Airlines for America®

We Connect the World

# Industry Review: Allocating Capital to Benefit Customers, Employees and Investors

Updated February 13, 2020

http://airlines.org/dataset/a4a-presentation-industry-review-and-outlook/
http://airlines.org/blog/the-nature-and-status-of-u-s-airline-competition-beyond-the-80-percent-rhetoric/
https://atwonline.com/aeropolitics/op-ed-how-lower-aviation-fuel-taxes-boost-local-economies

# “This is probably the best time in modern history in which to fly.”

Michael Taylor, Sr. Director, Travel & Hospitality Intelligence, J.D. Power (May 29, 2019)

Source: https://www.usatoday.com/story/travel/flights/2019/05/29/j-d-powers-best-airlines-customer-satisfaction-2019-southwest-jetblue-alaska/1256499001/

# U.S. Airlines* Facilitate the Safe and Rapid Movement of People and Goods Worldwide

## U.S. Passenger and Cargo Airlines Connect the World

~ 750,000
**direct employees**

Powering
28,000 **flights**
per day across
the globe

Carrying 2.4M
**passengers**
per day to/from
nearly 80
countries

Moving 58,000
tons of **cargo**
per day to/from
more than 220
countries

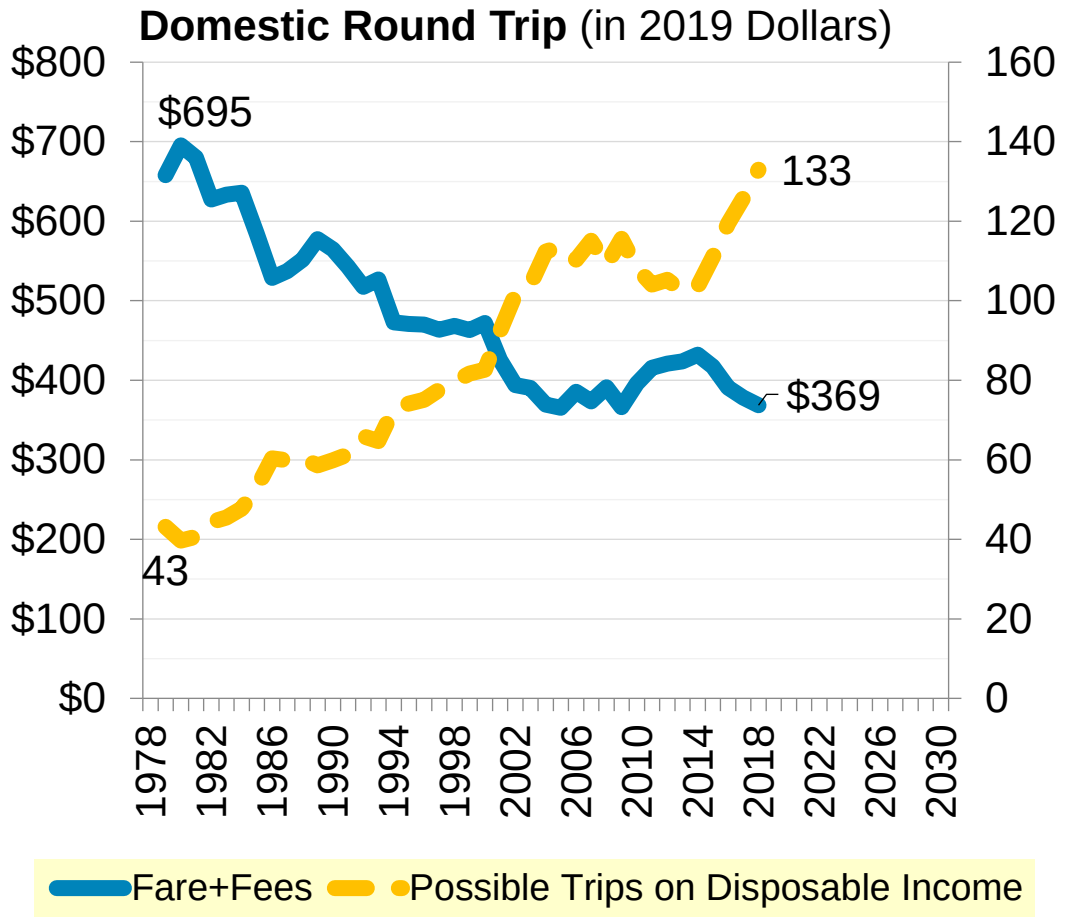
Source: A4A, Bureau of Transportation Statistics, Diio by Cirium and company literature

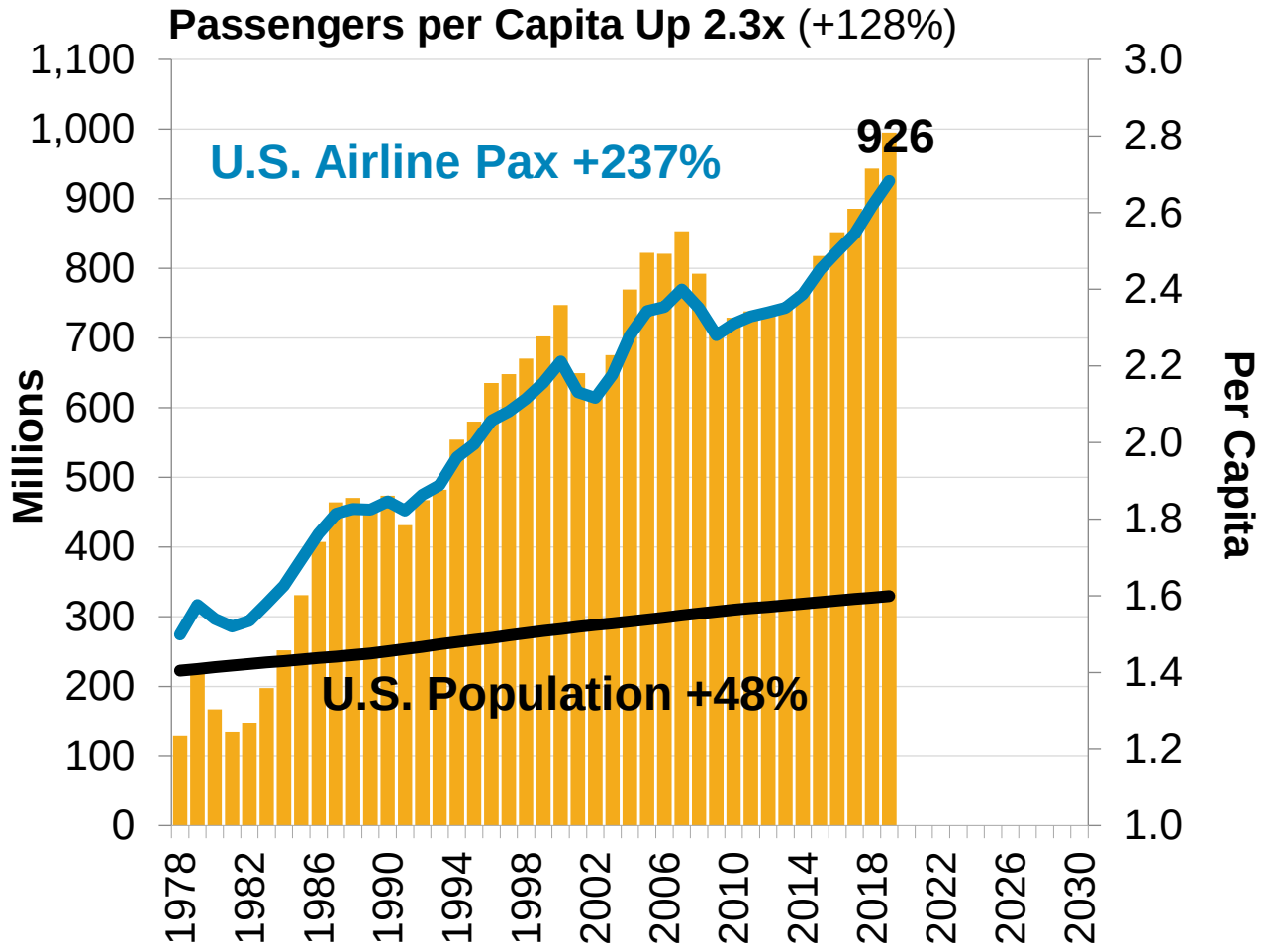
* Includes passenger/combination and cargo-only carriers

# Contents

# As Real Airfares Have Plunged, Growth in Flyers = 4.9x Growth in U.S. Population

## Ancillary Services Included, 2018 Domestic Air Travel Was ~44% Cheaper Than in 1980

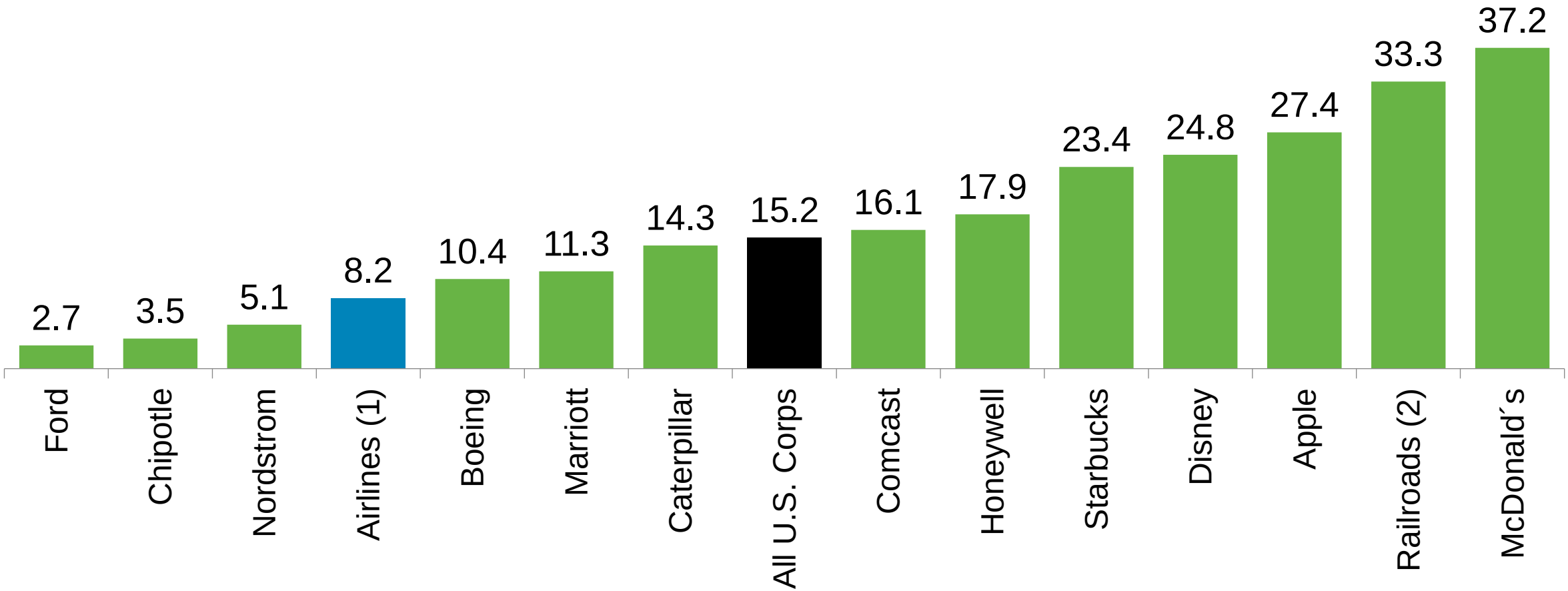



Source: Bureau of Economic Analysis, Bureau of Labor Statistics and Bureau of Transportation Statistics (DB1B via Airline Data Inc. and T1 scheduled service for U.S. airlines)

# In 2018, U.S. Airline* Profitability Was a Little Over Half the U.S. Average

## Pre-Tax Profit Margin (% of Operating Revenues)

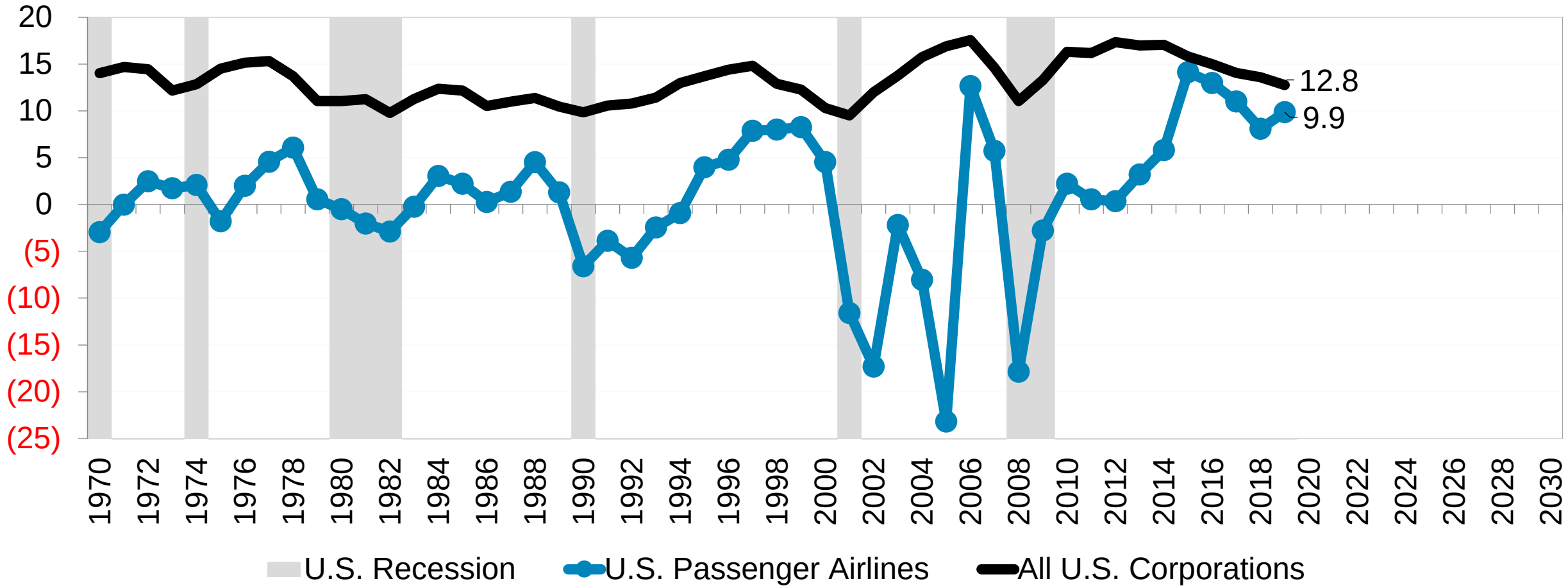



Source: Company SEC filings

[1] Alaska, Allegiant, American, Delta, Hawaiian, JetBlue, Southwest, Spirit and United
[2] CSX, Norfolk Southern and Union Pacific

# Even in Best Years, the Profitability of U.S. Airlines Lags the U.S. Corporate Average

## Pre-Tax Profit Margin (%) *Gap Widened* in 2016-2018, But Narrowed in 2019

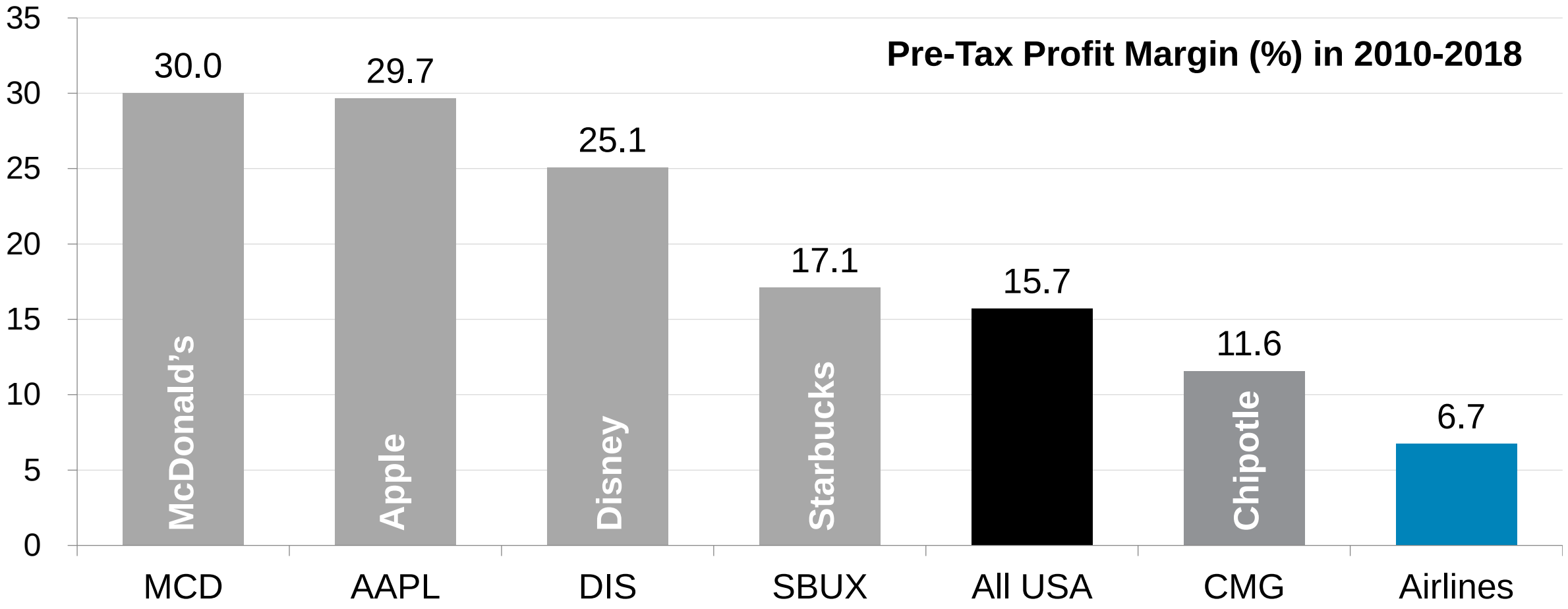



Source: ATA Annual Reports (1970-1976), A4A Passenger Airline Cost Index (1977-present); Bureau of Economic Analysis

Note: Recessions highlighted in gray

# U.S. Airlines Continue to Strive for Solid Profitability Across the Business Cycle

## In Current U.S. Business Cycle, Airline Margins Are Less Than Half the U.S. Average

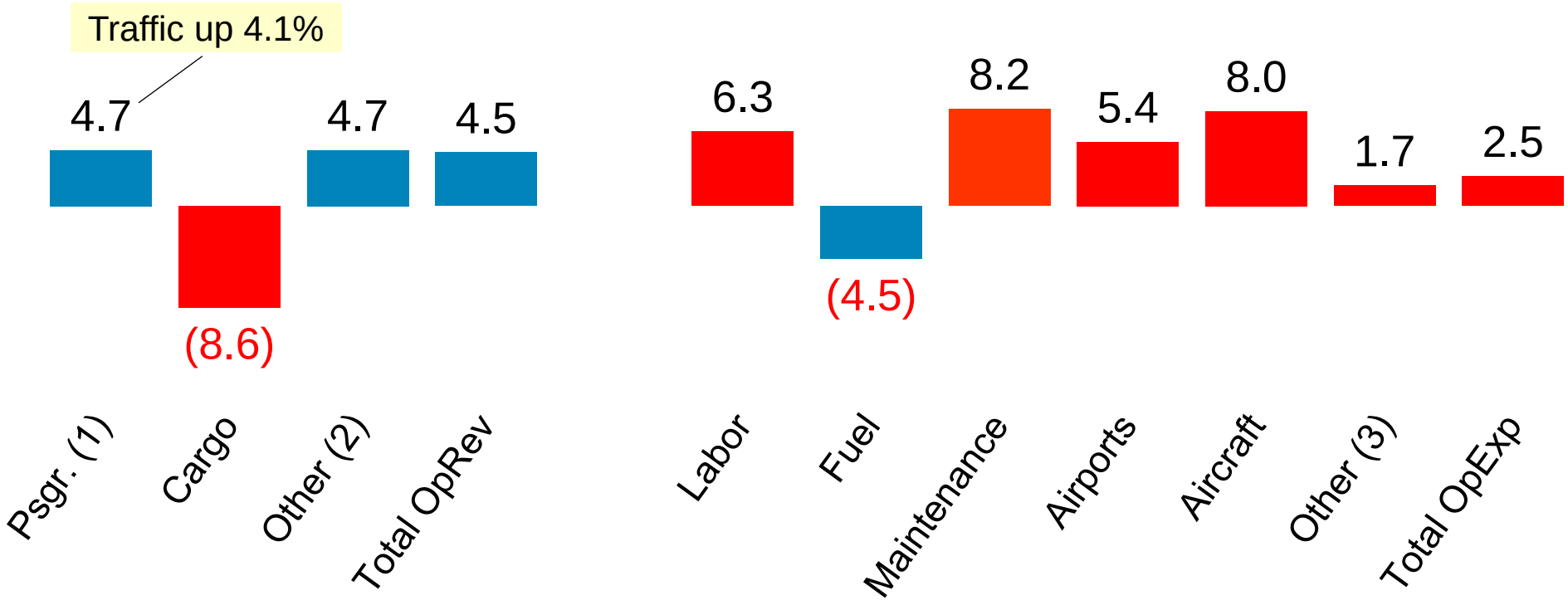



Sources: U.S. Bureau of Economic Analysis, A4A Passenger Airline Cost Index and company SEC filings

