	24,480	2,200	4,205	198,860	139,890	28,085
Forecast															
2015	122,435	13,175	135,610	9,390	11,915	21,305	3,335	7,105	10,440	24,880	2,355	4,190	198,780	138,945	28,410
2016	121,440	13,140	134,580	9,330	12,105	21,435	3,435	7,375	10,810	25,220	2,515	4,180	198,740	138,015	28,810
2017	120,490	13,100	133,590	9,295	12,325	21,620	3,530	7,645	11,175	25,605	2,680	4,185	198,855	137,120	29,265
2018	119,530	13,040	132,570	9,280	12,555	21,835	3,620	7,915	11,535	25,990	2,840	4,170	198,940	136,190	29,750
2019	118,605	12,985	131,590	9,285	12,815	22,100	3,705	8,165	11,870	26,380	3,010	4,155	199,105	135,295	30,265
2020	117,770	12,920	130,690	9,315	13,115	22,430	3,785	8,410	12,195	26,795	3,170	4,130	199,410	134,475	30,840
2021	116,965	12,850	129,815	9,360	13,440	22,800	3,865	8,655	12,520	27,210	3,330	4,115	199,790	133,680	31,455
2022	116,180	12,780	128,960	9,445	13,790	23,235	3,940	8,895	12,835	27,630	3,495	4,100	200,255	132,900	32,130
2023	115,410	12,695	128,105	9,545	14,165	23,710	4,015	9,130	13,145	28,040	3,655	4,085	200,740	132,120	32,840
2024	114,645	12,620	127,265	9,690	14,575	24,265	4,090	9,360	13,450	28,460	3,810	4,060	201,310	131,355	33,625
2025	113,905	12,545	126,450	9,855	15,000	24,855	4,165	9,595	13,760	28,875	3,970	4,060	201,970	130,615	34,450
2026	113,190	12,470	125,660	10,060	15,460	25,520	4,240	9,830	14,070	29,300	4,125	4,055	202,730	129,900	35,350
2027	112,500	12,410	124,910	10,305	15,945	26,250	4,315	10,070	14,385	29,725	4,275	4,065	203,610	129,225	36,320
2028	111,830	12,340	124,170	10,565	16,455	27,020	4,395	10,310	14,705	30,155	4,420	4,070	204,540	128,565	37,330
2029	111,205	12,275	123,480	10,845	16,995	27,840	4,475	10,555	15,030	30,555	4,565	4,065	205,535	127,955	38,395
2030	110,635	12,230	122,865	11,155	17,565	28,720	4,555	10,805	15,360	30,975	4,705	4,055	206,680	127,420	39,525
2031	110,110	12,185	122,295	11,485	18,155	29,640	4,640	11,055	15,695	31,385	4,840	4,050	207,905	126,935	40,695
2032	109,650	12,165	121,815	11,840	18,775	30,615	4,725	11,310	16,035	31,795	4,975	4,045	209,280	126,540	41,925
2033	109,260	12,145	121,405	12,200	19,430	31,630	4,810	11,575	16,385	32,210	5,105	4,035	210,770	126,215	43,205
2034	108,980	12,135	121,115	12,580	20,105	32,685	4,900	11,850	16,750	32,625	5,230	4,030	212,435	126,015	44,535
2035	108,810	12,135	120,945	12,970	20,815	33,785	4,990	12,120	17,110	33,040	5,360	4,020	214,260	125,935	45,905
Avg Annual Growth															
2001-14	-1.2%	-2.4%	-1.4%	2.8%	3.2%	3.0%	2.7%	3.3%	3.1%	1.4%	N/A	-3.4%	-0.5%	-1.3%	3.1%
2014-15	-0.8%	-0.3%	-0.8%	-1.0%	1.4%	0.3%	3.1%	3.7%	3.5%	1.6%	7.0%	-0.4%	0.0%	-0.7%	1.2%
2014-24	-0.7%	-0.5%	-0.7%	0.2%	2.2%	1.3%	2.4%	3.2%	2.9%	1.5%	5.6%	-0.4%	0.1%	-0.6%	1.8%
2014-35	-0.6%	-0.4%	-0.6%	1.5%	2.8%	2.2%	2.1%	2.8%	2.5%	1.4%	4.3%	-0.2%	0.4%	-0.5%	2.4%

* Source: 2001-2010, 2012 and 2013, FAA General Aviation and Air Taxi Activity (and Avionics) Surveys.

