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U.S. Airline Industry Review: Allocating Capital to Benefit Customers, Employees and Investors

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/

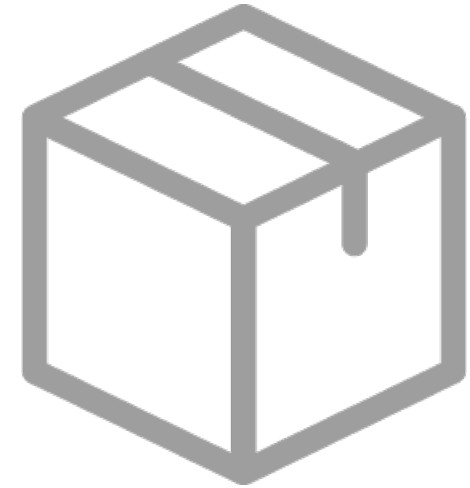
Updated May 2, 2019

The ~730,000 Employees of U.S. Passenger and Cargo Airlines Offer an Extensive Worldwide Network Facilitating the Safe and Rapid Movement of People and Goods

27,000 daily **flights** across the globe*

2.4 million **passengers** per day

58,000 tons of **cargo** per day*



Source: A4A and Bureau of Transportation Statistics for U.S. passenger and cargo airlines

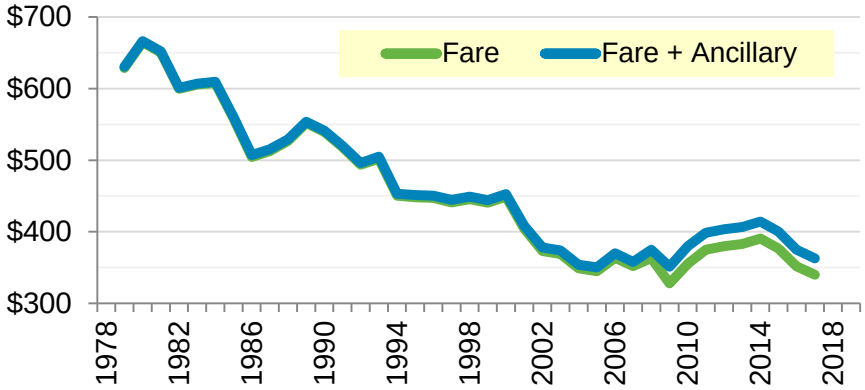
* Includes passenger/combination and cargo-only carriers

Contents

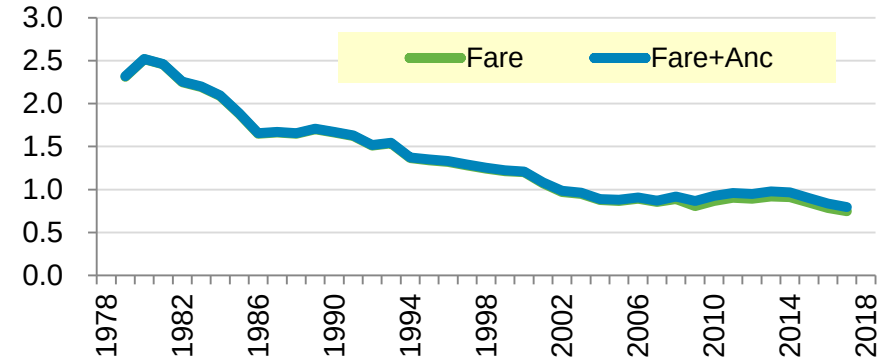
As Real Airfares Have Plunged, Growth in Flyers = 4.7x Growth in U.S. Population

Ancillary Services Included, 2017 Domestic Air Travel Was ~42% Cheaper Than in 1980