# In 2019, U.S. Airlines Saw Average Profit Margin Rise 1.7 Points

## Strong Travel Demand Helped Offset Cargo Weakness and Continued Cost Pressure

**Change (%) in Operating *Revenues* and *Expenses*:** 2019 vs. 2018

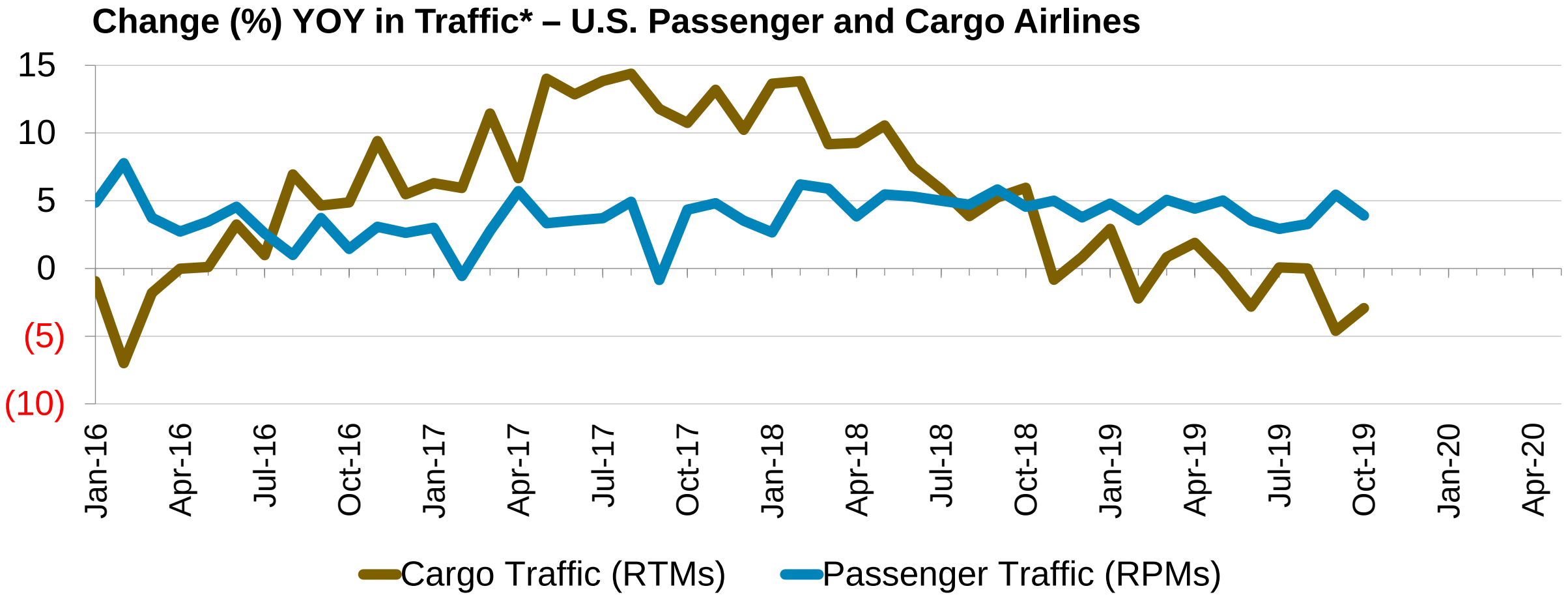



**Pre-Tax Profit Margin (%)**


1. Traffic = revenue passenger miles; yield = revenue per passenger-mile flown; U.S. CPI up 1.8 percent
2. Sale of frequent flyer award miles to airline business partners, transportation of pets, in-sourced aircraft and engine repair, flight simulator rentals, inflight sales, etc.
3. Aircraft rents, professional fees, food/beverage, insurance, commissions, GDS fees, communications, advertising, utilities, office supplies, crew hotels, payments to regionals

Source: A4A analysis of reports by Alaska, Allegiant, American, Delta, Hawaiian, JetBlue, Southwest, Spirit and United

# U.S. Airline Passenger Traffic Holding Steady, But Air Cargo Volumes Have Weakened

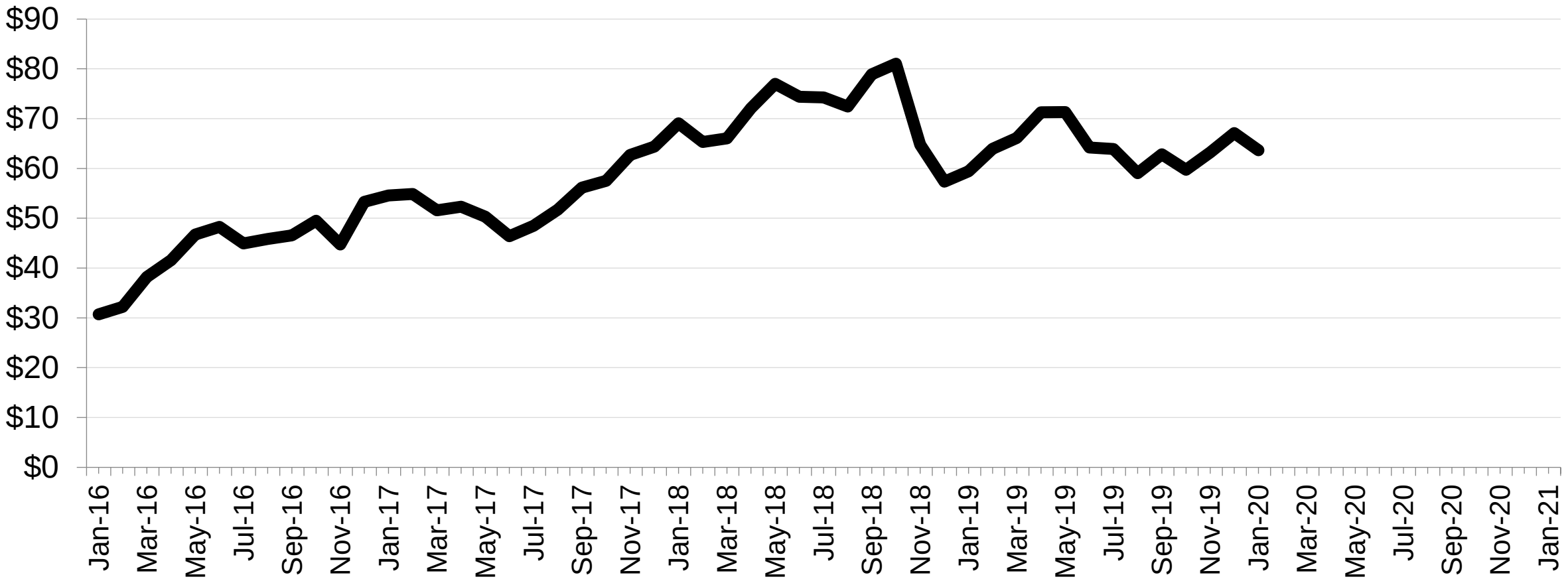



Sources: Bureau of Transportation Statistics T1 all services

* RTMs = freight, mail and express revenue ton miles; RPMs = revenue passenger miles

# World Crude-Oil Prices Averaged $64 in 2019 – Below 2018 But $10 Higher Than 2017

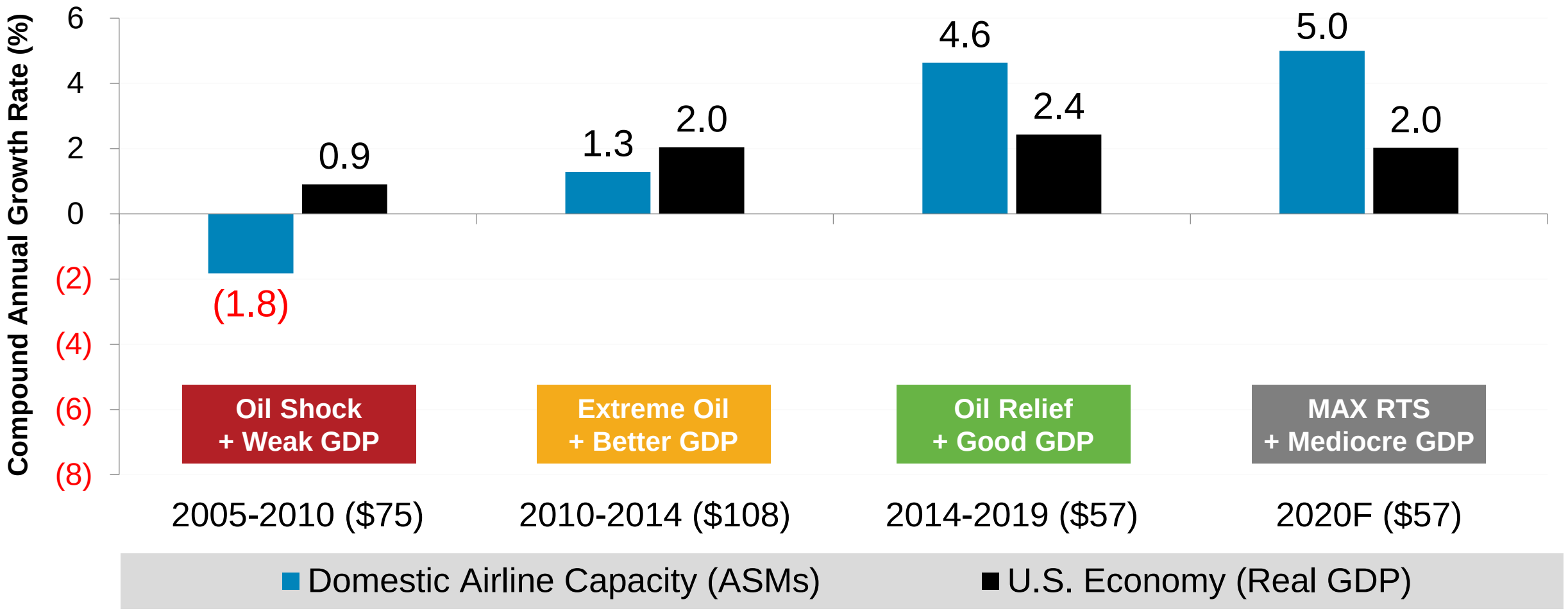
## Spot Price of Brent Crude Oil ($ per Barrel)




Sources: A4A and Energy Information Administration (http://www.eia.gov/dnav/pet/pet_pri_spt_s1_d.htm)

# For U.S. Airlines, the Price of Oil* Is a Huge Determinant of Capacity Growth

## When Fuel Costs Decline and Finances Improve, Growth Accelerates

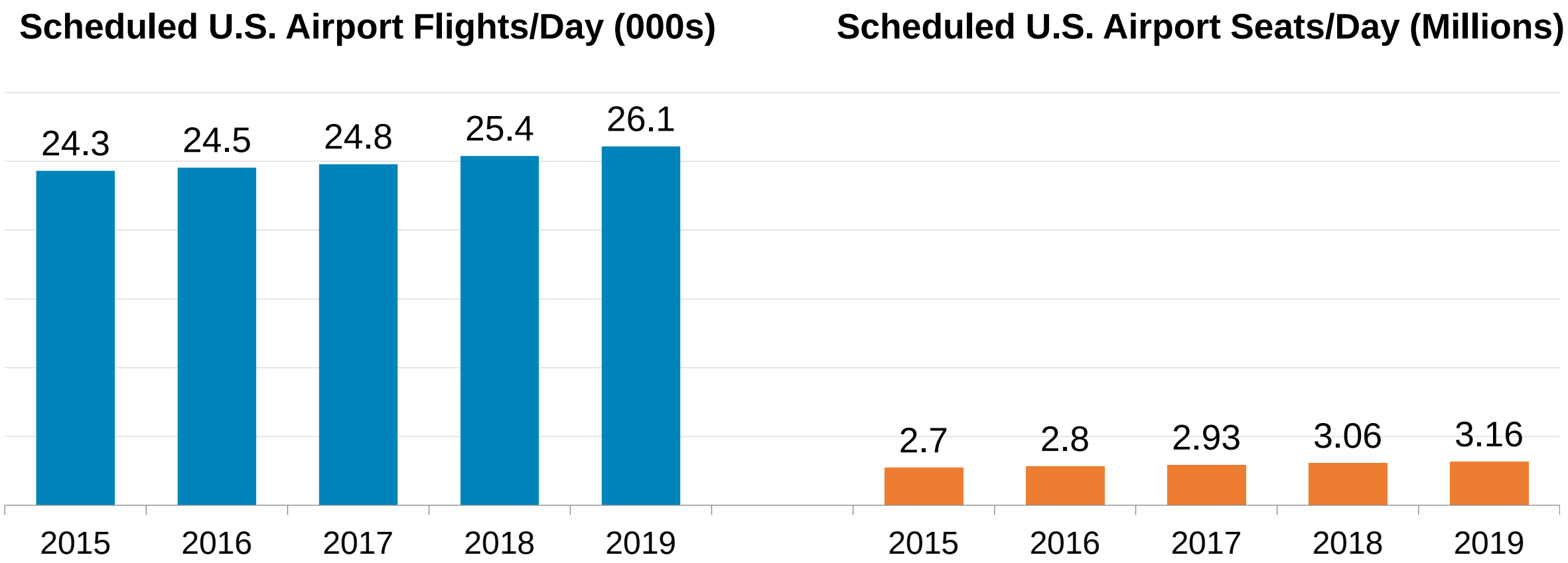



Source: Bureau of Economic Analysis, EIA, IHS Markit and published airline schedules via Diio by Cirium as of Jan. 10, 2020

* Brent crude oil in dollars per barrel, shown next to each time period

# In 2019, U.S. and Foreign Airlines Offered a Record 3.16M Daily Seats From U.S. Airports

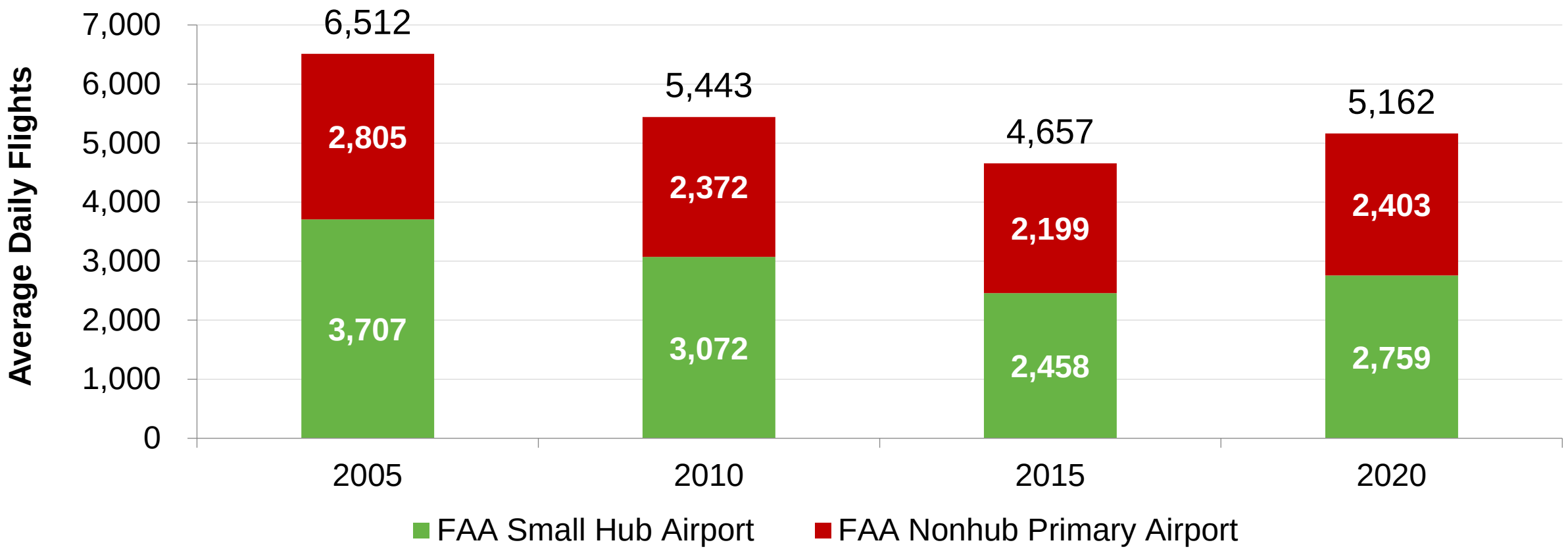
## In 2019, 2.7 Percent YOY Growth in Flights Helped Drive 3.5 Percent Growth in Seats




Sources: Diio by Cirium published schedules as of Jan. 17, 2020, for all U.S. and non-U.S. airlines

# Scheduled Flights From Small Community U.S. Airports* Up 11 Percent From 2015 to 2020

## Flights Up 12 Percent at “Small Hub” Airports and 9 Percent at “Nonhub” Airports



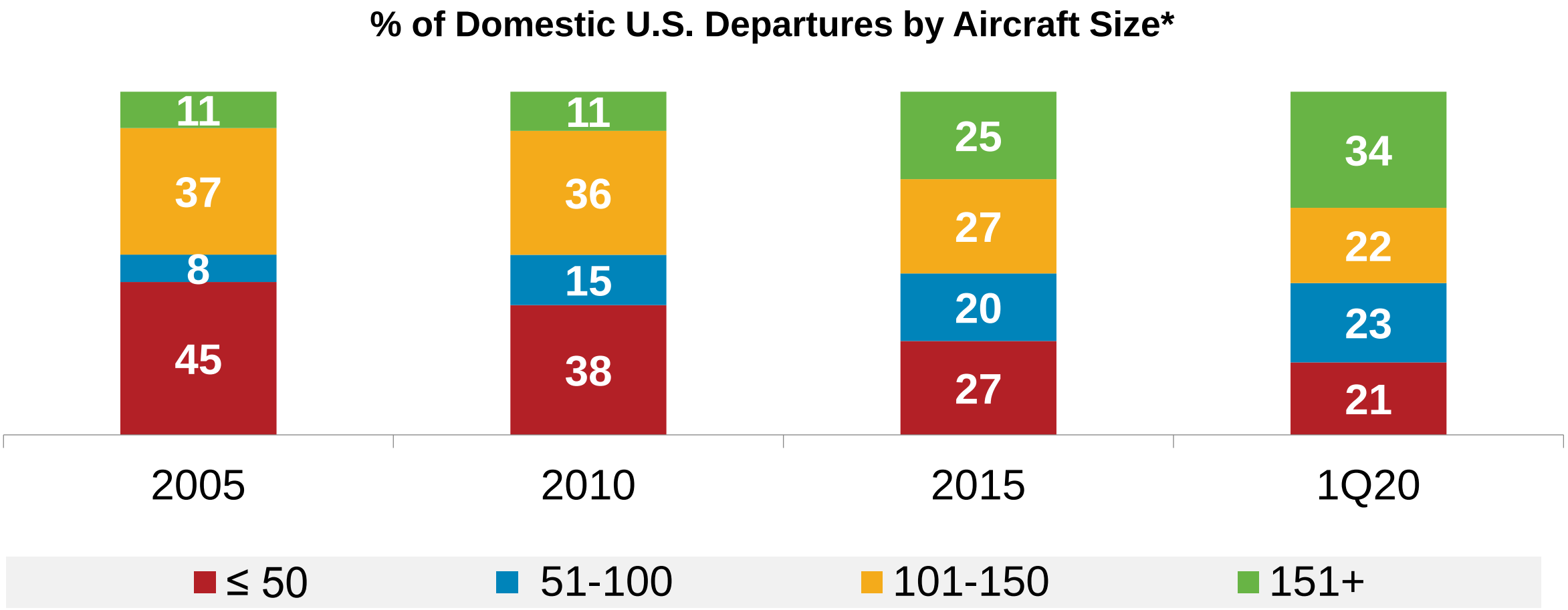

Notes: Recession (Dec-2007–Jun-2009); FAA pilot qualification (1,500-hour) rule effective Jul-2013; pilot flight/duty/rest rule effective Jan-2014

* Per https://www.faa.gov/airports/planning_capacity/passenger_allcargo_stats/categories/, U.S. airports with less than 0.25% of annual passenger boardings

Sources: Diio by Cirium published schedules as of Jan. 10, 2020, for all airlines providing scheduled passenger service from U.S. airports to all destinations