**Experimental Light-sport category that was previously shown under Sport Aircraft is moved under Experimental Aircraft category, starting in 2012.

Note: An active aircraft is one that has a current registration and was flown at least one hour during the calendar year.

TABLE 29

ACTIVE GENERAL AVIATION AND AIR TAXI HOURS FLOWN

(In Thousands)

	FIXED WING												TOTAL		
	PISTON			TURBINE									GENERAL		
CALENDAR	SINGLE	MULTI-		TURBO	TURBO		ROTORCRAFT			EXPERI-	SPORT		AVIATION	TOTAL	TOTAL
YEAR	ENGINE	ENGINE	TOTAL	PROP	JET	TOTAL	PISTON	TURBINE	TOTAL	MENTAL**	AIRCRAFT**	OTHER	HOURS	PISTONS	TURBINES
Historical*															
2001	16,549	2,644	19,193	1,773	2,654	4,427	474	1,478	1,952	1,157	N/A	287	27,016	19,667	5,905
2007	13,571	2,686	16,257	2,661	3,938	6,600	704	2,541	3,245	1,275	260	215	27,852	16,962	9,141
2008	12,746	2,328	15,074	2,457	3,600	6,057	751	2,470	3,222	1,155	293	209	26,009	15,825	8,527
2009	11,730	1,903	13,634	2,215	3,161	5,376	755	2,248	3,003	1,286	286	178	23,763	14,389	7,624
2010	12,161	1,818	13,979	2,325	3,375	5,700	794	2,611	3,405	1,226	311	181	24,802	14,773	8,311
2011E	11,844	1,782	13,626	2,463	3,407	5,870	757	2,654	3,411	1,203	278	181	24,570	14,383	8,524
2012	11,442	1,766	13,207	2,733	3,418	6,151	731	2,723	3,454	1,243	169	180	24,404	13,938	8,874
2013	10,706	1,646	12,352	2,587	3,488	6,076	636	2,312	2,949	1,191	173	135	22,876	12,989	8,388
2014E	10,602	1,627	12,228	2,582	3,599	6,181	689	2,463	3,152	1,178	187	133	23,060	12,917	8,644
Forecast															
2015	10,757	1,608	12,366	2,581	3,723	6,304	715	2,635	3,350	1,212	202	133	23,566	13,081	8,939
2016	10,524	1,588	12,112	2,585	3,874	6,458	738	2,780	3,518	1,251	218	133	23,689	12,850	9,238
2017	10,310	1,575	11,885	2,592	4,013	6,605	760	2,925	3,685	1,289	234	133	23,830	12,645	9,530
2018	10,115	1,560	11,675	2,597	4,163	6,760	780	3,033	3,813	1,330	250	132	23,961	12,455	9,792
2019	9,960	1,546	11,506	2,606	4,313	6,919	796	3,133	3,930	1,377	267	132	24,131	12,302	10,052