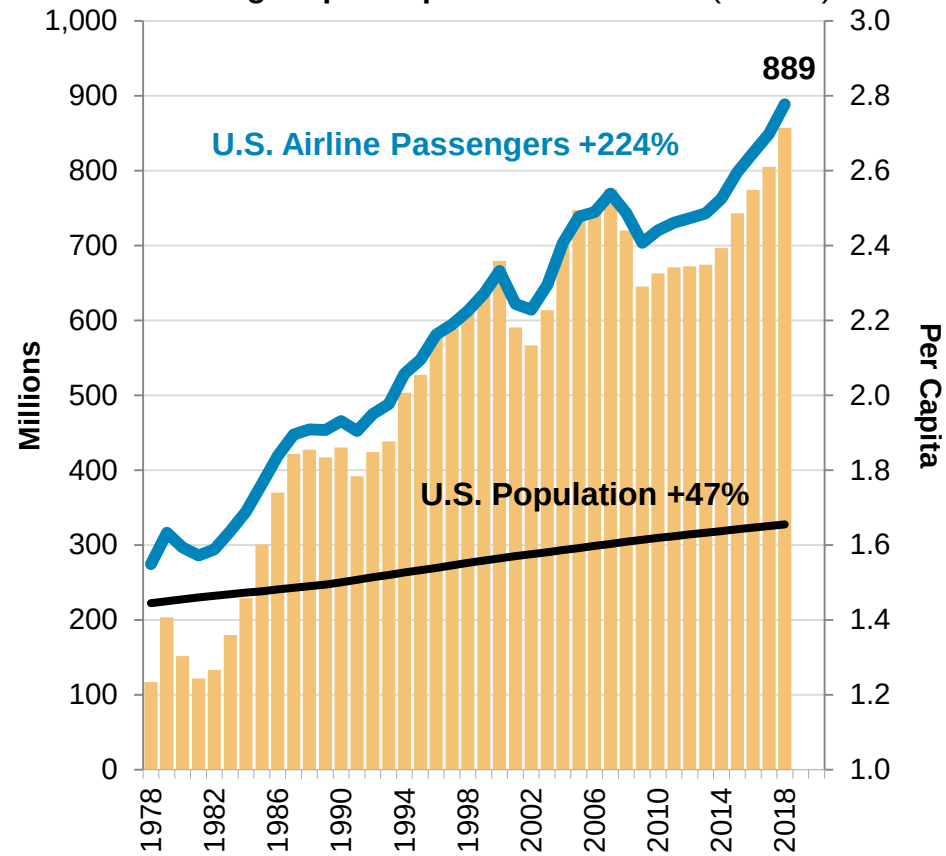
Domestic US R/T Price (in CY2017 Dollars)



Domestic US R/T Price (% of Disposable Personal Inc.)



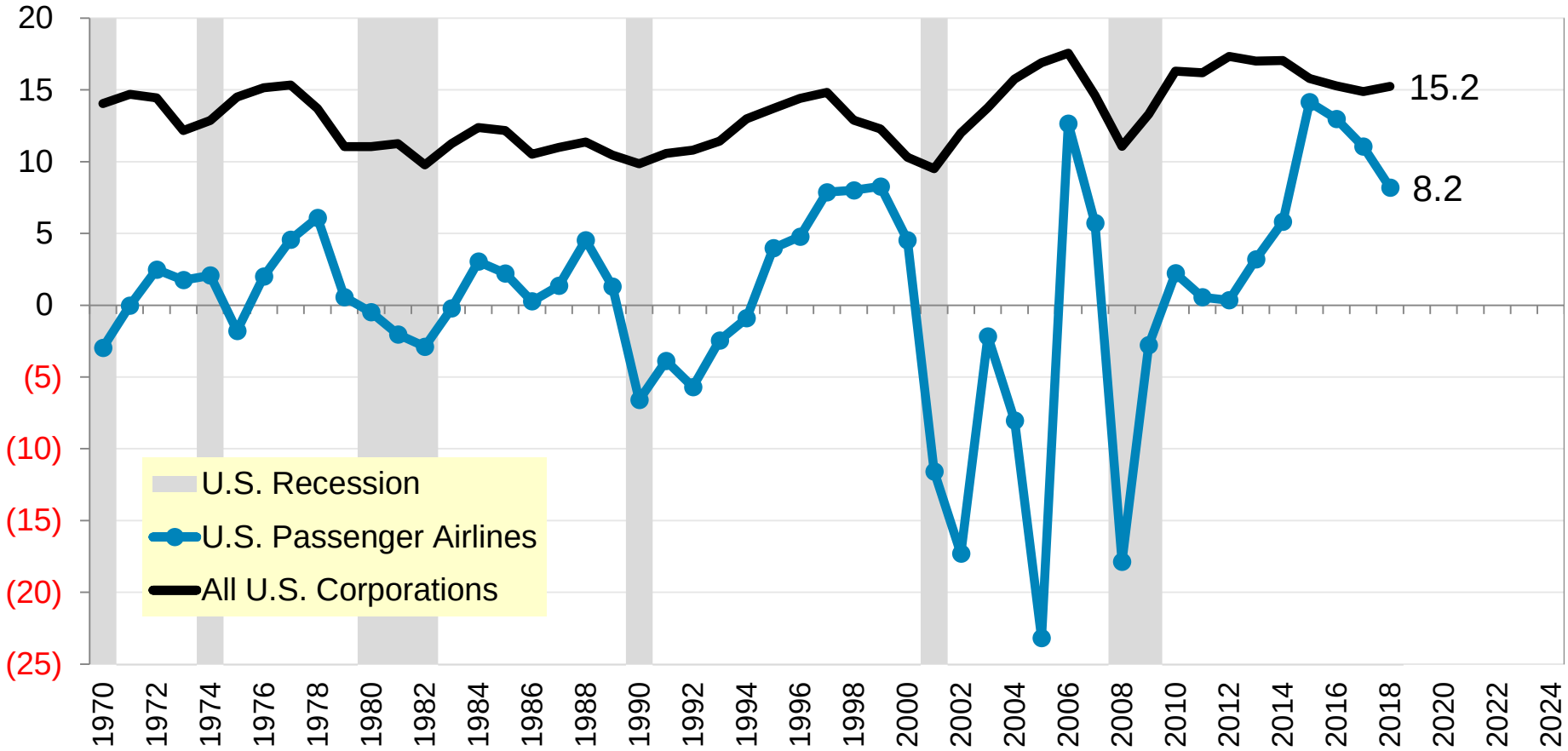
Passengers per Capita Have Doubled (+120%)