# Airlines Are Deploying Larger Aircraft, and Mainline-Only Carriers Are Growing

## Regionals Now Just 44% of Domestic Departures; Over Half of Those are Large RJs

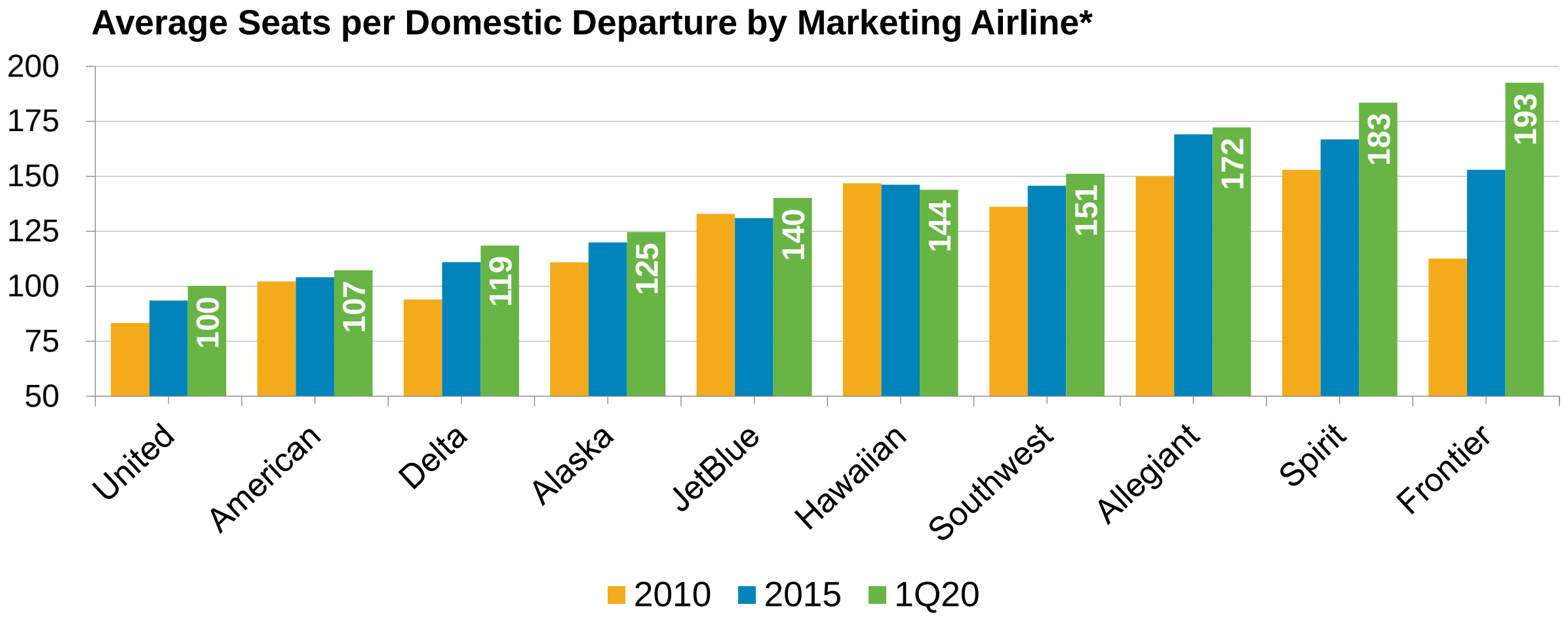



Source: Diio by Cirium published schedules as of Jan 3, 2020

* Numbers may not add to 100 due to rounding

# Almost All U.S. Airlines Have Migrated to Larger Aircraft Domestically

## Ultra Low-Cost Carriers Operate the Most Seats per Domestic Flight

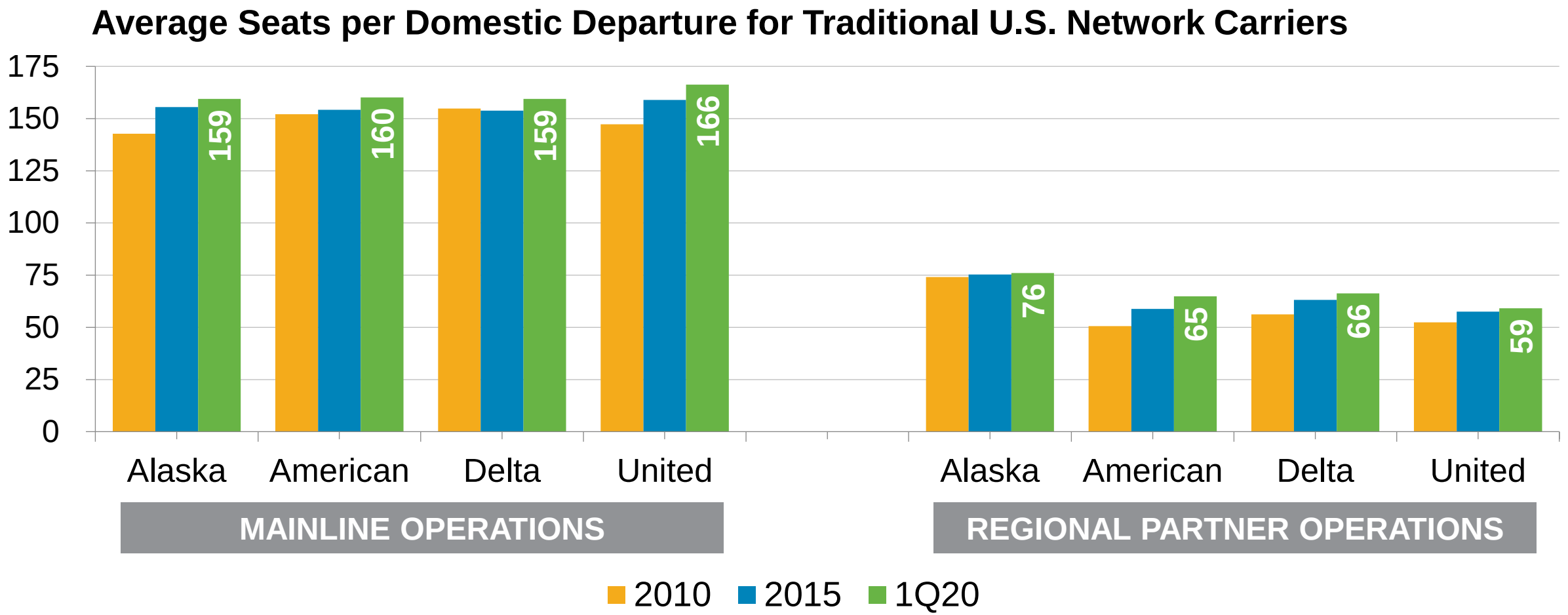



Source: Diio by Cirium schedules as of Dec. 6, 2019, for selected marketing airlines

* Includes flights operated by regional/express airline partners

# Domestically, Traditional U.S. Network Carriers Fly Similarly Sized Mainline Equipment

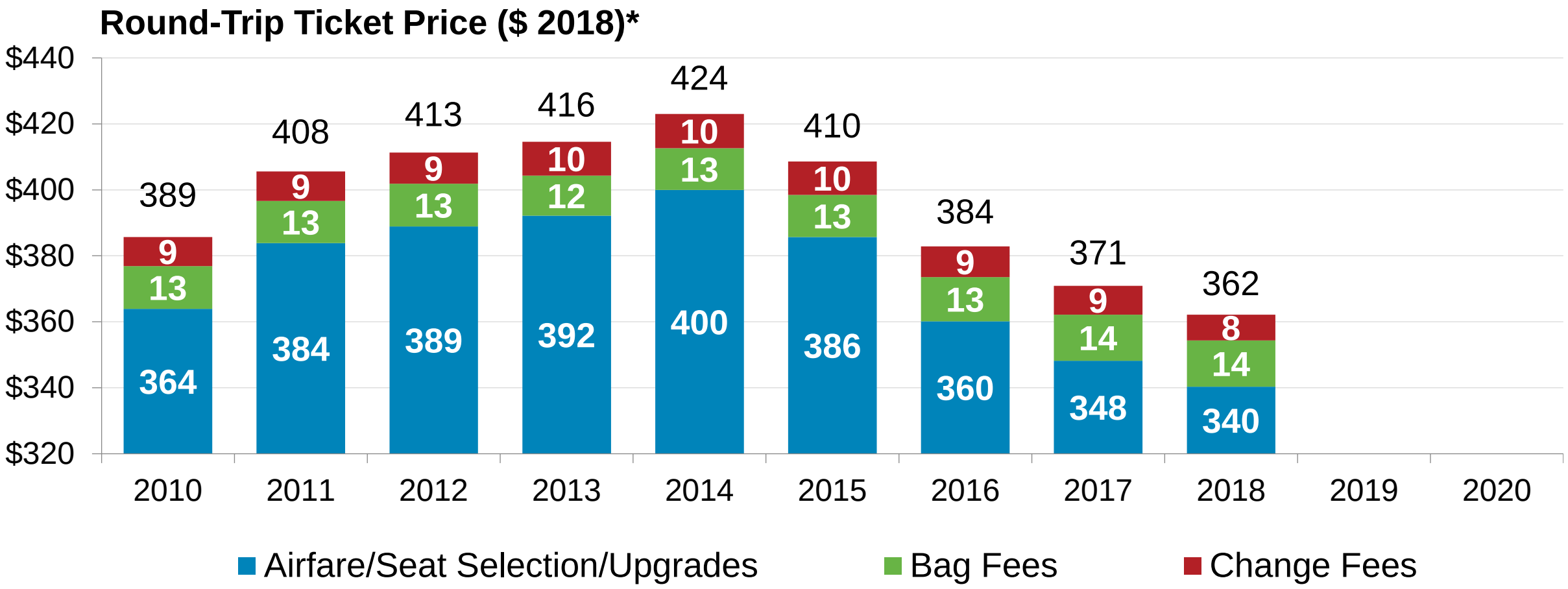
## Aircraft Size Varies More Widely Across Their Regional/Express Partners




Source: Diio by Cirium schedules as of Dec. 6, 2019

# In 2018, Inflation-Adjusted Domestic Fares/Fees Fell for Fourth Consecutive Year

## From 2010-2018, the Real Price* of Domestic Air Travel – Including Ancillaries – Fell 6.9 Percent

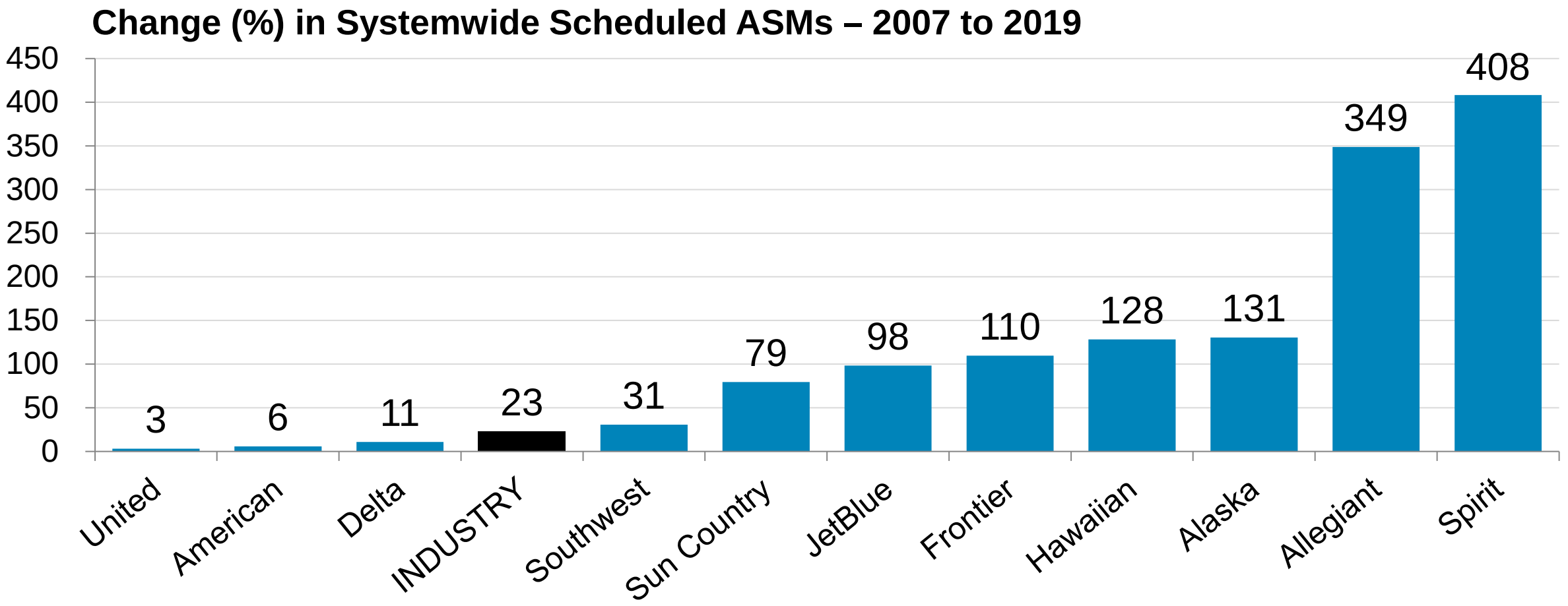



Source: A4A analysis of DOT Data Bank 1B (all cabins and fare basis codes) and DOT Form 41 via Airline Data Inc. (airlinedata.com)

* Excludes taxes; CPI rose 2.4% YOY

# Among 11 U.S. Airline Brands, Smaller Carriers Have Been Growing the Fastest

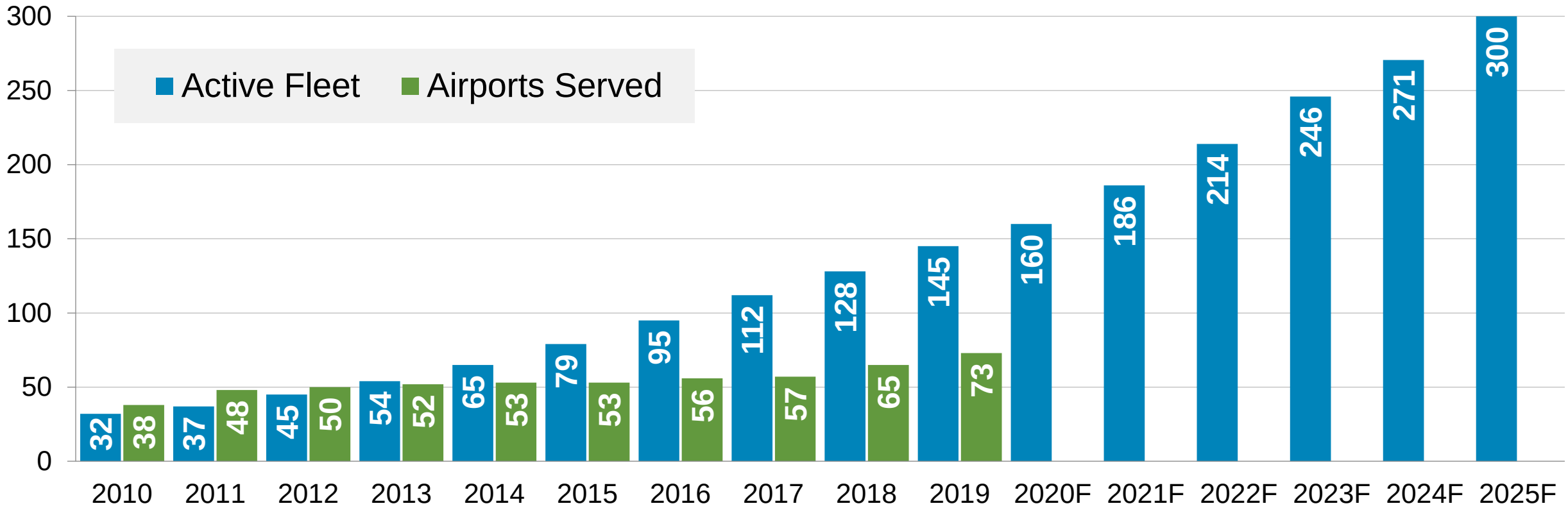
## From 2007 to 2019, Allegiant and Spirit Grew 4X and 5X, Respectively




Source: Diio by Cirium schedules as of Jan. 17, 2020, for selected marketing airlines including predecessors

# Spirit Airlines Will Continue to Be the Fastest Growing U.S. Carrier for the Foreseeable Future

## The Company Is Targeting a Fleet of 300 Aircraft by the End of 2025



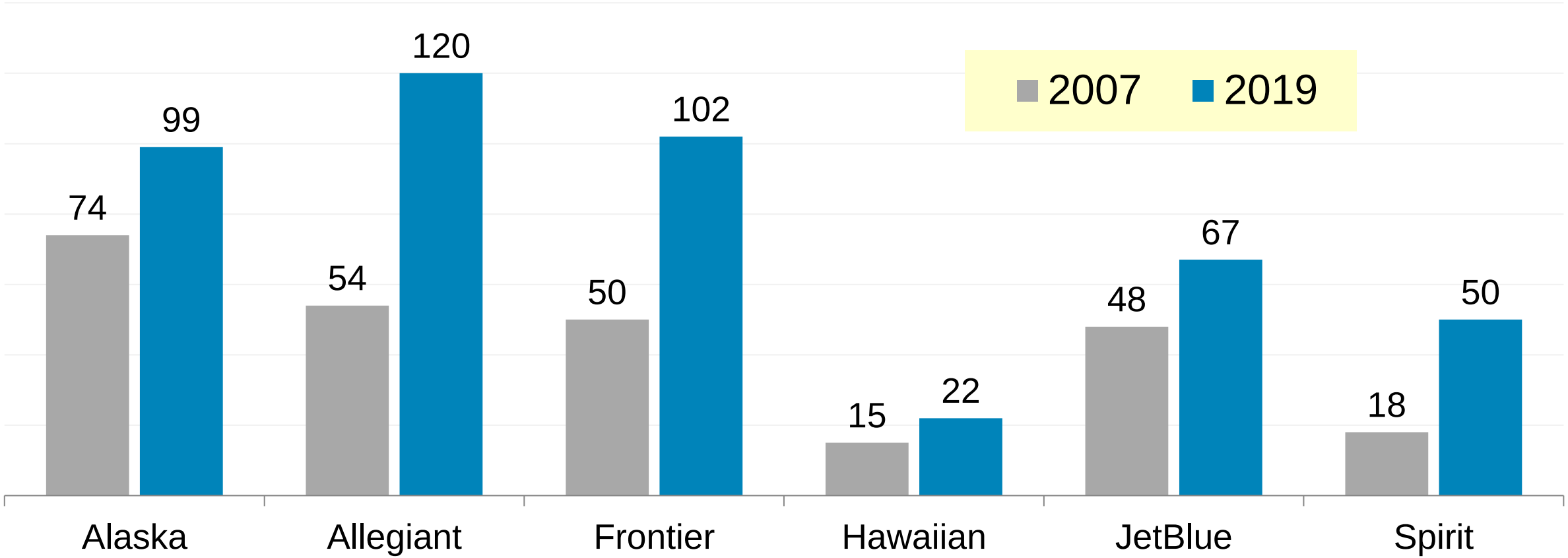

**On October 23, 2019, Spirit announced an MOU with Airbus for the purchase of 100 A320 family (A319neo/A320neo/A321neo) aircraft (plus 50 options) for delivery through 2027.**

Source: Year-end active fleet data from Spirit Airlines as of Feb. 5, 2020 plus A4A estimates for 2022-2024; airports served in December from Diio by Cirium as of Nov. 15, 2019