2020	9,847	1,537	11,384	2,618	4,475	7,094	815	3,232	4,047	1,416	283	132	24,355	12,198	10,326
2021	9,758	1,524	11,282	2,637	4,651	7,287	833	3,331	4,165	1,452	300	131	24,618	12,115	10,619
2022	9,688	1,516	11,205	2,662	4,836	7,498	851	3,429	4,280	1,489	317	131	24,919	12,056	10,927
2023	9,634	1,510	11,144	2,694	5,019	7,712	868	3,525	4,393	1,523	334	130	25,237	12,012	11,237
2024	9,575	1,501	11,076	2,736	5,192	7,928	886	3,615	4,501	1,558	351	130	25,545	11,962	11,543
2025	9,533	1,492	11,025	2,784	5,361	8,145	903	3,708	4,611	1,594	369	130	25,874	11,928	11,853
2026	9,486	1,489	10,975	2,843	5,534	8,376	921	3,801	4,722	1,627	386	130	26,215	11,895	12,177
2027	9,440	1,490	10,929	2,910	5,713	8,623	938	3,895	4,834	1,661	403	130	26,580	11,868	12,518
2028	9,410	1,489	10,898	2,984	5,900	8,884	957	3,990	4,947	1,694	420	130	26,974	11,855	12,875
2029	9,390	1,492	10,883	3,065	6,103	9,168	975	4,087	5,062	1,726	436	131	27,405	11,858	13,255
2030	9,375	1,498	10,872	3,152	6,322	9,474	994	4,186	5,180	1,759	453	130	27,869	11,866	13,660
2031	9,368	1,506	10,875	3,245	6,544	9,789	1,013	4,285	5,298	1,792	470	130	28,354	11,888	14,074
2032	9,358	1,520	10,878	3,344	6,775	10,119	1,033	4,386	5,419	1,826	486	130	28,858	11,911	14,505
2033	9,376	1,534	10,911	3,447	7,015	10,462	1,053	4,491	5,544	1,860	503	130	29,409	11,963	14,953
2034	9,411	1,551	10,962	3,555	7,257	10,811	1,073	4,609	5,683	1,894	519	130	29,999	12,035	15,421
2035	9,464	1,570	11,034	3,665	7,512	11,176	1,094	4,727	5,821	1,929	536	130	30,626	12,128	15,904
Avg Annual Growth															
2001-14	-3.4%	-3.7%	-3.4%	2.9%	2.4%	2.6%	2.9%	4.0%	3.8%	0.1%	N/A	-5.7%	-1.2%	-3.2%	3.0%
2014-15	1.5%	-1.1%	1.1%	0.0%	3.5%	2.0%	3.8%	7.0%	6.3%	2.8%	8.1%	-0.3%	2.2%	1.3%	3.4%
2014-24	-1.0%	-0.8%	-1.0%	0.6%	3.7%	2.5%	2.5%	3.9%	3.6%	2.8%	6.5%	-0.2%	1.0%	-0.8%	2.9%
2014-35	-0.5%	-0.2%	-0.5%	1.7%	3.6%	2.9%	2.2%	3.2%	3.0%	2.4%	5.1%	-0.1%	1.4%	-0.3%	2.9%