# Smaller U.S. Carriers Are Serving More and More Domestic Markets

## Competitive Presence of Low-Cost and Ultra Low-Cost Carriers Continues to Expand

### Number of U.S. Airports Served*



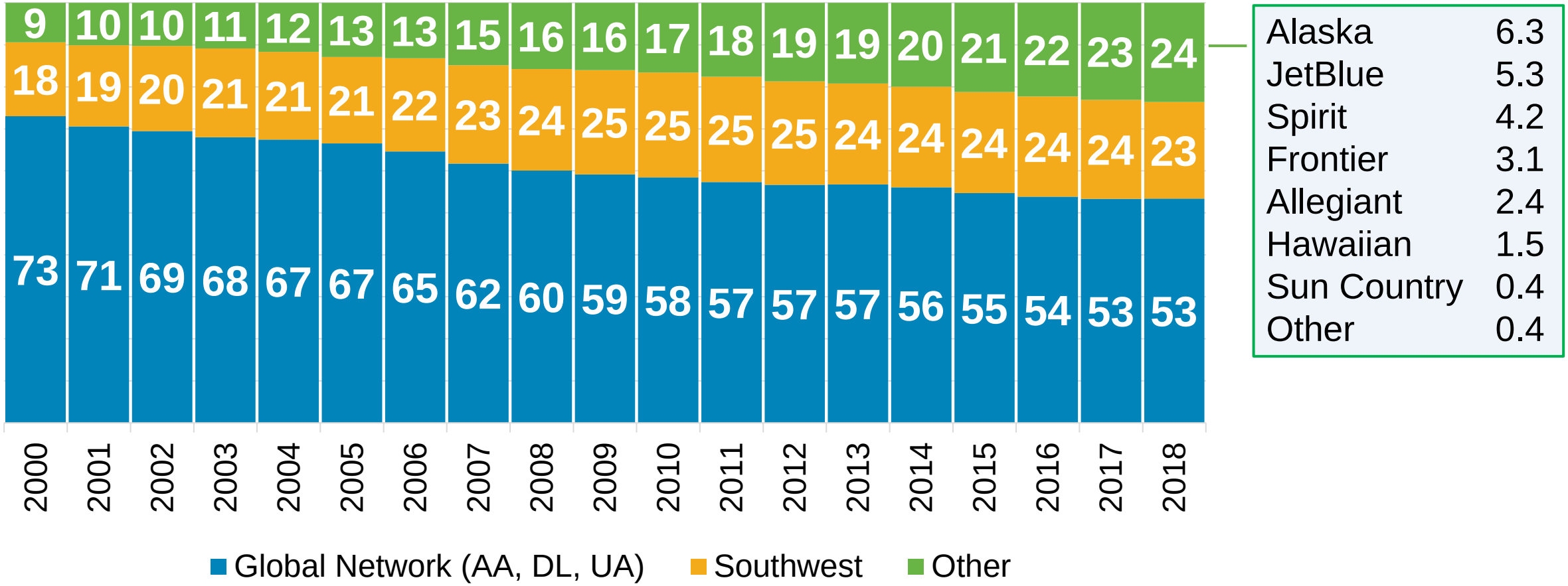

Source: Diio by Cirium schedules as of August 30, 2019, for selected marketing airlines including predecessors

* July 15-21 of each year

# ALK/Hawaiian/JBLU/ULCCs Could Carry a Third of Domestic Passengers By 2030

## Global Network Carrier Share Fell From 73 Percent in 2000 to 53 Percent in 2018

### Share (%) of U.S. Domestic O&D Passengers by Airline Business Model




| | |
|---|---|
| Alaska | 6.3 |
| JetBlue | 5.3 |
| Spirit | 4.2 |
| Frontier | 3.1 |
| Allegiant | 2.4 |
| Hawaiian | 1.5 |
| Sun Country | 0.4 |
| Other | 0.4 |

Source: DOT Data Bank 1B (each airline shown on a marketing-carrier basis and tracked with its respective merged/acquired predecessors [e.g., UA/CO]

# LCCs/ULCCs and Other Non-AA/DL/UA Airlines* Now Carry Significant Share of Domestic Origin-Destination (O&D) Passengers in the Largest U.S. Metro Areas

| Metro Area | Airport(s) | 2000 | 2007 | 2018 |
|---|---|---|---|---|
| Atlanta, GA | ATL | 14.4 | 28.1 | 28.9 |
| Boston, MA | BOS | 7.8 | 27.1 | 49.5 |
| Charlotte, NC | CLT | 0.0 | 8.8 | 10.4 |
| Chicago, IL | MDW/ORD | 26.0 | 30.6 | 35.9 |
| Dallas/Fort Worth, TX | DAL/DFW | 27.3 | 26.6 | 36.6 |
| Denver, CO | DEN | 14.7 | 38.8 | 55.0 |
| Detroit, MI | DTW | 15.0 | 23.3 | 29.7 |
| Houston, TX | HOU/IAH | 34.0 | 30.6 | 42.7 |
| Los Angeles, CA | BUR/LAX/LGB | 35.8 | 43.7 | 50.8 |
| Miami, FL | FLL/MIA | 19.1 | 35.5 | 45.2 |
| Minneapolis/St. Paul, MN | MSP | 12.7 | 14.6 | 29.7 |
| New York, NY-NJ | EWR/JFK/LGA | 8.5 | 25.8 | 29.8 |
| Orlando, FL | MCO/SFB | 24.2 | 52.3 | 66.2 |
| Philadelphia, PA | PHL | 6.6 | 28.0 | 28.8 |
| Phoenix, AZ | PHX | 39.4 | 46.5 | 52.0 |
| St. Louis, MO | STL | 26.5 | 35.5 | 61.3 |
| Salt Lake City, UT | SLC | 23.3 | 34.2 | 30.5 |
| San Diego, CA | SAN | 48.5 | 55.0 | 63.4 |
| San Francisco, CA | OAK/SFO | 33.9 | 45.0 | 52.2 |
| Seattle, WA | SEA | 51.4 | 57.0 | 63.8 |
| Tampa, FL | TPA/PIE | 29.2 | 48.6 | 61.6 |
| Washington, DC | BWI/DCA/IAD | 17.5 | 35.7 | 46.0 |

Source: Compass Lexecon and A4A analysis of DOT Origin-Destination Survey (Data Bank 1B)

# Competitive Choices for Domestic Flyers Have Continued to Increase

## Contrary to Some Assertions, Traffic Analysis Shows More Competitors on U.S. City Pairs

### Average Number of Competitors* on All Reported Domestic U.S. Itineraries


* Carrying at least 5 percent of O&D passengers in the city pair; average number of competitors is passenger-weighted across city pairs

Source: Compass Lexecon analysis of DOT Origin-Destination Survey (Data Bank 1B)

# Competition in Select City Pairs: Airline Share of O&D Passengers in 2019 vs. 2007

## Competitive Presence of Low-Cost and Ultra Low-Cost Carriers Continues to Expand

### Los Angeles (BUR/LAX/LGB)-Seattle

| 2007 | | 2019 | |
|---|---|---|---|
| Alaska | 63.7 | Alaska | 54.9 |
| United | 17.1 | Delta | 23.2 |
| Southwest | 7.9 | JetBlue | 5.9 |
| American | 6.5 | Southwest | 5.4 |
| | | American | 5.3 |

### Boston-Cleveland/Akron

| 2007 | | 2019 | |
|---|---|---|---|
| Continental | 63.2 | JetBlue | 45.5 |
| AirTran | 29.5 | Delta | 22.6 |
| | | Spirit | 12.9 |
| | | United | 12.5 |

### Chicago (MDW/ORD)-Sacramento

| 2007 | | 2019 | |
|---|---|---|---|
| United | 45.1 | United | 41.1 |
| Southwest | 41.8 | Southwest | 35.4 |
| US Airways | 5.0 | American | 17.8 |

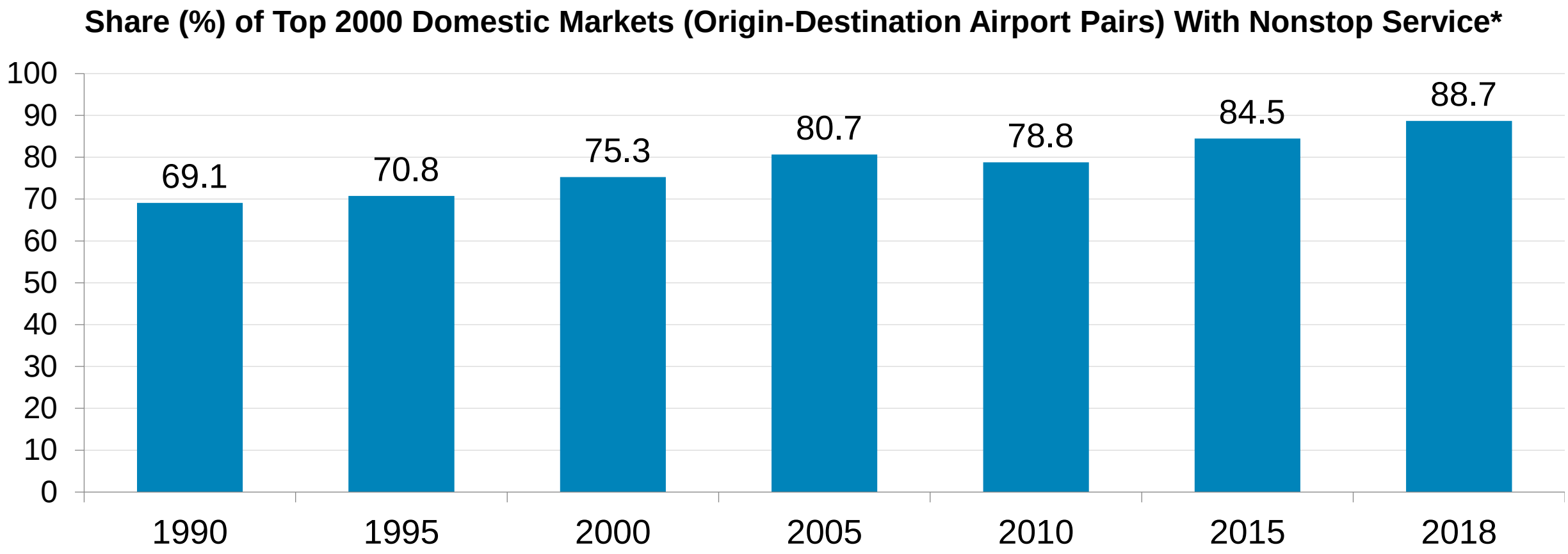
### Memphis-Orlando (MCO/SFB)

| 2007 | | 2019 | |
|---|---|---|---|
| Northwest | 60.6 | Southwest | 44.9 |
| AirTran | 22.2 | Delta | 16.9 |
| Frontier | 8.7 | Allegiant | 14.9 |
| Delta | 5.6 | Frontier | 13.3 |
| | | American | 7.8 |

Source: DOT Data Bank 1B (nondirectional data for year ending 3Q19) and published airline schedules via Diio by Cirium

# Nonstop Service Is Available in More Domestic Air-Travel Markets Than Ever Before

## Share of Busiest Markets With Nonstop Service Rose From 69 Percent in 1990 to 89 Percent in 2018

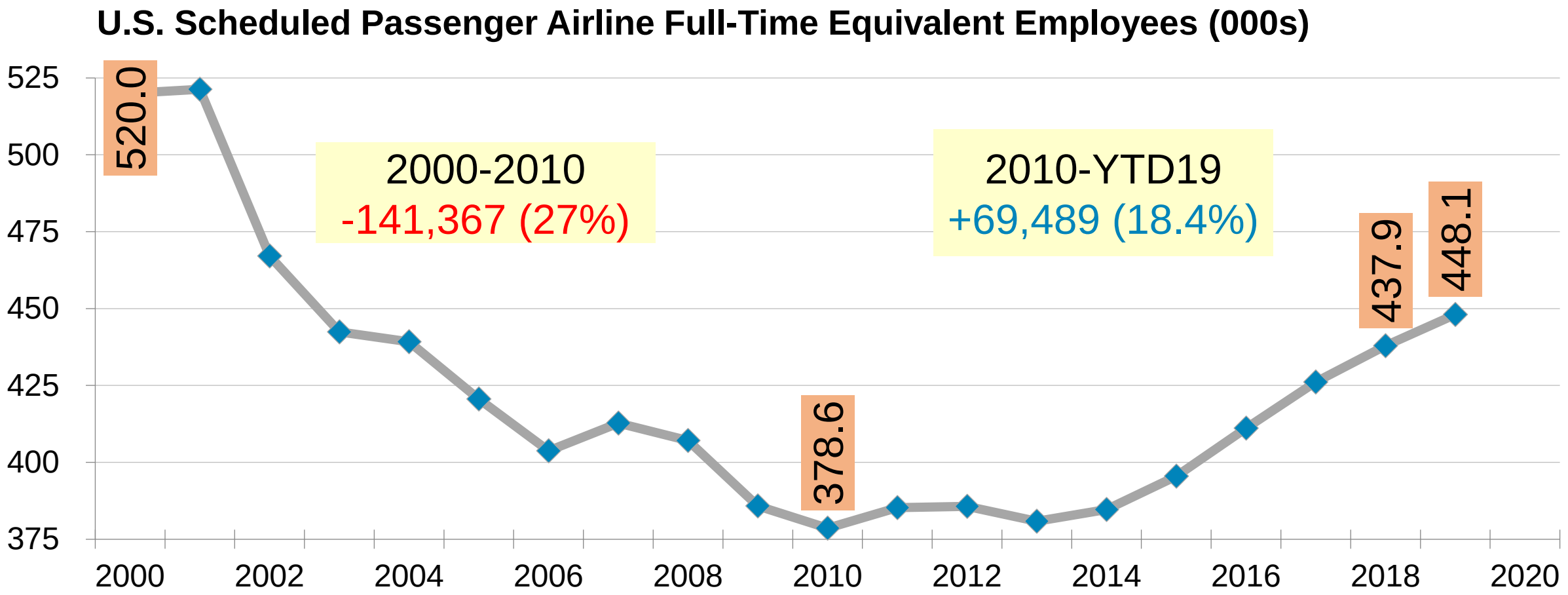



Source: Compass Lexecon analysis of DOT O&D traffic data, OAG schedule data, and T100 and Form 298C.traffic data

* Top 2000 markets accounted for 81% of domestic O&D passengers in 2018

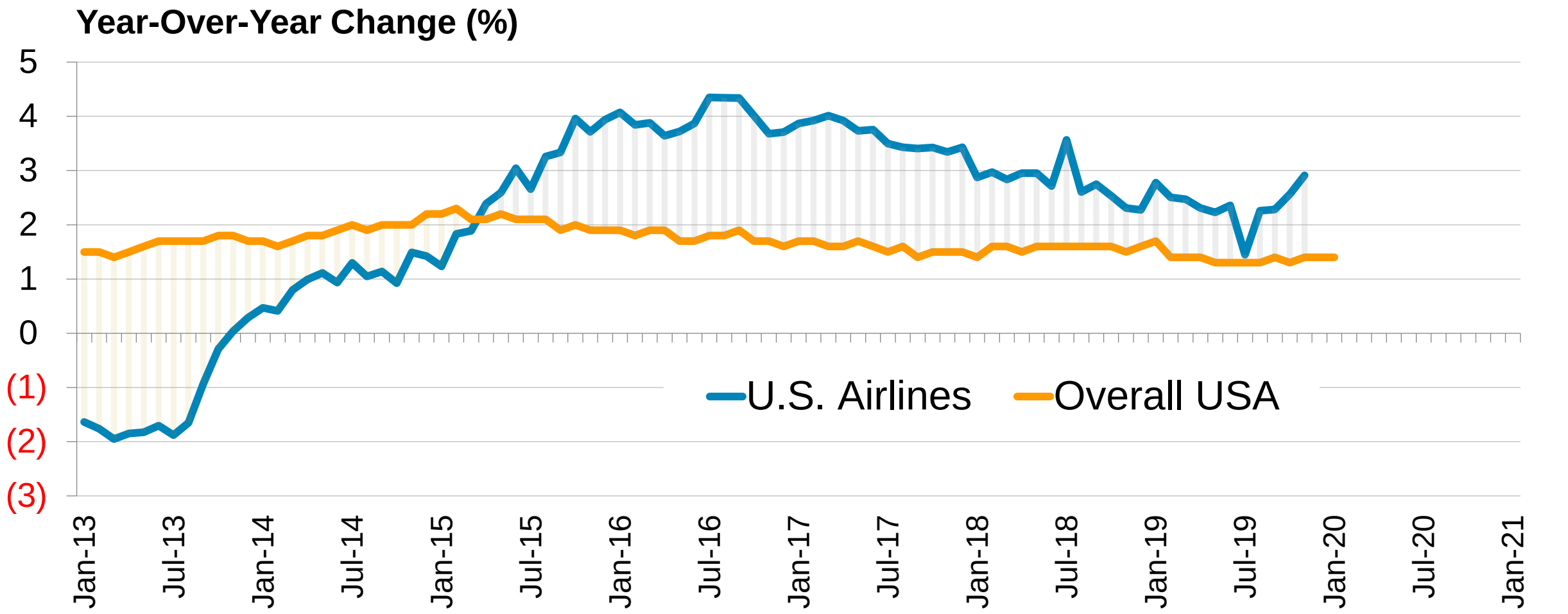
# U.S. Passenger Airline Jobs Averaging Highest Level Since 2002

## November 2019 Represented the 73rd Consecutive Month of YOY Gains




Source: Bureau of Transportation Statistics for scheduled U.S. passenger airlines

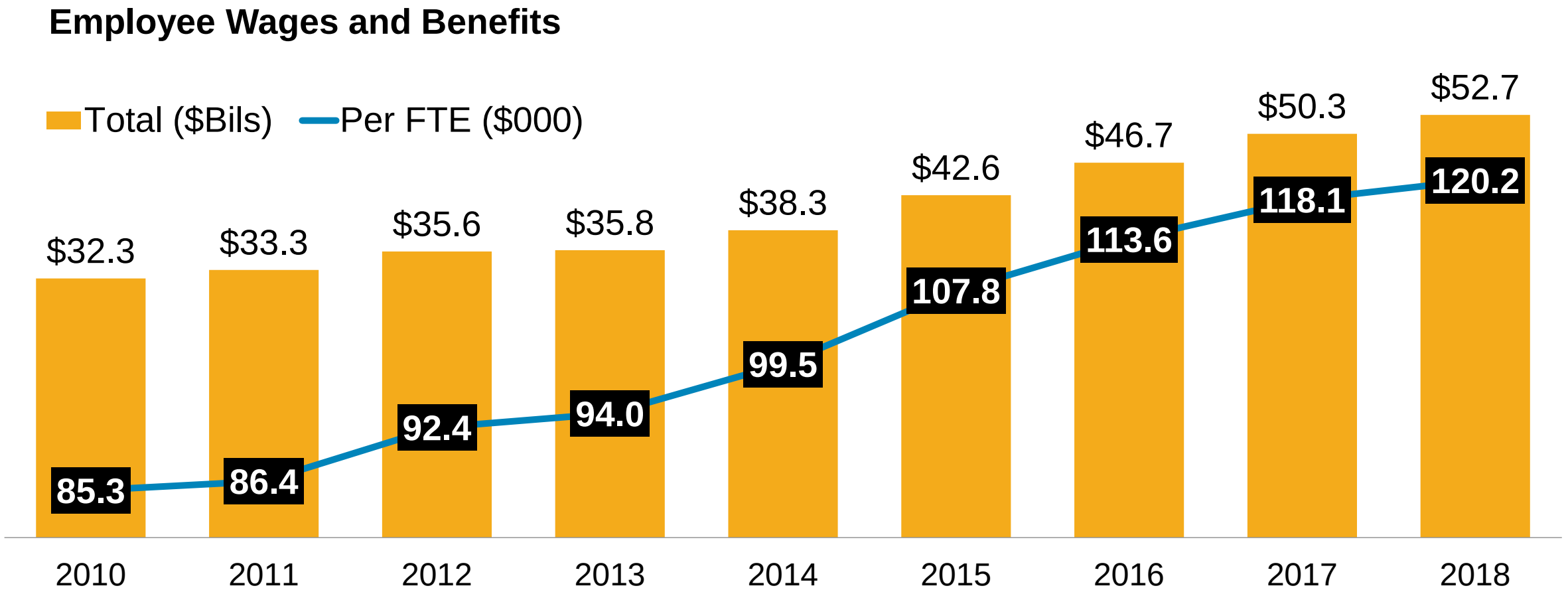
# U.S. Airline Job Growth Continues to Outpace Overall U.S. Job Growth




Source: Bureau of Labor Statistics (U.S. nonfarm employment, CES0000000001) and Bureau of Transportation Statistics (U.S. scheduled passenger airline FTEs)

# U.S. Passenger Airlines Spent $53 Billion on Employee Wages & Benefits in 2018

## Average Compensation per Employee Rose Approximately $35K (41 Percent) From 2010-2018




Source: A4A Passenger Airline Cost Index

# From 2010-2018, U.S. Airlines Plowed 75 Percent of Operating Cash Flow Back Into the Product While Retiring $79 Billion in Debt and Returning $48 Billion in Cash to Shareholders

| 2010-2018 | Total | Per Passenger | % of Ops CF |
|---|---|---|---|
| Retire Debt | $78.8B | ~$12 | 49% |
| Enhance the Product* | $120.9B | ~$18 | 75% |
| Reward Shareholders | $47.5B | ~$7 | 29% |