* Source: 2001-2010, 2012 and 2013, FAA General Aviation and Air Taxi Activity (and Avionics) Surveys.

**Experimental Light-sport category that was previously shown under Sport Aircraft is moved under Experimental Aircraft category, starting in 2012.

Note: An active aircraft is one that has a current registration and was flown at least one hour during the calendar year.

TABLE 30

ACTIVE PILOTS BY TYPE OF CERTIFICATE

AS OF DEC. 31	STUDENTS	RECREA-TIONAL	SPORT PILOT	PRIVATE	COMMERCIAL	AIRLINE TRANSPORT	ROTOR-CRAFT ONLY	GLIDER ONLY	TOTAL PILOTS	TOTAL LESS AT PILOTS	INSTRUMENT RATED PILOTS[1]
Historical*											
2001	94,420	316	N/A	243,823	120,502	144,702	7,727	8,473	619,963	475,261	315,276
2007	84,339	239	2,031	211,096	115,127	143,953	12,290	21,274	590,349	446,396	309,865
2008	80,989	252	2,623	222,596	124,746	146,838	14,647	21,055	613,746	466,908	325,247
2009	72,280	234	3,248	211,619	125,738	144,600	15,298	21,268	594,285	449,685	323,495
2010	119,119 [2]	212	3,682	202,020	123,705	142,198	15,377	21,275	627,588	485,390	318,001
2011	118,657	227	4,066	194,441	120,865	142,511	15,220	21,141	617,128	474,617	314,122
2012	119,946	218	4,493	188,001	116,400	145,590	15,126	20,802	610,576	464,986	311,952
2013	120,285	238	4,824	180,214	108,206	149,824	15,114	20,381	599,086	449,262	307,120
2014	120,546	220	5,157	174,883	104,322	152,933	15,511	19,927	593,499	440,566	306,066
Forecast											
2015	119,650	220	5,600	173,750	104,250	153,000	15,335	19,885	591,690	438,690	305,950
2016	119,650	220	6,000	174,100	104,800	153,200	15,320	19,900	593,190	439,990	306,500
2017	119,300	220	6,450	174,200	105,100	153,400	15,330	19,955	593,955	440,555	307,000
2018	119,000	220	6,850	173,500	105,400	153,600	15,495	19,905	593,970	440,370	307,250
2019	118,600	220	7,300	172,750	105,300	153,800	15,895	19,860	593,725	439,925	307,600
2020	118,250	220	7,700	171,950	105,550	154,300	16,440	19,815	594,225	439,925	308,000
2021	117,900	215	8,100	171,250	105,750	155,100	17,220	19,765	595,300	440,200	308,500
2022	117,500	215	8,550	170,650	106,050	156,000	17,975	19,715	596,655	440,655	309,050
2023	117,100	215	9,000	170,000	106,300	156,800	18,715	19,660	597,790	440,990	309,650
2024	116,650	215	9,450	169,300	106,650	157,400	19,500	19,605	598,770	441,370	310,200
2025	116,300	215	9,900	168,650	107,050	158,100	20,300	19,615	600,130	442,030	310,850
2026	115,950	210	10,350	168,100	107,450	158,900	21,020	19,605	601,585	442,685	311,600
2027	115,550	210	10,850	167,500	107,950	159,900	21,655	19,685	603,300	443,400	312,350
2028	115,150	210	11,350	166,950	108,450	160,800	22,200	19,720	604,830	444,030	313,100
2029	114,750	210	11,900	166,400	109,050	161,800	22,645	19,740	606,495	444,695	313,850
2030	114,350	210	12,450	165,900	109,700	162,900	23,010	19,730	608,250	445,350	314,700
2031	113,900	210	13,050	165,400	110,350	164,000	23,315	19,715	609,940	445,940	315,550
2032	113,450	210	13,650	164,800	111,050	165,100	23,570	19,700	611,530	446,430	316,350
2033	113,050	210	14,300	164,350	111,750	166,300	23,840	19,685	613,485	447,185	317,250
2034	112,600	210	14,950	163,950	112,550	167,400	24,125	19,665	615,450	448,050	318,150
2035	112,200	210	14,950	163,600	113,350	168,600	24,440	19,650	617,000	448,400	319,100
Avg Annual Growth											
2001-14	1.9%	-2.7%	N/A	-2.5%	-1.1%	0.4%	5.5%	6.8%	-0.3%	-0.6%	-0.2%
2014-15	-0.7%	0.0%	8.6%	-0.6%	-0.1%	0.0%	-1.1%	-0.2%	-0.3%	-0.4%	0.0%
2014-24	-0.3%	-0.2%	6.2%	-0.3%	0.2%	0.3%	2.3%	-0.2%	0.1%	0.0%	0.1%
2014-35	-0.3%	-0.2%	5.2%	-0.3%	0.4%	0.5%	2.2%	-0.1%	0.2%	0.1%	0.2%

* Source: FAA U.S. Civil Airmen Statistics.

[1]Instrument rated pilots should not be added to other categories in deriving total.

[2]In July 2010, the FAA issued a rule that increased the duration of validity for student pilot certificates for pilots under the age of 40 from 36 to 60 months. This resulted in the increase in active student pilots to 119,119 from 72,280 at the end of 2009.

Note: An active pilot is a person with a pilot certificate and a valid medical certificate.