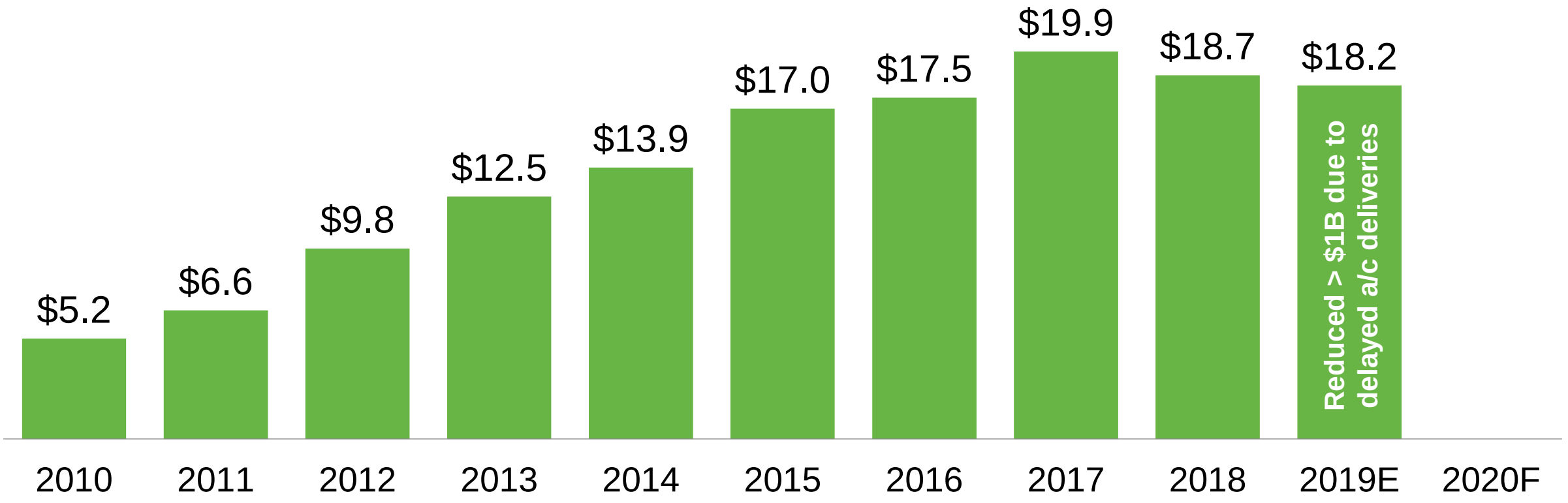
Source: SEC filings of Alaska, Allegiant, American, Delta, Hawaiian, JetBlue, Southwest, Spirit, United and merged/acquired predecessors

* Capital expenditures

# U.S. Airlines Have Been Spending Billions on Planes/Facilities/Ground Equipment/Technology

## Collectively, Passenger Carriers Averaged Delivery of One New Aircraft per Day in 2017-2019

**Capital Expenditures** (Billions) **for U.S. Passenger Airlines**

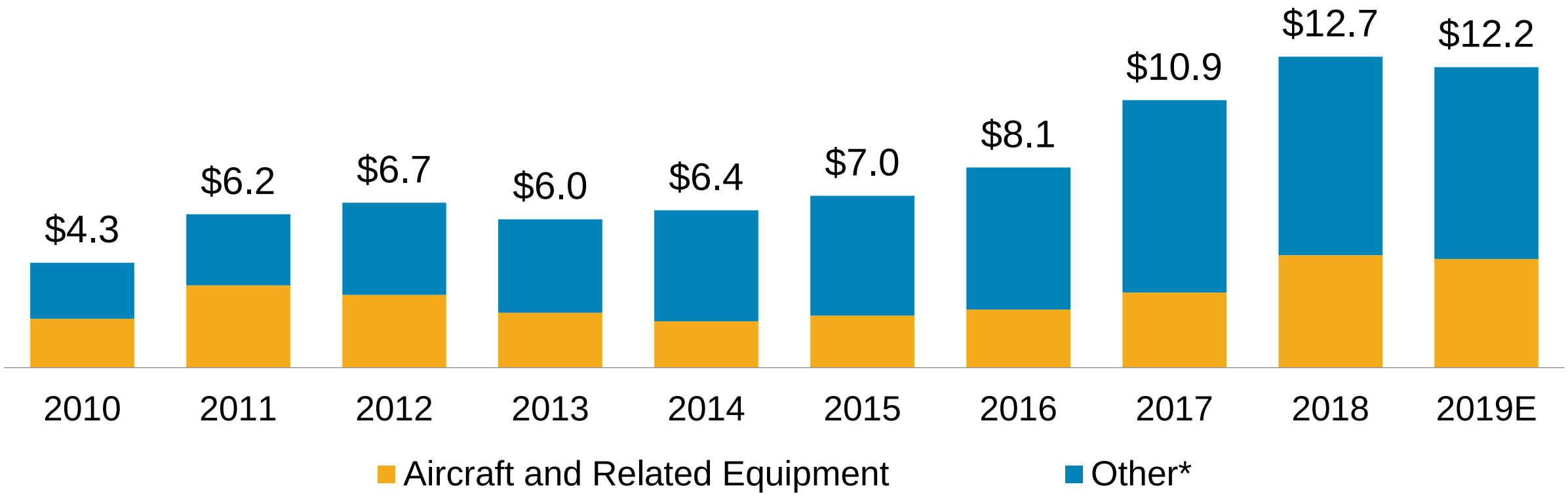



* Includes payments made for aircraft and other flight equipment, ground and other property and equipment (e.g., vans, air stairs, lavatory trucks, deicing vehicles), airport and other facility construction and information technology

Source: SEC filings of Alaska, Allegiant, American, Delta, Hawaiian, JetBlue, Southwest, Spirit, United and merged/acquired predecessors

# Investments in Aircraft, Facilities, Ground Vehicles and IT on the Rise for U.S. Cargo Airlines

## **Capital Expenditures** (Billions) **for Atlas/FedEx/UPS**



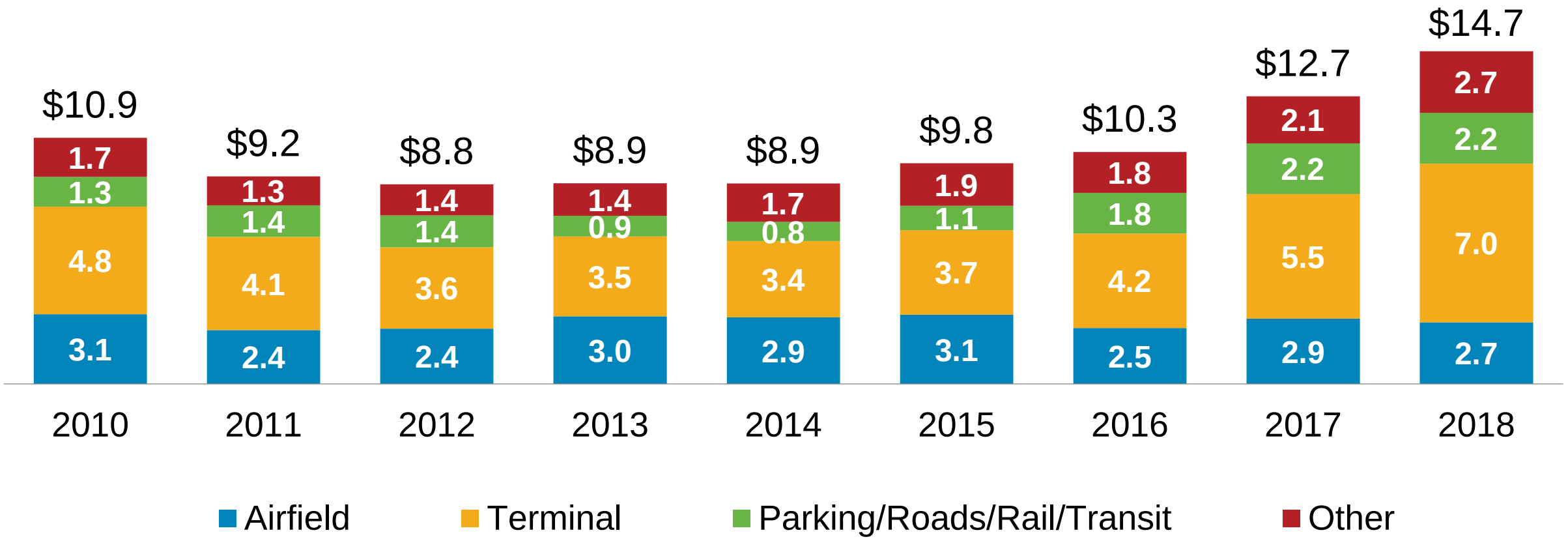

Source: SEC filings of Atlas, FedEx and UPS

* Facilities, vehicles, information technology, package handling and ground support equipment

# Capital Improvements at U.S. Airports, Too, Are on the Rise

## In 2018, Terminal-Related Projects Constituted 48 Percent of Airport Capital Spending

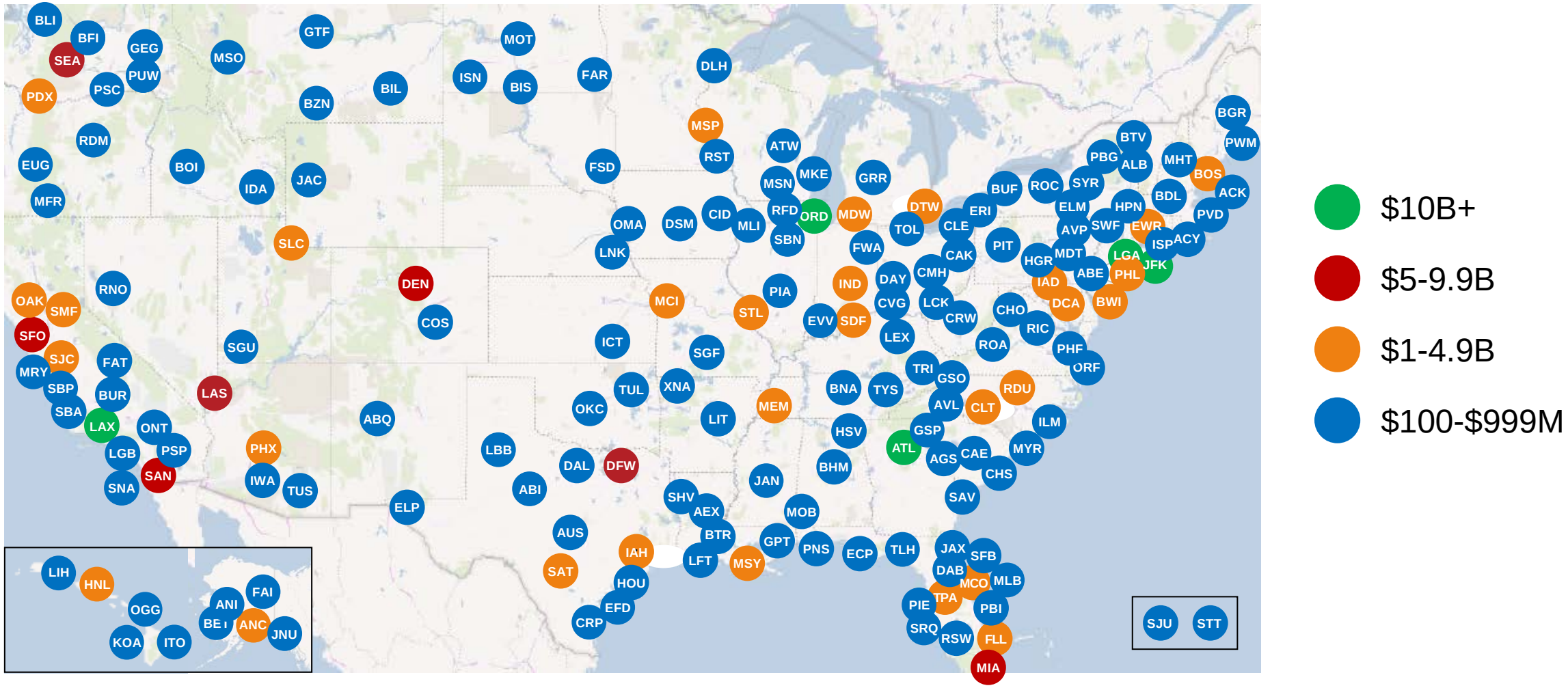
**Capital Expenditures** (Billions) **for U.S. Commercial-Service Airports**




Source: A4A analysis of FAA Form 127 reports

# Airport Investment Is Booming Across the United States

## U.S. Airports With Capital Improvements Exceeding $100M From 2001-2018




$10B+

$5-9.9B

$1-4.9B

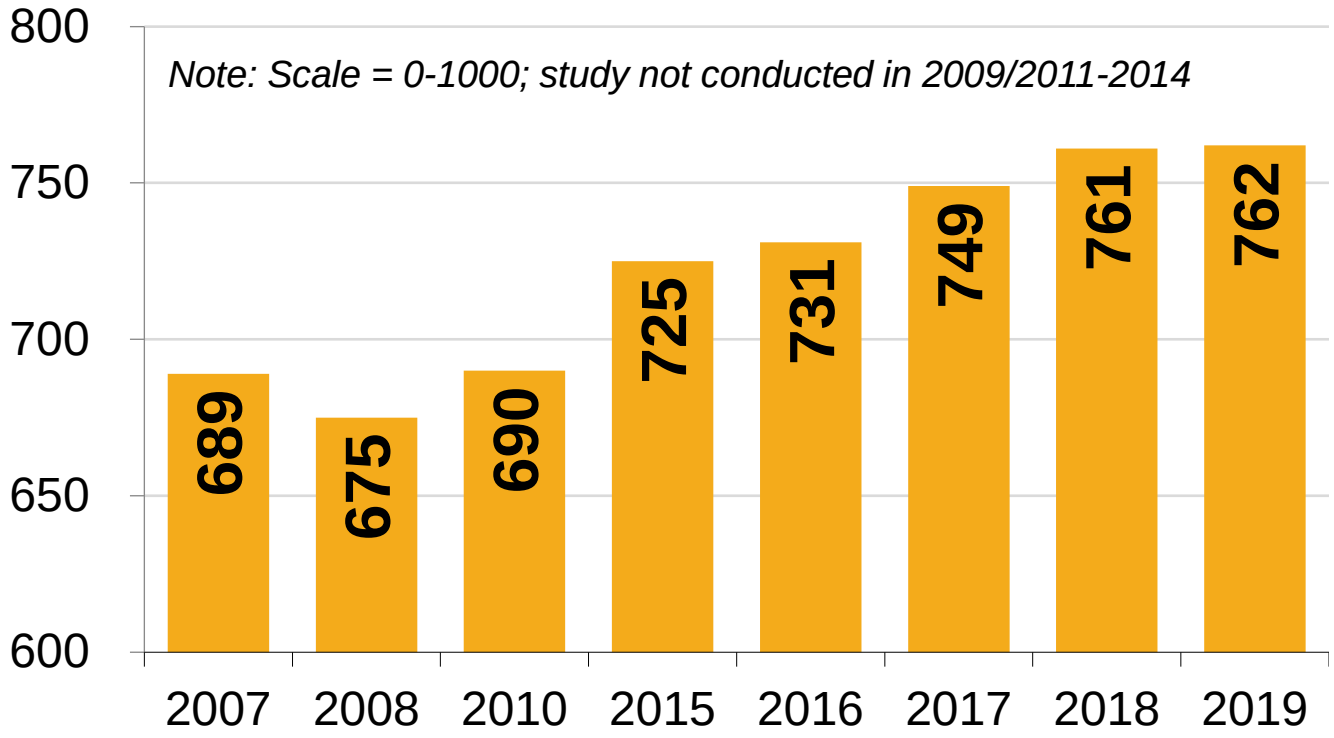
$100-$999M

Source: FAA Form 127 reports (capital expenditures and construction in progress) and A4A research; note: large hub airports include projects underway or approved

# J.D. Power: North America Airport Satisfaction* Climbs to Record High

## Latest Results Released Sept. 25, 2019

"Scaffolding and cranes are official welcome signs to several North American airports these days as record passenger volumes force **major expansion efforts**."




**Six factors** (in order of importance)**:**

- Terminal Facilities*
- Airport Accessibility
- Baggage Claim
- Security Check
- Check-In / Baggage Check
- Food / Beverage / Retail

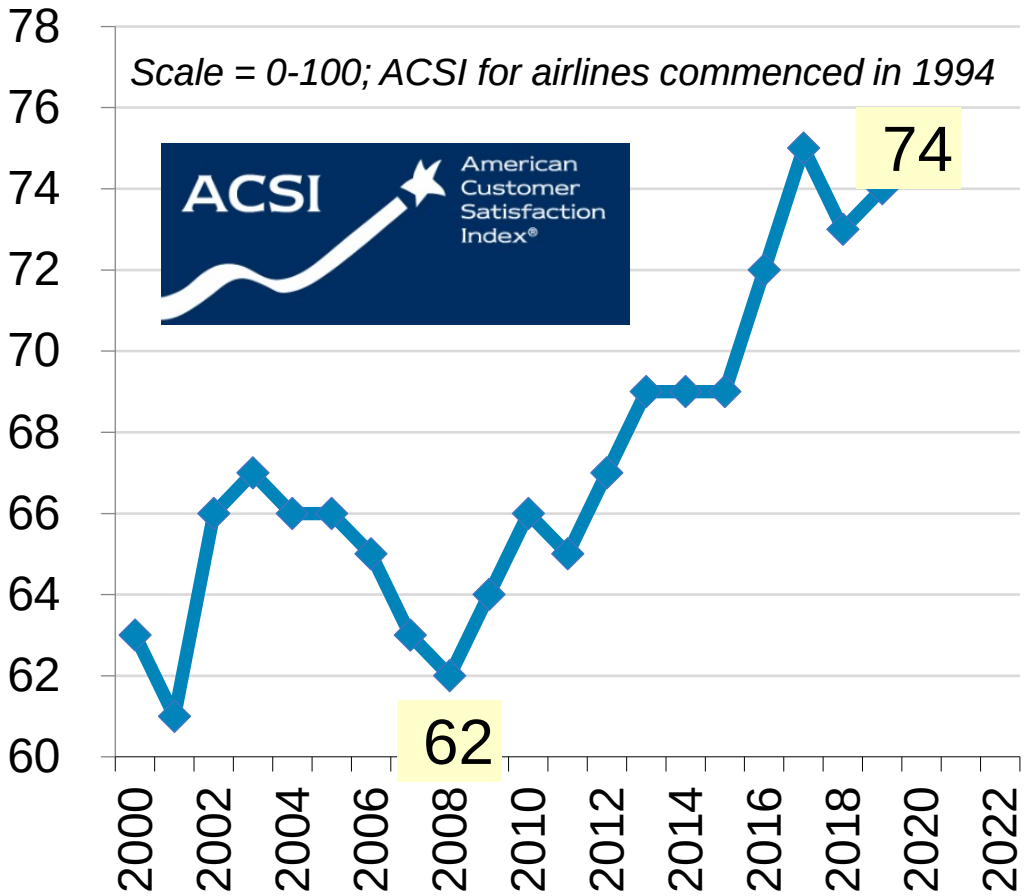
* Concourses, lounges, signage, restrooms, gate areas

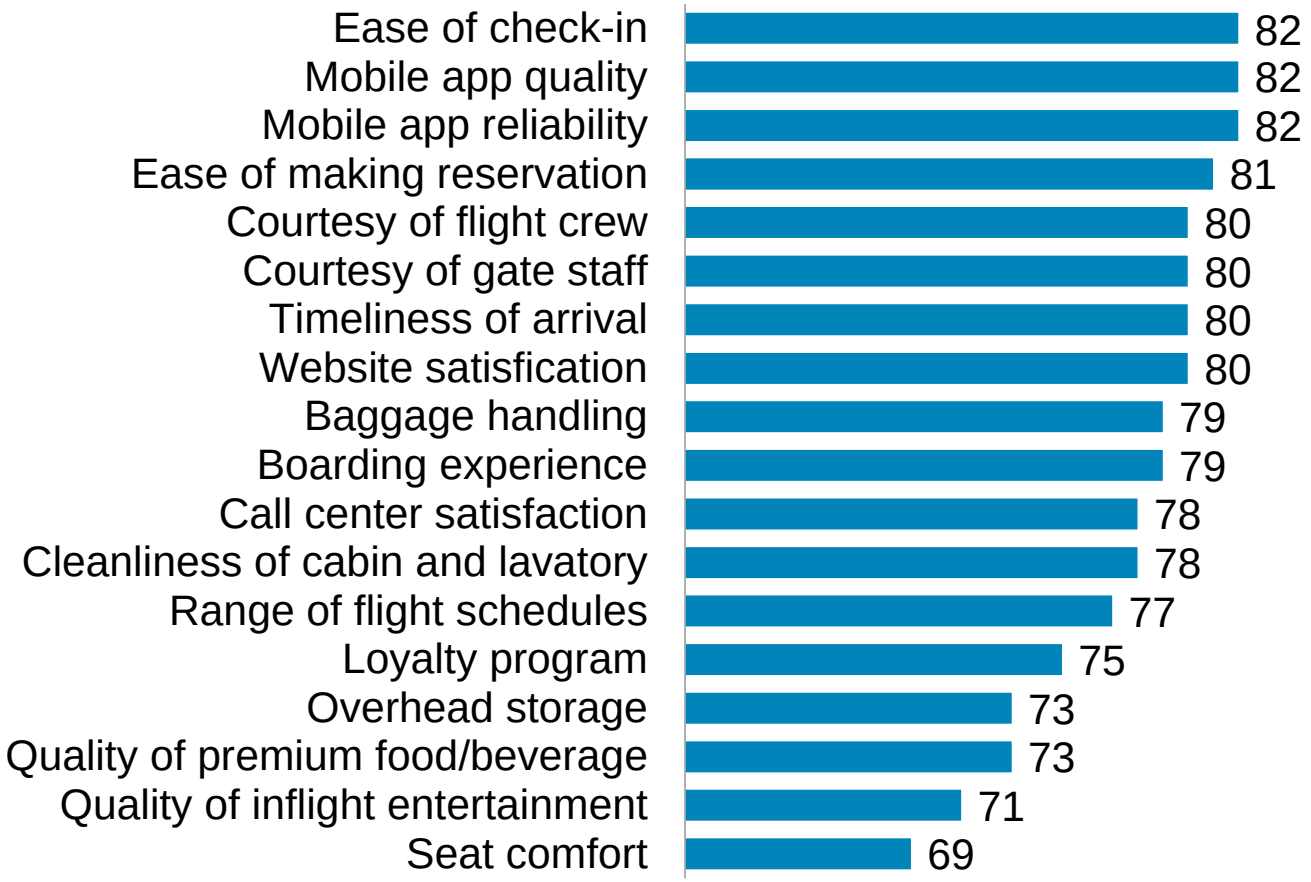
* Now in its 14th year, the study is based on responses from 32,276 U.S. or Canadian residents who traveled through at least one U.S. or Canadian airport and covers both departure and arrival experiences (including connecting airports) during the past three months. Travelers evaluated either a departing or arriving airport from their round-trip experience. The study was fielded from October 2018 through September 2019..