TABLE 31

GENERAL AVIATION AIRCRAFT FUEL CONSUMPTION

(In Millions of Gallons)

	FIXED WING								TOTAL FUEL CONSUMED		
	PISTON		TURBINE		ROTORCRAFT		EXPERI-				
CALENDAR YEAR	SINGLE ENGINE	MULTI-ENGINE	TURBO-PROP	TURBO-JET	PISTON	TURBINE	MENTAL**/ OTHER	SPORT**	AVGAS	JET FUEL	TOTAL
Historical*											
2001	180.4	76.4	149.1	726.7	7.2	42.6	15.3	N/A	279.2	918.3	1,197.6
2007	157.6	83.0	205.2	1,148.0	9.3	132.4	22.6	1.2	273.6	1,485.6	1,759.2
2008	143.0	69.5	230.4	1,313.2	10.7	162.1	23.3	1.5	248.1	1,705.7	1,953.8
2009	132.3	57.1	208.7	1,104.6	10.7	133.6	25.8	1.4	227.4	1,447.0	1,674.4
2010	133.1	53.9	187.1	1,122.9	10.7	124.8	21.6	1.5	220.7	1,434.8	1,655.6
2011E	129.9	52.9	195.3	1,124.6	10.3	136.4	21.5	1.4	216.0	1,456.3	1,672.3
2012	125.8	53.9	208.8	1,077.2	10.2	148.9	15.7	0.8	206.4	1,434.9	1,641.3
2013	117.2	53.9	188.6	945.0	8.8	126.0	16.5	0.9	197.3	1,259.6	1,456.9
2014E	116.1	53.3	187.3	1,049.2	9.5	133.6	16.8	1.0	196.6	1,370.0	1,566.6
Forecast											
2015	117.5	52.7	185.3	1,080.0	9.9	142.2	17.2	1.0	198.3	1,407.5	1,605.8
2016	115.0	51.9	184.7	1,118.0	10.2	148.5	17.7	1.1	195.9	1,451.2	1,647.0
2017	112.5	51.4	184.3	1,152.6	10.5	155.5	18.2	1.2	193.8	1,492.3	1,686.1
2018	110.4	51.0	183.7	1,189.5	10.7	160.4	18.7	1.3	192.1	1,533.5	1,725.6
2019	108.7	50.5	184.3	1,226.3	11.0	165.7	19.3	1.3	190.8	1,576.3	1,767.2
2020	107.2	50.2	184.3	1,266.0	11.2	170.9	19.8	1.4	189.9	1,621.2	1,811.1
2021	106.3	49.6	184.6	1,302.5	11.4	174.4	20.1	1.5	188.9	1,661.6	1,850.5
2022	105.3	49.3	185.5	1,340.8	11.7	178.6	20.5	1.6	188.4	1,705.0	1,893.4
2023	104.7	49.1	186.8	1,377.6	11.9	182.7	21.0	1.7	188.4	1,747.1	1,935.4
2024	104.1	48.8	189.7	1,410.9	12.1	186.5	21.4	1.8	188.2	1,787.1	1,975.3
2025	103.4	48.4	192.1	1,442.3	12.4	191.2	21.8	1.8	187.9	1,825.6	2,013.5
2026	102.7	48.2	194.1	1,473.9	12.6	194.1	22.0	1.9	187.5	1,862.1	2,049.5
2027	102.0	48.3	198.2	1,506.3	12.8	197.9	22.5	2.0	187.5	1,902.4	2,089.9
2028	101.5	48.0	203.0	1,540.3	13.0	201.7	22.9	2.1	187.5	1,945.0	2,132.4
2029	101.1	48.1	207.4	1,577.2	13.3	206.6	23.3	2.2	187.9	1,991.3	2,179.2
2030	100.6	48.3	212.7	1,617.4	13.6	209.5	23.7	2.2	188.4	2,039.6	2,228.0
2031	100.2	48.6	218.3	1,657.6	13.8	214.4	24.1	2.3	189.1	2,090.3	2,279.4
2032	99.8	49.0	224.3	1,698.9	14.1	219.5	24.5	2.4	189.9	2,142.7	2,332.5
2033	99.6	49.5	230.0	1,741.6	14.4	224.7	25.0	2.5	190.9	2,196.3	2,387.2
2034	99.6	50.0	236.1	1,783.4	14.6	230.7	25.4	2.6	192.2	2,250.1	2,442.3
2035	99.7	50.6	242.2	1,827.7	14.9	236.6	25.8	2.7	193.8	2,306.4	2,500.2
Avg Annual Growth											
2001-14	-3.3%	-2.7%	1.8%	2.9%	2.2%	9.2%	0.7%	N/A	-2.7%	3.1%	2.1%
2014-15	1.3%	-1.1%	-1.0%	2.9%	3.6%	6.4%	2.5%	8.1%	0.9%	2.7%	2.5%
2014-24	-1.1%	-0.9%	0.1%	3.0%	2.4%	3.4%	2.5%	6.3%	-0.4%	2.7%	2.3%
2014-35	-0.7%	-0.2%	1.2%	2.7%	2.2%	2.8%	2.1%	5.0%	-0.1%	2.5%	2.3%

*Source: FAA APO Estimates.

**Experimental Light-sport category that was previously shown under Sport Aircraft is moved under Experimental Aircraft category, starting in 2012.

Note: Detail may not add to total because of independent rounding.

TABLE 32

TOTAL COMBINED AIRCRAFT OPERATIONS AT AIRPORTS

WITH FAA AND CONTRACT TRAFFIC CONTROL SERVICE

(In Thousands)

FISCAL	AIR	AIR TAXI/	GENERAL AVIATION			MILITARY				NUMBER OF TOWERS	
YEAR	CARRIER	COMMUTER	ITINERANT	LOCAL	TOTAL	ITINERANT	LOCAL	TOTAL	TOTAL	FAA	CONTRACT
Historical											
2001	14,762.7	10,882.2	21,432.9	16,193.6	37,626.5	1,479.5	1,437.5	2,917.0	66,188.4	266	206
2007	13,611.2	11,667.3	18,575.2	14,556.8	33,132.0	1,313.9	1,405.7	2,719.5	61,130.0	264	235
2008	13,780.1	11,032.1	17,492.7	14,081.2	31,573.8	1,285.0	1,245.6	2,530.6	58,916.6	264	239
2009	12,836.4	9,520.8	15,571.1	12,448.0	28,019.0	1,305.2	1,280.4	2,585.5	52,961.7	264	244
2010	12,657.6	9,410.4	14,863.9	11,716.3	26,580.1	1,309.0	1,297.9	2,606.9	51,255.0	264	244
2011	12,866.0	9,278.5	14,527.9	11,437.0	25,964.9	1,319.0	1,311.3	2,630.3	50,739.8	264	248
2012	12,872.9	8,994.4	14,521.7	11,608.3	26,130.0	1,308.9	1,269.9	2,578.8	50,576.0	264	250
2013	12,776.0	8,803.4	14,177.4	11,748.3	25,925.7	1,275.1	1,276.4	2,551.6	50,056.7	264	252
2014E	13,014.9	8,439.3	13,977.5	11,674.1	25,651.6	1,269.8	1,245.4	2,515.2	49,620.9	264	252
Forecast											
2015	13,558.2	8,026.2	13,931.8	11,807.5	25,739.3	1,269.8	1,245.4	2,515.2	49,838.8	264	252
2016	14,062.9	7,965.8	13,986.4	11,854.8	25,841.2	1,269.8	1,245.4	2,515.1	50,385.0	264	252
2017	14,610.6	7,865.4	14,041.5	11,902.5	25,943.9	1,269.8	1,245.4	2,515.1	50,935.1	264	252
2018	15,210.1	7,648.1	14,097.0	11,950.6	26,047.6	1,269.8	1,245.4	2,515.1	51,420.9	264	252