Source: : J.D. Power North America Airport Satisfaction Study℠

# ACSI 2019 Airline Customer Satisfaction Index: Second Best in 25-Year History

## Ease of Booking and Checking in for Flight Rank Highest




Note: ACSI and its logo are Registered Marks of the University of Michigan; see http://www.theacsi.org/the-american-customer-satisfaction-index

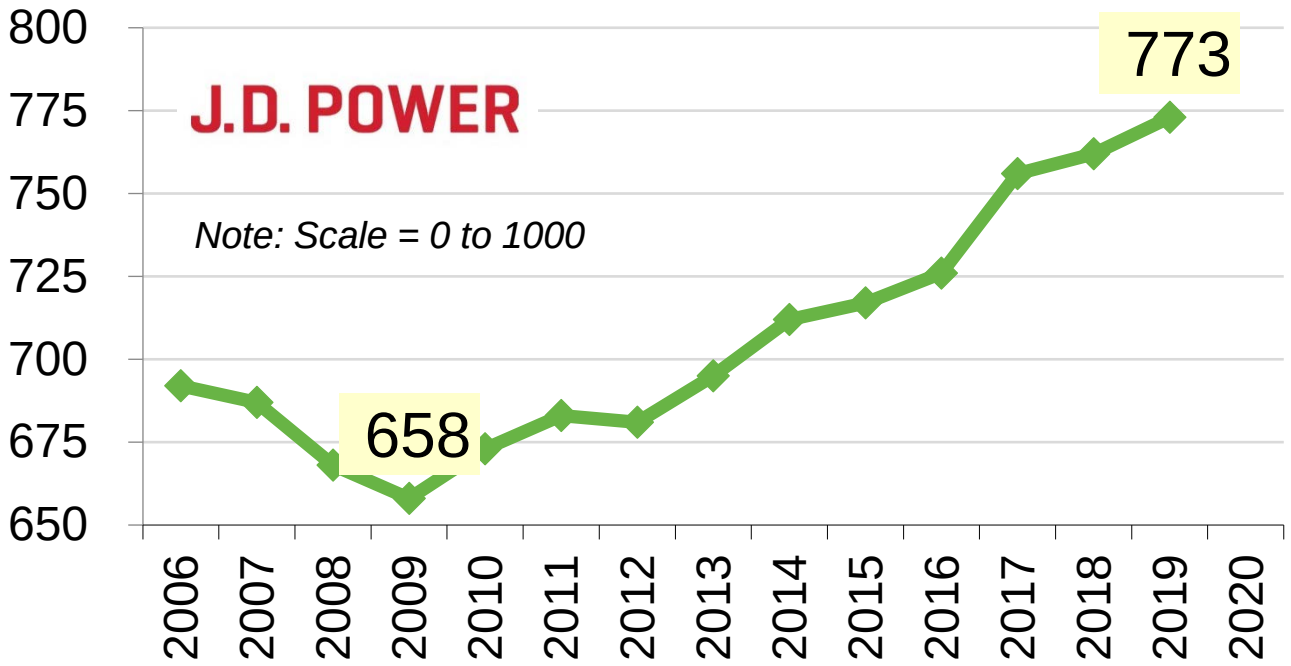
Source: ACSI Travel Report 2018-2019 (April 30, 2019)

# J.D. Power: North America Airline Customer Satisfaction Climbs to Record High

## Latest Results Released May 29, 2019

"**Airlines continue to deliver on the operational side of air travel**. New **technology investments** have dramatically improved the reservation and check-in process. **Fleets are newer** and travelers generally feel that they are getting **great value** for their money. These improvements have been most profound in the traditional carrier segment, where **customer satisfaction has climbed considerably**."

— Michael Taylor, J.D. Power (May 29, 2019)




**Seven factors** (in order of importance)**:**

- Cost and fees
- In-flight services (food/beverage/IFE)
- Aircraft
- Boarding/deplaning/baggage
- Flight crew
- Check-in
- Reservation

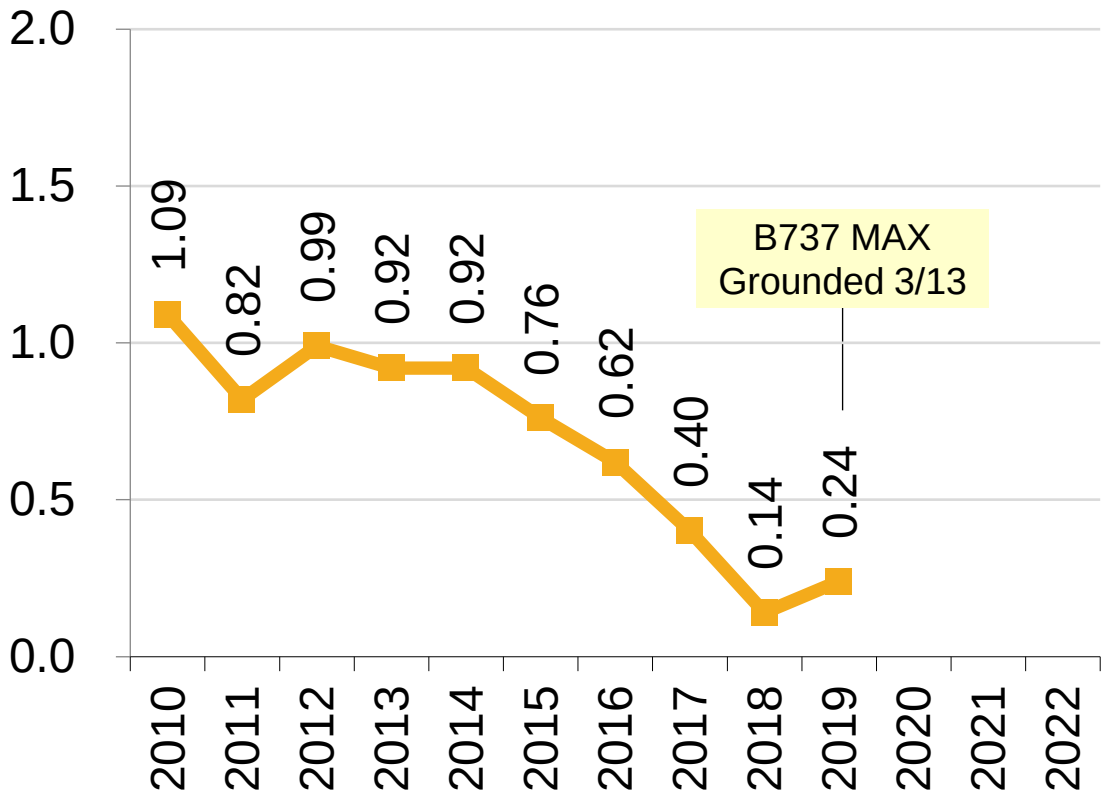
Notes: The study is based on responses from 5,966 passengers who flew on a major North American airline between March 2018 and March 2019.

Source: : J.D. Power North America Airline Satisfaction Study℠

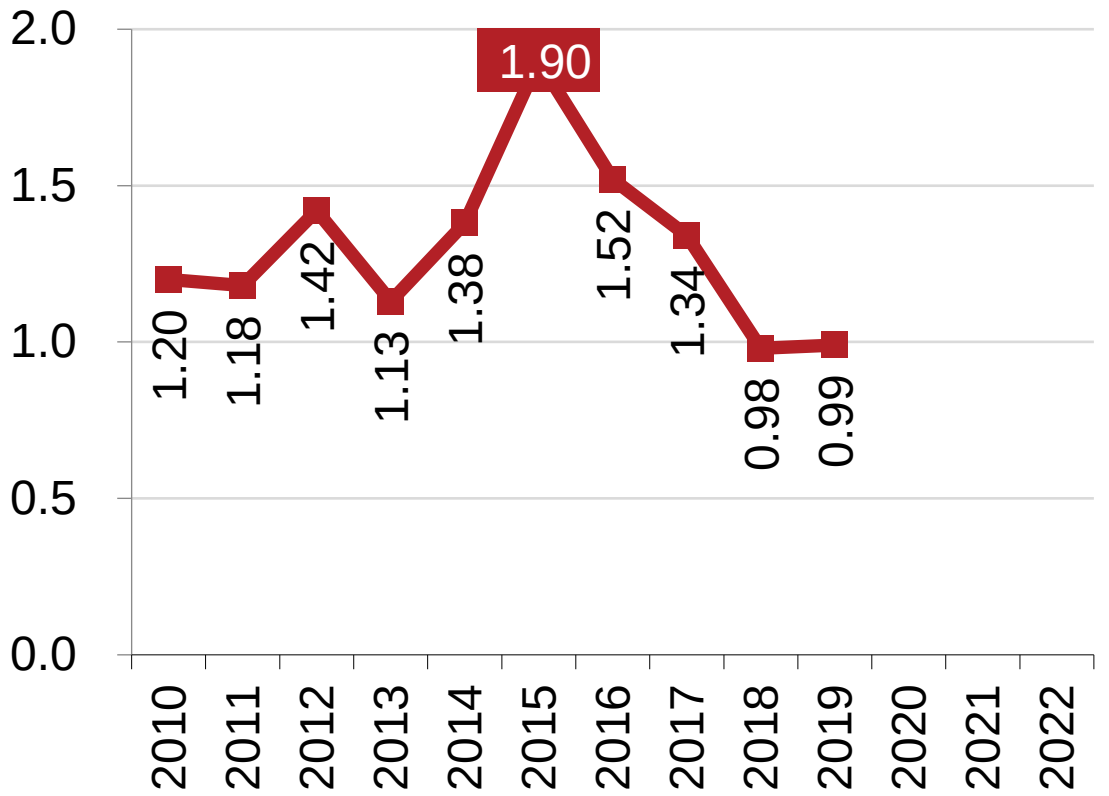
# Involuntary Denied Boardings and Customer Complaints Have Been Trending Down

## Grounding of B737 MAX Largely Responsible for Anomalous 2019 Increase

### Involuntary Denied Boardings per 10K Pax*

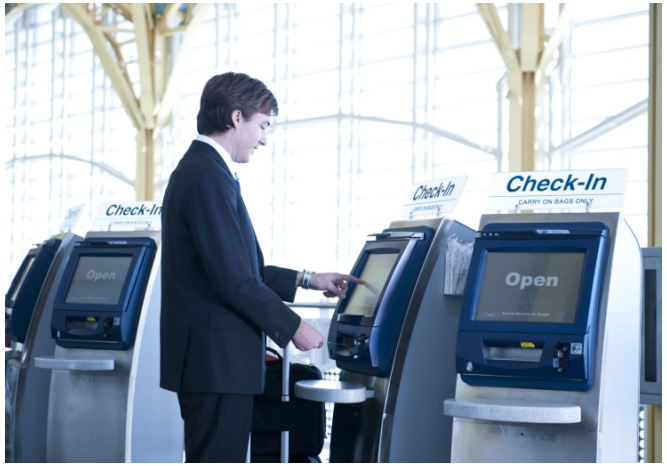


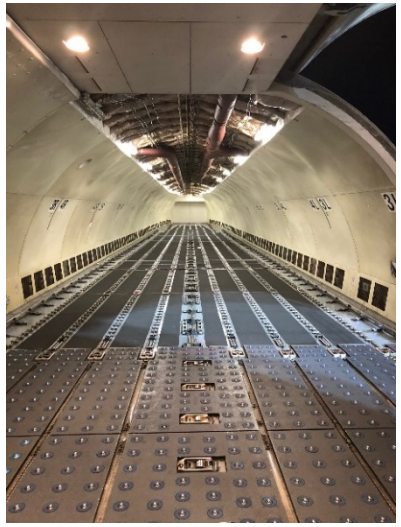

### DOT Customer Complaints per 100K Pax*

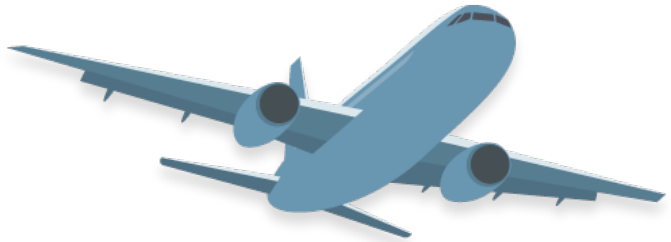



Source: DOT *Air Travel Consumer Report (*http://www.dot.gov/airconsumer/air-travel-consumer-reports)

* U.S. passenger airlines

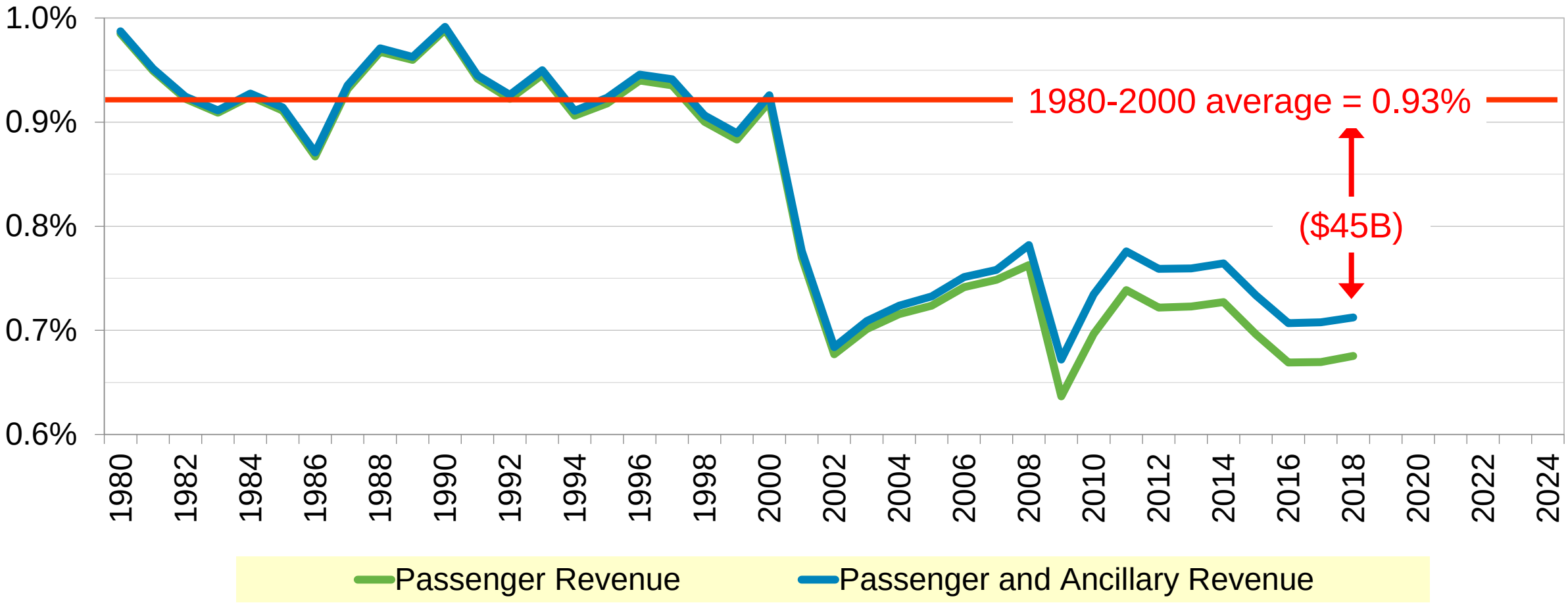

Check-In
Open





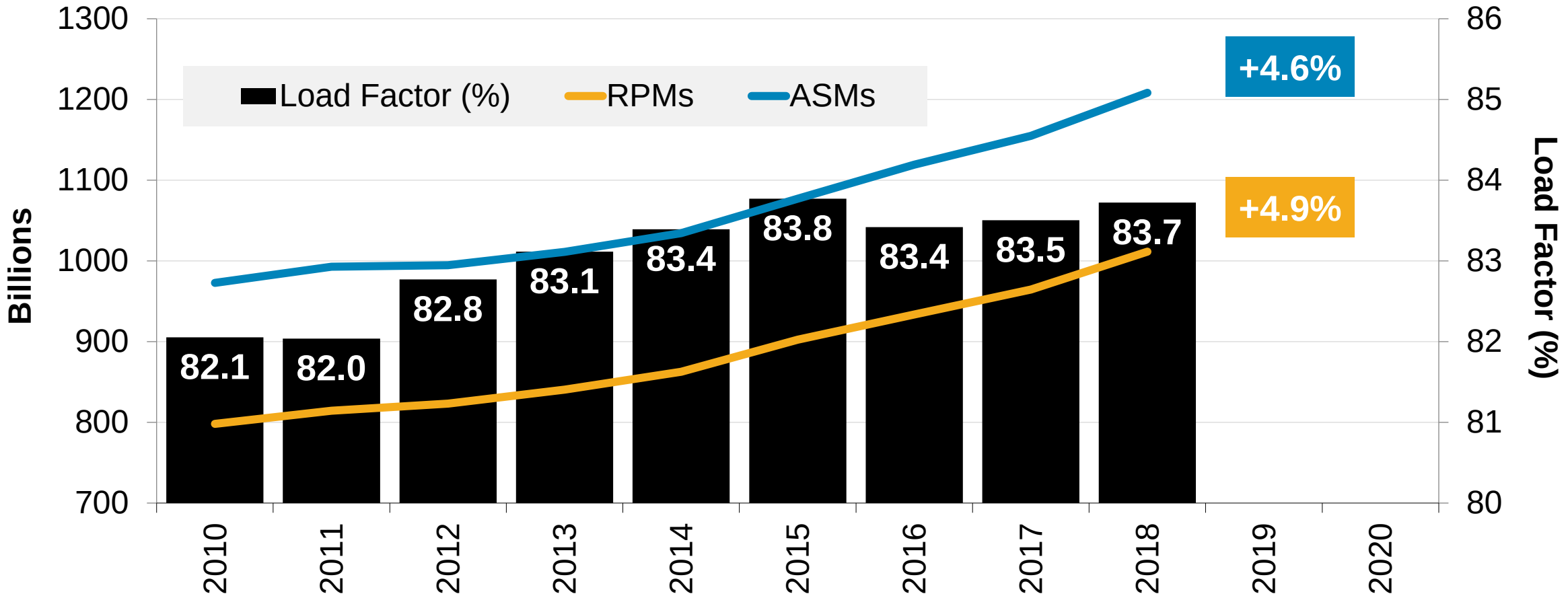
# Diminished Airline Pricing Power Has Led to Diminished "Take" of U.S. Economy

## Systemwide Passenger and Ancillary Revenues as Share of U.S. Gross Domestic Product




Source: A4A Passenger Airline Cost Index

# In 2018, Passenger Traffic (Revenue Passenger Miles) on U.S. Airlines Grew Faster Than Capacity (Available Seat Miles), Lifting the Industry's Average Load Factor to 83.7 Percent