2019	15,836.2	7,373.8	14,153.0	11,999.1	26,152.1	1,269.7	1,245.4	2,515.1	51,877.2	264	252
2020	16,468.9	7,075.7	14,209.5	12,048.0	26,257.5	1,269.7	1,245.4	2,515.1	52,317.2	264	252
2021	17,113.3	6,691.5	14,266.5	12,097.3	26,363.8	1,269.7	1,245.4	2,515.1	52,683.7	264	252
2022	17,837.2	6,191.9	14,324.0	12,147.1	26,471.0	1,269.7	1,245.4	2,515.1	53,015.2	264	252
2023	18,444.3	5,874.1	14,381.9	12,197.2	26,579.2	1,269.7	1,245.4	2,515.1	53,412.6	264	252
2024	18,843.8	5,859.2	14,440.4	12,247.8	26,688.2	1,269.7	1,245.4	2,515.0	53,906.3	264	252
2025	19,180.3	5,918.5	14,499.4	12,298.9	26,798.2	1,269.7	1,245.4	2,515.0	54,412.0	264	252
2026	19,514.2	5,978.3	14,558.8	12,350.4	26,909.2	1,269.7	1,245.4	2,515.0	54,916.7	264	252
2027	19,860.9	6,040.5	14,618.8	12,402.3	27,021.2	1,269.6	1,245.4	2,515.0	55,437.6	264	252
2028	20,216.6	6,103.8	14,679.3	12,454.7	27,134.1	1,269.6	1,245.4	2,515.0	55,969.5	264	252
2029	20,582.4	6,168.1	14,740.4	12,507.6	27,248.0	1,269.6	1,245.4	2,515.0	56,513.5	264	252
2030	20,962.0	6,234.1	14,802.0	12,560.9	27,363.0	1,269.6	1,245.4	2,515.0	57,074.0	264	252
2031	21,340.5	6,300.7	14,864.2	12,614.7	27,478.9	1,269.6	1,245.4	2,515.0	57,635.0	264	252
2032	21,720.9	6,368.8	14,926.9	12,669.0	27,595.9	1,269.6	1,245.4	2,515.0	58,200.5	264	252
2033	22,108.0	6,438.1	14,990.2	12,723.8	27,713.9	1,269.6	1,245.4	2,515.0	58,775.0	264	252
2034	22,495.6	6,508.4	15,054.0	12,779.0	27,833.0	1,269.6	1,245.4	2,514.9	59,351.9	264	252
2035	22,886.6	6,580.2	15,118.4	12,834.8	27,953.2	1,269.6	1,245.4	2,514.9	59,934.9	264	252
Avg Annual Growth											
2001-14	-1.0%	-1.9%	-3.2%	-2.5%	-2.9%	-1.2%	-1.1%	-1.1%	-2.2%		
2014-15	4.2%	-4.9%	-0.3%	1.1%	0.3%	0.0%	0.0%	0.0%	0.4%		
2014-24	3.8%	-3.6%	0.3%	0.5%	0.4%	0.0%	0.0%	0.0%	0.8%		
2014-35	2.7%	-1.2%	0.4%	0.5%	0.4%	0.0%	0.0%	0.0%	0.9%		