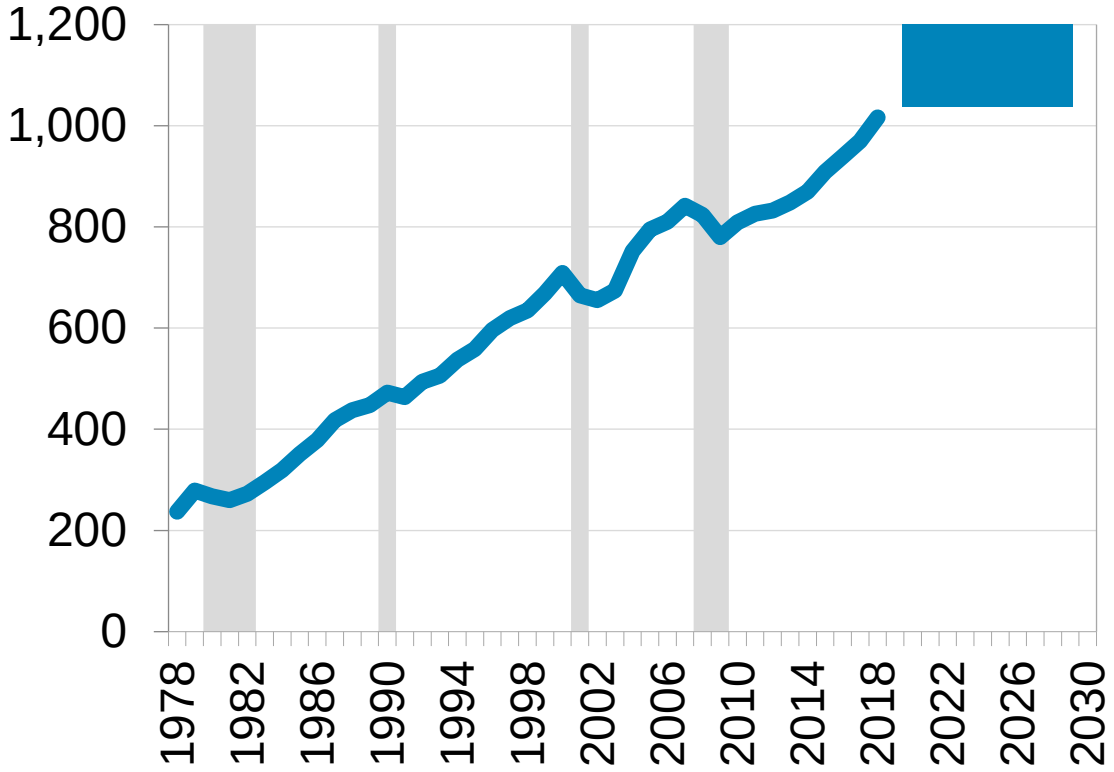



Source: U.S. Bureau of Transportation Statistics T1, systemwide scheduled service on U.S. airlines – revenue passenger miles (RPMs) and available seat miles (ASMs)

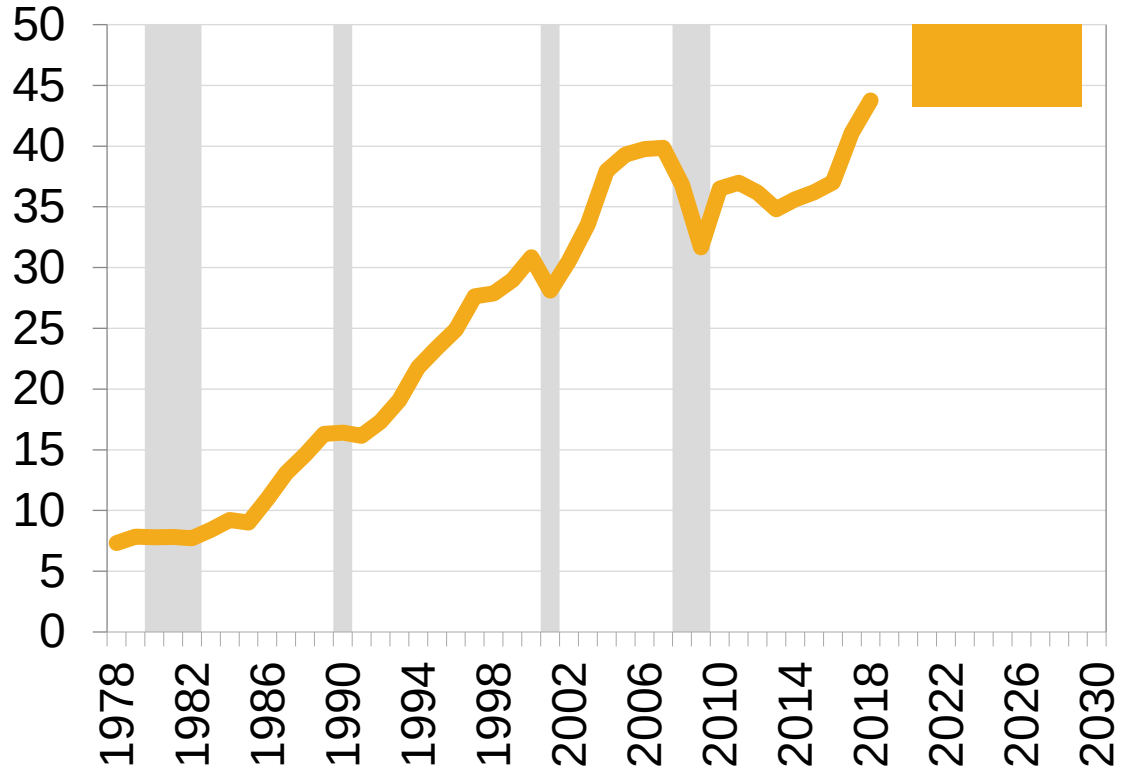
# U.S. Airlines Will Continue to Move More People and Goods Over Longer Distances

## In the 2020s, RPMs Will Exceed 1 Trillion Annually; Cargo RTMs Will Surpass 50 Billion Annually

### Revenue Passenger Miles (Billions)



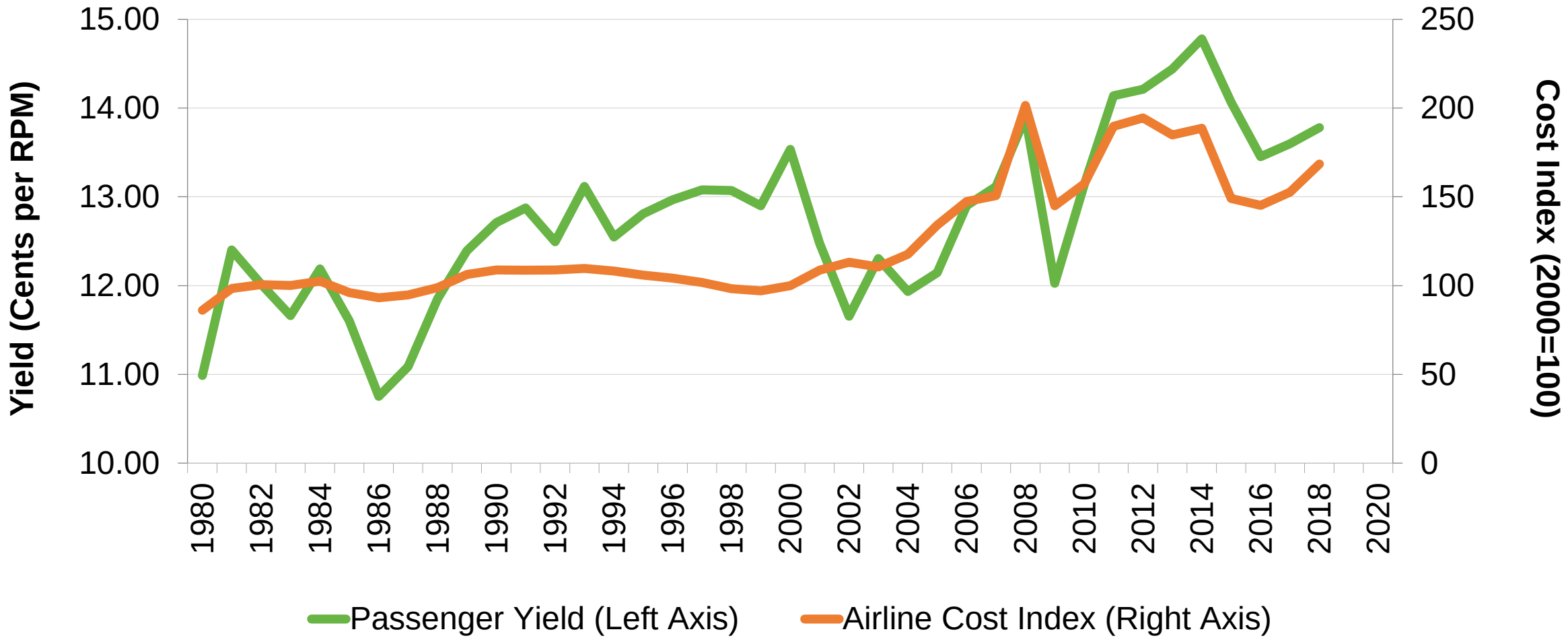

### Cargo Revenue Ton Miles (Billions)




Source: U.S. Bureau of Transportation Statistics (T1 systemwide for U.S. airlines – all services)

Note: Recessions highlighted in gray

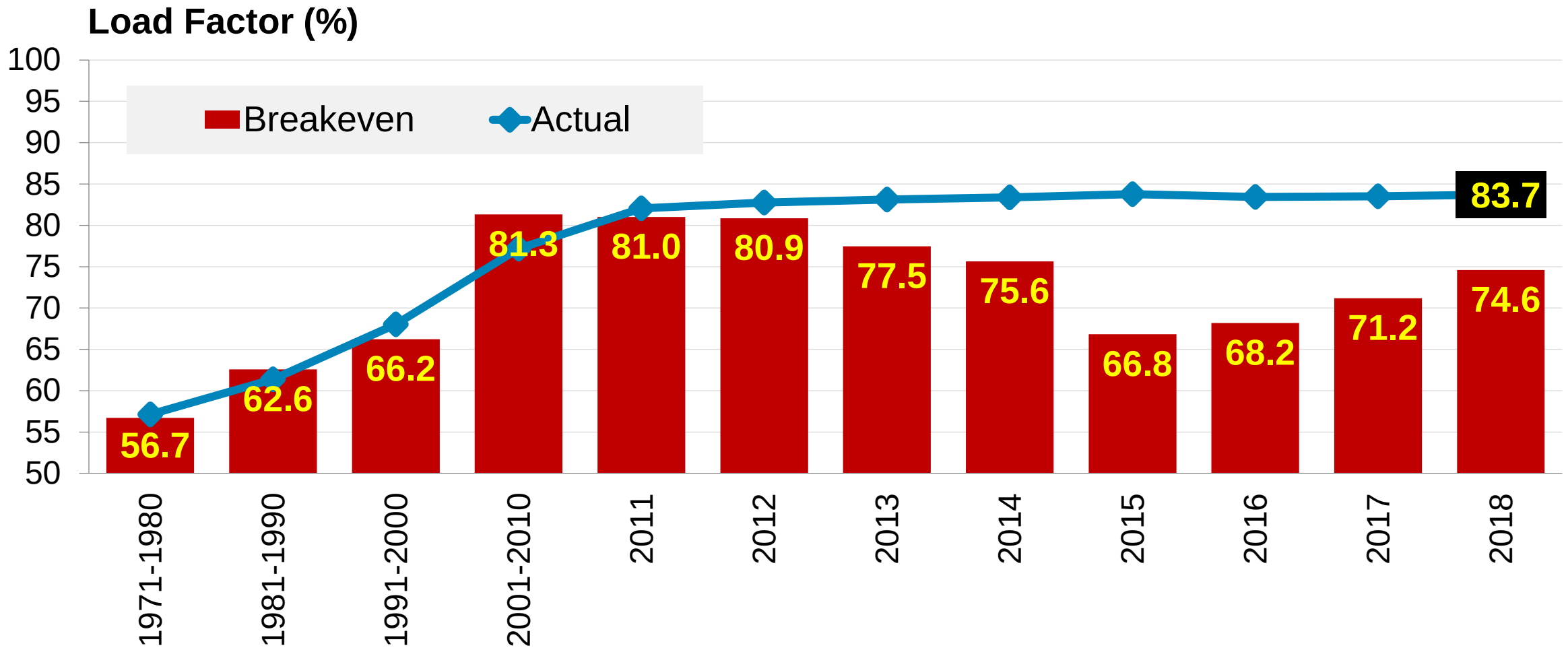
# Especially Since 2000, Changes in the Price to Fly a Mile on U.S. Carriers Have Correlated Closely With Changes in the Cost of Inputs to Airline Production




Source: A4A Passenger Airline Cost Index

# In 2011-2018, Average Load Factor Has Exceeded Breakeven Requirement

## Stable at 82 to 84 Percent Over Past Several Years, With Breakeven Rising to 75 Percent




Source: A4A Passenger Airline Cost Index (http://airlines.org/dataset/a4a-quarterly-passenger-airline-cost-index-u-s-passenger-airlines/)

# Low-Cost Carriers In Particular Continue to Put Substantial Pressure on Fares

## "Southwest Effect" Remains in Force – Brueckner/Lee/Singer

Economics of Transportation 2 (2013) 1–17

Contents lists available at SciVerse ScienceDirect

Economics of Transportation

journal homepage: www.elsevier.com/locate/ecotra

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Airline competition and domestic US airfares: A comprehensive reappraisal

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ARTICLE INFO

*Article history:*
Received 17 December 2011
Received in revised form
4 June 2012
Accepted 6 June 2012

*Keywords:*
Airlines
Airfares
Competition
Merger

ABSTRACT

This paper extends recent research on the fare impacts of low-cost carriers, incorporating its adjacent-airport approach to offer a comprehensive picture of the competitive effects of both legacy carriers and low-cost carriers. The analysis measures the impact of in-market (i.e., airport-pair) competition and adjacent competition for both types of carriers, while also capturing the impact of potential competition from low-cost carriers. Moreover, this comprehensive approach is applied separately to two different types of markets, nonstop and connecting, which have not been simultaneously treated before within a single study. The results show that most forms of legacy-carrier competition have weak effects on average fares. Low-cost carrier competition, on the other hand, has dramatic fare impacts, whether it occurs on the airport-pair, at adjacent airports, or as potential competition.

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1. Introduction

The effect of airline competition on airfares has been a long-standing focus of research on the airline industry. Interest in this topic was first spurred by deregulation of US airlines in 1978, which allowed airfares to be set by market forces and removed restrictions on entry. The impacts of deregulation began to emerge in the 1980s, prompting a flurry of studies gauging the effects of competition on fares. Notable contributions include Bailey et al. (1985), Berry (1990, 1992), Borenstein (1989, 1990, 1991, 1992), Brueckner et al. (1992), Brueckner and Spiller (1994), Call and Keeler (1985), Evans and Kessides (1993, 1994), Graham et al. (1983), Hurdle et al. (1989), Morrison and Winston (1986, 1989, 1995), and others. Using a number of different approaches, these studies showed that fares indeed respond to the level of competition in airline markets, testifying to the market discipline unleashed by deregulation.

With the fare impacts of competition well established by this literature, interest in the subject waned during the 1990s. However, a major revolution was brewing in the airline industry over this period, with low-cost carriers ("LCCs"), led by Southwest Airlines, exerting a growing influence over the pricing of domestic air travel. It was obvious that LCC competition exerted dramatic downward pressure on fares, and Dresner et al. (1996) and Morrison (2001) were the first papers to systematically measure and confirm this effect.[1] Both papers showed that the competitive impact of LCCs is substantially larger than that of "legacy" carriers, the focus of the earlier literature. Goolsbee and Syverson (2008) further studied LCC fare impacts by measuring the effect of threatened entry by Southwest, as distinct from its actual presence in a market, showing that even such a threat substantially depresses fares.[2]

All of these studies incorporate a key element of LCCs' route structures: operation out of secondary airports within large metropolitan areas (examples are Midway (MDW) in Chicago and Baltimore-Washington (BWI) in the Washington, D.C. area). This pattern means that an LCC's fare impact in an airport-pair market often arises via service at "adjacent" airports. Although the competitive effect of adjacent service was ignored in the earlier literature (e.g., Borenstein, 1989; Brueckner et al., 1992), this practice is untenable when studying the impact of competition in the LCC era.

The purpose of the present paper is to incorporate the innovations of these recent LCC studies into a broader, more-comprehensive analysis of competition and airfares in domestic US markets, focusing equally on the roles of LCCs and legacy carriers. In doing so, the paper offers the most complete domestic

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http://dx.doi.org/10.1016/j.ecotra.2012.06.001

[1] While Dresner et al. (1996) considered several different LCCs in their study, Morrison's (2001) study focused exclusively on Southwest.
[2] The emergence of airline alliances, both international and domestic, was another important development during the 1990s, and a literature gauging the fare impacts of such alliances has emerged. See Brueckner and Whalen (2000), Ito and Lee (2007), Whalen (2007), Gayle (2008) and Armantier and Richard (2008).

- A December 2016 update of the frequently cited Brueckner/Lee/Singer study (2013) demonstrated that the "Southwest Effect" remains in force:
  - In the period 3Q 2015 through 2Q 2016, Southwest's presence on a route **lowered fares** 21.2 percent
  - In addition, the update found that many smaller but rapidly expanding carriers put substantial **downward pressure** on global network carrier domestic air fares, e.g.:
    - Alaska ↓ 24.0 percent
    - JetBlue ↓ 25.4 percent
    - Spirit ↓ 18.5 percent

Source: Jan K. Brueckner, Darin Lee and Ethan S. Singer, "Airline competition and domestic US airfares: A comprehensive reappraisal," *Economics of Transportation,* 2013

# Low-Cost Carriers In Particular Continue to Put Substantial Pressure on Fares

## "Southwest Effect" Remains in Force – Beckenstein/Campbell

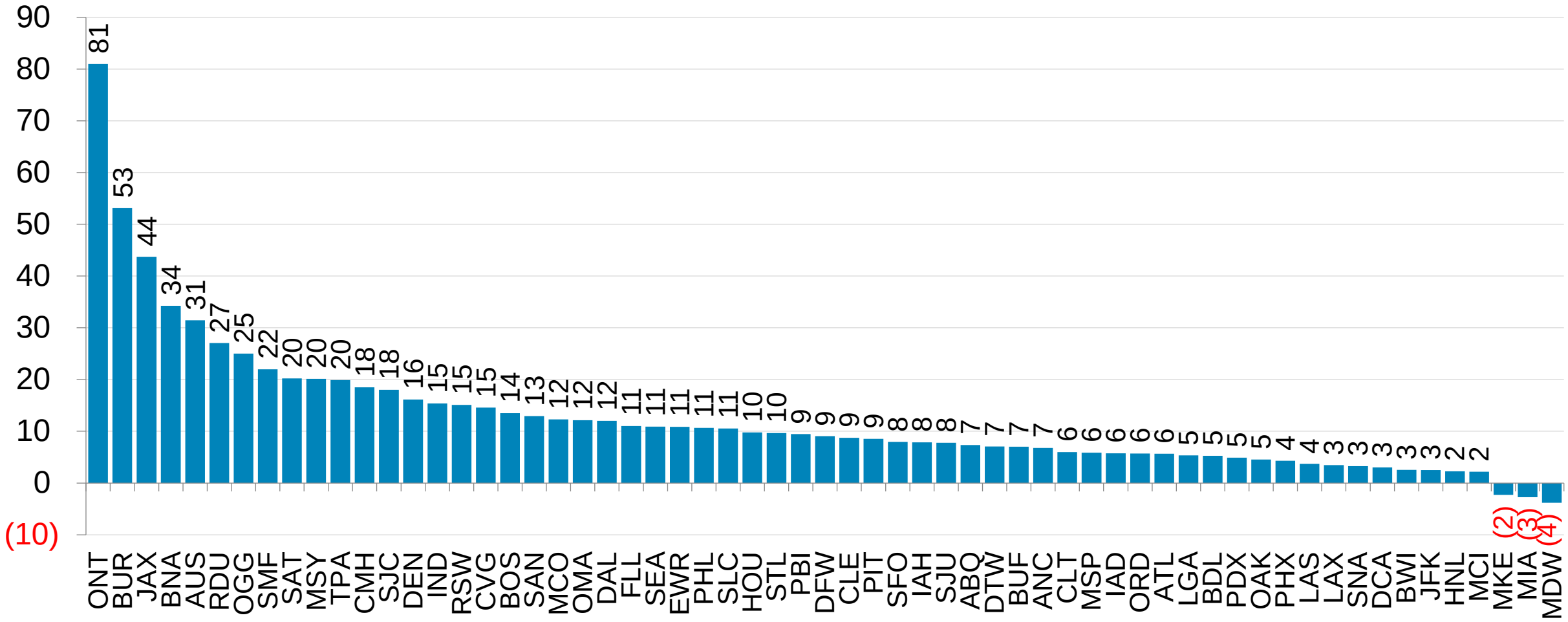
"The presence and magnitude of the Southwest Effect has endured through time. Even today, when new markets have frequently been affected already by Southwest's fares on connecting services, **the Southwest Effect still shows, on average, an additional market fare reduction of 15% and corresponding traffic increase of 28% to 30%, from the introduction of nonstop service by Southwest**."