Source: FAA Air Traffic Activity.

TABLE 33

TOTAL TRACON OPERATIONS
(In Thousands)

FISCAL YEAR	AIR CARRIER	AIR TAXI/ COMMUTER	GENERAL AVIATION	MILITARY	TOTAL
Historical					
2001	15,879.1	11,307.8	19,269.6	3,464.9	49,921.3
2007	14,366.0	11,675.8	16,747.4	2,498.7	45,288.0
2008	14,443.0	11,048.3	15,763.0	2,399.5	43,653.8
2009	13,302.3	9,622.8	14,151.1	2,398.8	39,474.9
2010	13,174.3	9,511.3	13,863.6	2,437.5	38,986.7
2011	13,068.0	9,349.4	13,503.1	2,374.6	38,295.2
2012	13,045.1	8,977.0	13,423.6	2,332.2	37,778.0
2013	12,913.6	8,797.5	13,047.7	2,225.2	36,983.9
2014E	13,186.2	8,389.8	13,017.6	2,229.4	36,822.9
Forecast					
2015	13,728.9	7,938.6	12,939.6	2,229.3	36,836.5
2016	14,234.7	7,868.4	13,020.8	2,229.3	37,353.2
2017	14,783.9	7,753.7	13,102.3	2,229.3	37,869.2
2018	15,384.0	7,508.2	13,177.4	2,229.2	38,298.7
2019	16,010.2	7,198.9	13,249.6	2,229.2	38,687.9
2020	16,642.9	6,862.2	13,320.4	2,229.2	39,054.6
2021	17,286.2	6,428.8	13,384.2	2,229.2	39,328.4
2022	18,008.5	5,867.7	13,444.3	2,229.1	39,549.6
2023	18,615.2	5,508.0	13,512.0	2,229.1	39,864.4
2024	19,016.4	5,484.5	13,591.1	2,229.1	40,321.1
2025	19,354.8	5,542.8	13,672.2	2,229.0	40,798.9
2026	19,690.5	5,601.5	13,753.5	2,229.0	41,274.6
2027	20,039.3	5,663.1	13,836.6	2,229.0	41,768.0
2028	20,397.0	5,726.2	13,920.9	2,229.0	42,273.1
2029	20,765.0	5,790.4	14,006.6	2,228.9	42,790.9
2030	21,146.9	5,856.6	14,094.0	2,228.9	43,326.4
2031	21,527.6	5,923.4	14,181.7	2,228.9	43,861.7
2032	21,910.4	5,991.5	14,270.2	2,228.8	44,400.9
2033	22,300.0	6,060.8	14,359.7	2,228.8	44,949.4
2034	22,689.9	6,130.3	14,449.7	2,228.8	45,498.6
2035	23,083.3	6,200.7	14,540.5	2,228.8	46,053.3
Avg Annual Growth					
2001-14	-1.4%	-2.3%	-3.0%	-3.3%	-2.3%
2014-15	4.1%	-5.4%	-0.6%	0.0%	0.0%
2014-24	3.7%	-4.2%	0.4%	0.0%	0.9%
2014-35	2.7%	-1.4%	0.5%	0.0%	1.1%

Source: FAA Air Traffic Activity.

TABLE 34

IFR AIRCRAFT HANDLED

AT FAA EN ROUTE TRAFFIC CONTROL CENTERS

(In Thousands)

	IFR AIRCRAFT HANDLED				
FISCAL YEAR	AIR CARRIER	AIR TAXI/ COMMUTER	GENERAL AVIATION	MILITARY	TOTAL
Historical					
2001	24,866	8,303	8,025	4,039	45,232
2007	25,006	9,653	8,294	3,803	46,757
2008	23,895	10,179	7,671	3,649	45,394
2009	22,407	8,562	6,332	2,993	40,293
2010	22,342	8,624	6,550	2,982	40,498
2011	23,432	9,010	6,557	2,228	41,227
2012	23,651	8,932	6,472	1,860	40,915
2013	23,205	8,673	6,440	1,676	39,994
2014E	24,267	8,507	6,741	1,830	41,346
Forecast					
2015	24,689	8,477	6,851	1,830	41,847
2016	25,329	8,535	6,962	1,830	42,656
2017	25,988	8,591	7,058	1,830	43,466
2018	26,596	8,619	7,135	1,830	44,180
2019	27,173	8,639	7,197	1,830	44,839
2020	27,733	8,651	7,249	1,830	45,463
2021	28,200	8,658	7,279	1,830	45,966
2022	28,615	8,655	7,291	1,830	46,390
2023	29,092	8,673	7,316	1,830	46,910
2024	29,665	8,733	7,365	1,830	47,593
2025	30,248	8,811	7,417	1,830	48,306
2026	30,829	8,892	7,469	1,830	49,020
2027	31,428	8,976	7,523	1,830	49,756
2028	32,040	9,060	7,578	1,830	50,508
2029	32,668	9,145	7,634	1,830	51,276
2030	33,310	9,235	7,693	1,830	52,068
2031	33,955	9,326	7,752	1,830	52,863
2032	34,608	9,419	7,811	1,830	53,667
2033	35,271	9,514	7,870	1,830	54,485
2034	35,939	9,607	7,930	1,830	55,305
2035	36,614	9,701	7,989	1,830	56,134
Avg Annual Growth					
2001-14	-0.2%	0.2%	-1.3%	-5.9%	-0.7%
2014-15	1.7%	-0.4%	1.6%	0.0%	1.2%
2014-24	2.0%	0.3%	0.9%	0.0%	1.4%
2014-35	2.0%	0.6%	0.8%	0.0%	1.5%

Source: FAA Air Traffic Activity