"**The Southwest Effect is alive and well.** We find no evidence that the Southwest Effect has been eroded or overtaken in significance or magnitude by other airlines… Our study finds that Southwest produces $9.1 billion annually in domestic consumer fare savings. **One-way average market fares are $45 lower when Southwest serves a market nonstop than when it does not. If Southwest provides only connecting service in a city-pair market, average market fares are $17 lower (one-way) than when there is no competitive effect from Southwest**."

Source: Alan R. Beckenstein, Ph.D., Professor of Business Administration at the Darden School of Business, University of Virginia; and Brian M. Campbell, Ph.D., Principal, the Campbell-Hill Aviation Group, LLC, "Public Benefits and Private Success: The Southwest Effect Revisited," *Darden Business School Working Paper Number 206* (August 2017)

# Over Past Two Years, Medium-Sized U.S. Airports Grew Faster Than Large U.S. Airports

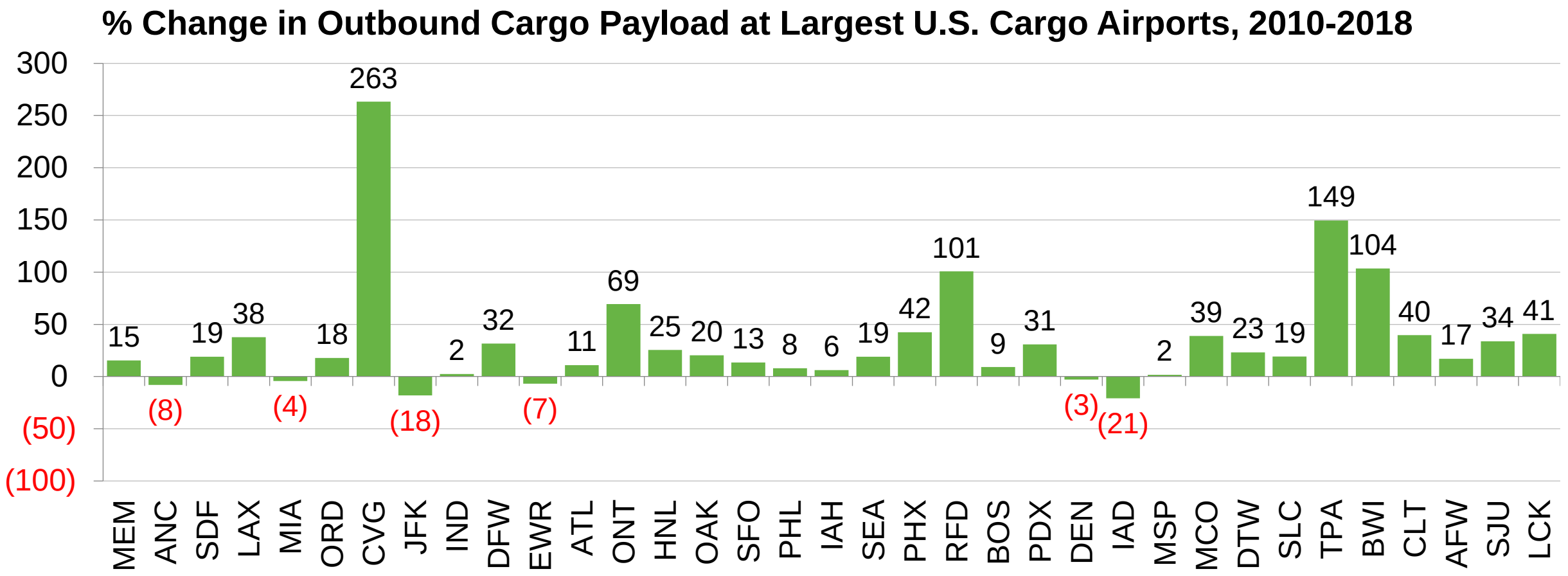
## Percent Change in Scheduled Available Seat Miles at Top U.S. Airports: 2017 to 2019




Source: Diio by Cirium published schedules as of Jan. 10, 2020, for all airlines providing scheduled service

# E-Commerce and Rapid Fulfillment Redrawing the Map for Distribution of Air Cargo

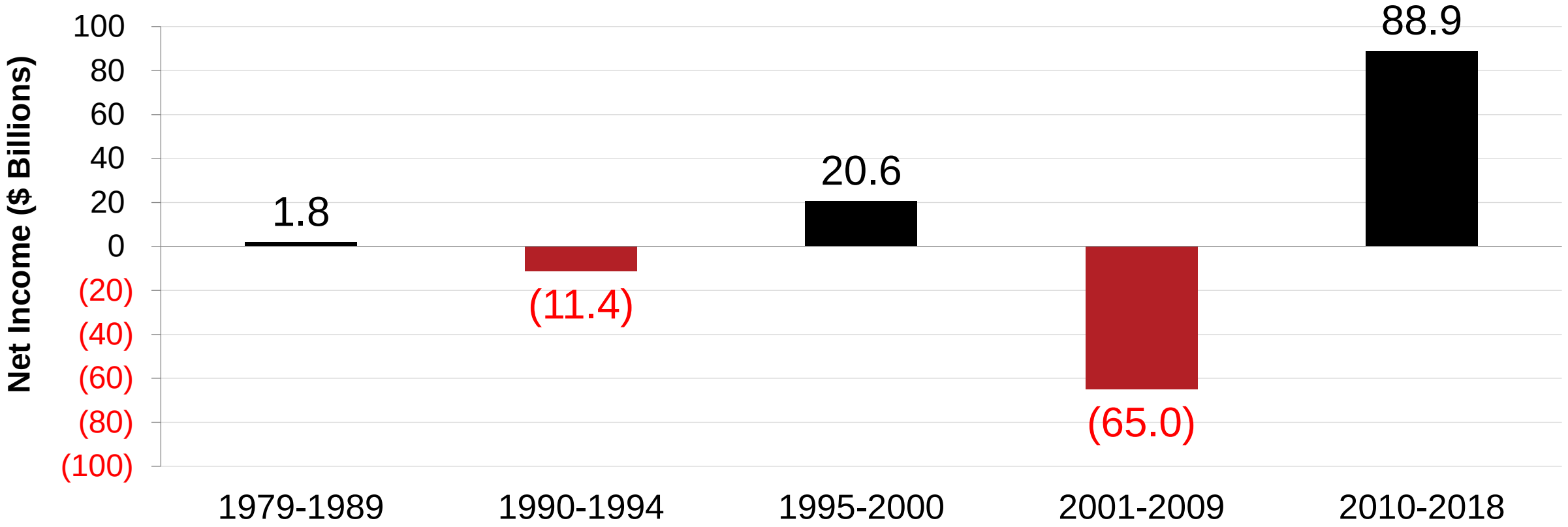
## Cincinnati (CVG) and Tampa (TPA) Are Among the Biggest Winners




Source: DOT T100 segment data

# In the Deregulated Period, U.S. Airline "Earnings" Have Been Cyclical and Volatile

## Cumulative Net Income = $35 Billion (0.9 Percent of Revenues)




| Margin: | 0.4% | (3.3%) | 3.8% | (6.3%) | 6.0% |
|---|---|---|---|---|---|

Source: A4A Passenger Airline Cost Index

# Airline Creditworthiness Has Improved But Continues to Lag Many Fortune 500s

## Standard & Poor's Ratings

| | |
|---|---|
| Johnson & Johnson, Microsoft | AAA |
| Alphabet (Google), ExxonMobil | AA+ |
| Walmart | AA |
| Toyota | AA- |
| Airbus, PepsiCo | A+ |
| Amtrak, Target, UPS | A |
| Boeing, BP | A- |
| EasyJet, Ryanair, Southwest, eBay, GE, McDonald's, Starbucks | BBB+ |
| British Airways, Lufthansa, FedEx, Marriott | BBB |
| Delta, Ford | BBB- |
| Alaska, Air Canada | BB+ |
| Avis Budget Group, JetBlue, United, Sabre | BB |
| Aeromexico, American, Hawaiian, LATAM, Spirit | BB- |
| SAS, Turkish, Virgin Australia, WestJet, Hertz | B+ |
| Gol Linhas Aereas (GOL) | B |
| Avianca | SD |

**Investment Grade[1]**

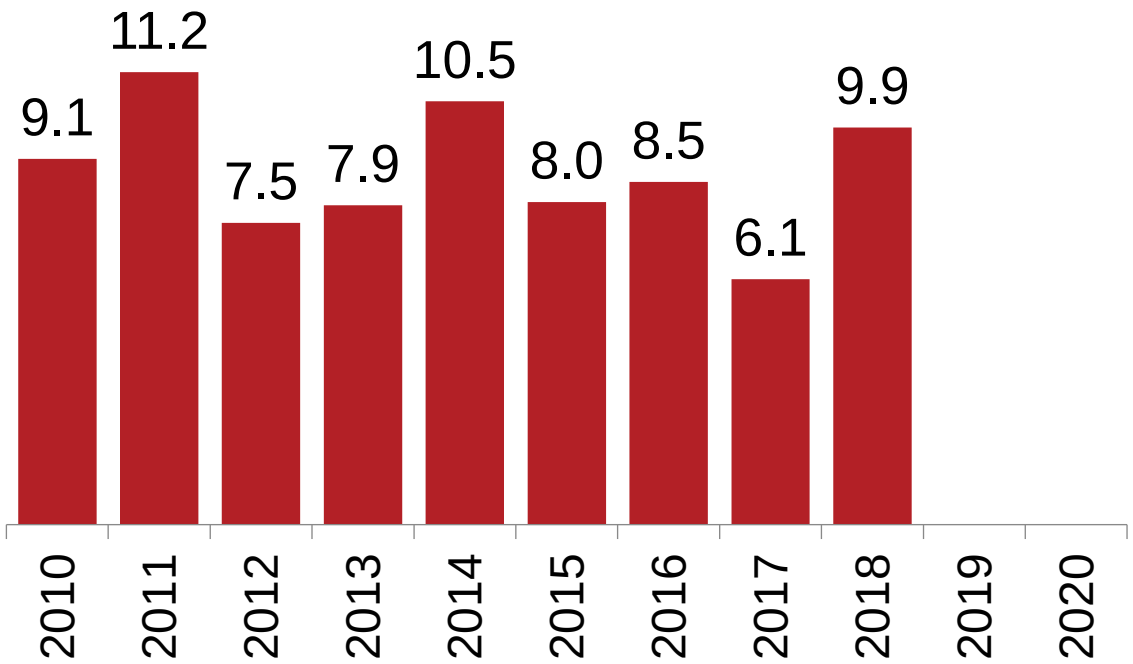
**Speculative[2] Grade**

[1] Describes issuers with relatively high levels of creditworthiness and credit quality
[2] Describes issuers with ability to repay but facing significant uncertainties, such as adverse business or financial circumstances that could affect credit risk

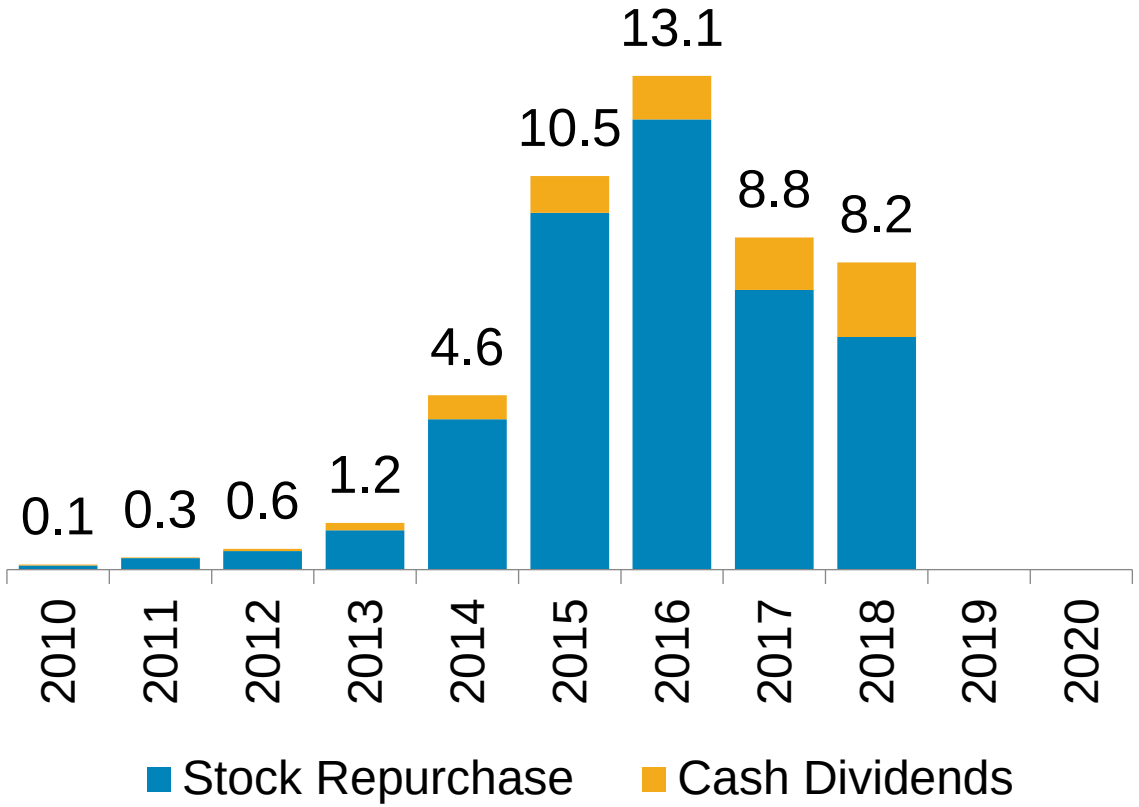
Source: Standard and Poor's; "Guide to Credit Rating Essentials: What are credit ratings and how do they work?"

# From 2010-2018, Following the Financial Crisis, U.S. Airlines Retired ~$79 Billion in Debt and Returned ~$48 Billion to Shareholders to Lure and Retain New Equity Investors

## **Retirement of Long-Term Debt** ($ Billions)



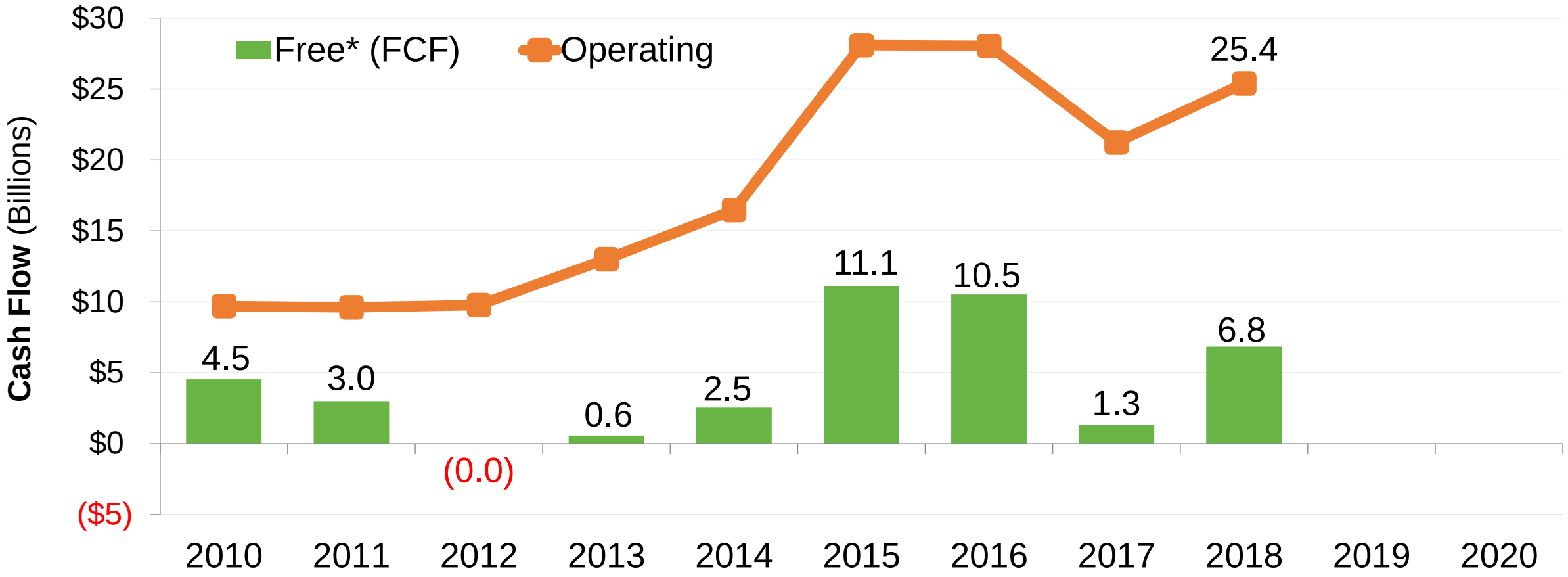

## **Returns to Shareholders** ($ Billions)




Source: SEC filings of AAL/ALGT/ALK/DAL/HA/JBLU/LUV/SAVE/UAL and merged predecessors

* Payments on long-term debt and capital lease obligations

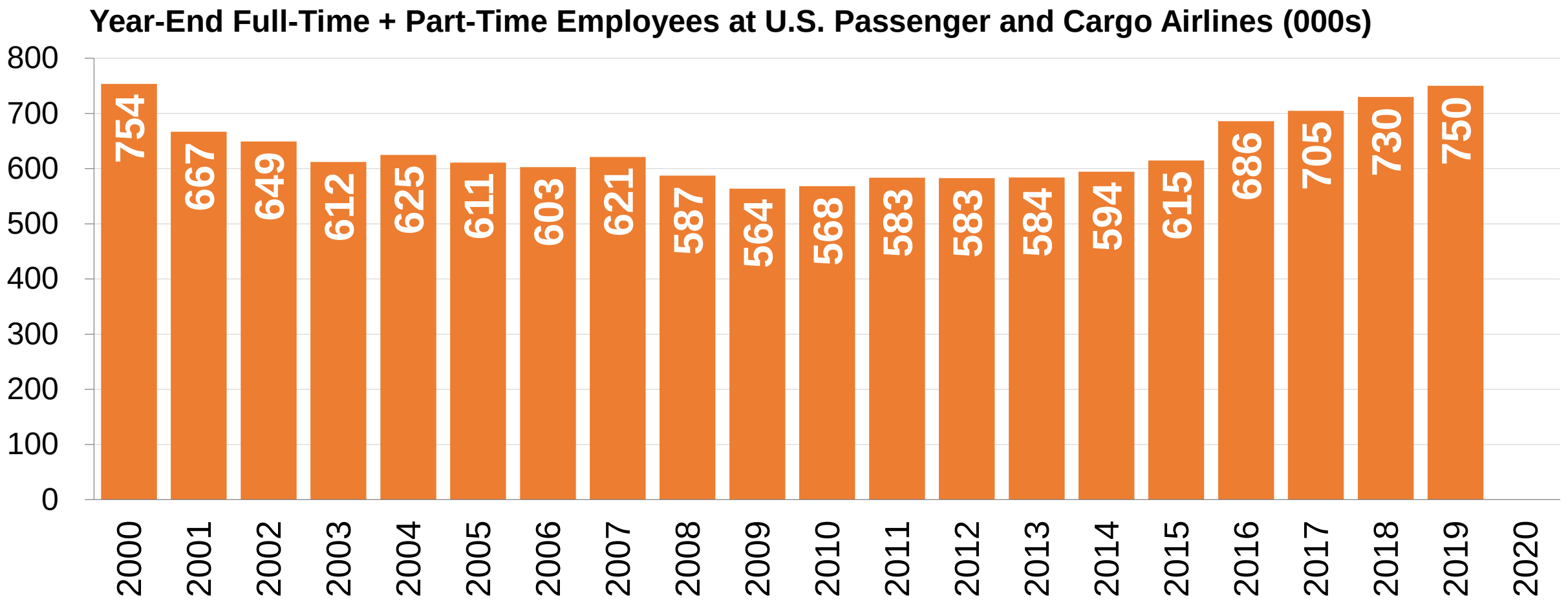
# As U.S. Airlines Generate Sufficient Cash from Operations, They Are Better Able to Fund Capital Improvements, Improve Customer Experience and Enhance Shareholder Value




Source: SEC filings of AAL/ALGT/ALK/DAL/HA/JBLU/LUV/SAVE/UAL and merged predecessors

* Operating cash flow minus capital expenditures

# U.S. Airline Industry Employment Has Reached Its Highest Level Since the End of 2000




Source: Bureau of Transportation Statistics

* 2016 includes FedEx acquisition of TNT on May 25, 2016, which increased headcount by approximately 55,000

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