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

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

Pre-Tax Profit Margin (%) *Gap Widened* in 2016 and 2017, Widening Further in 2018

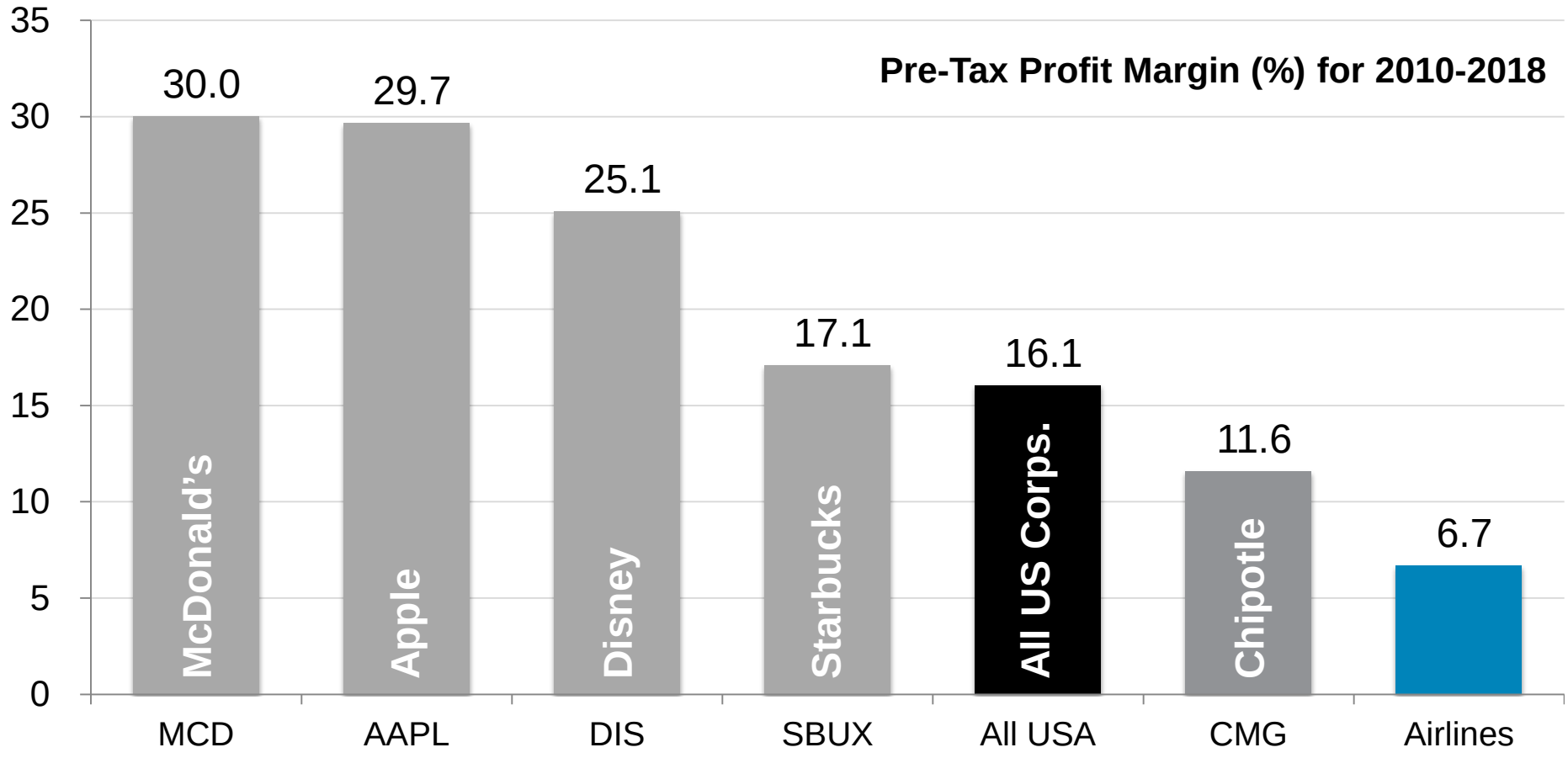


Source: ATA Annual Reports (1970-1976), A4A Passenger Airline Cost Index (1977-present); Bureau of Economic Analysis

Note: Recessions highlighted in gray

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

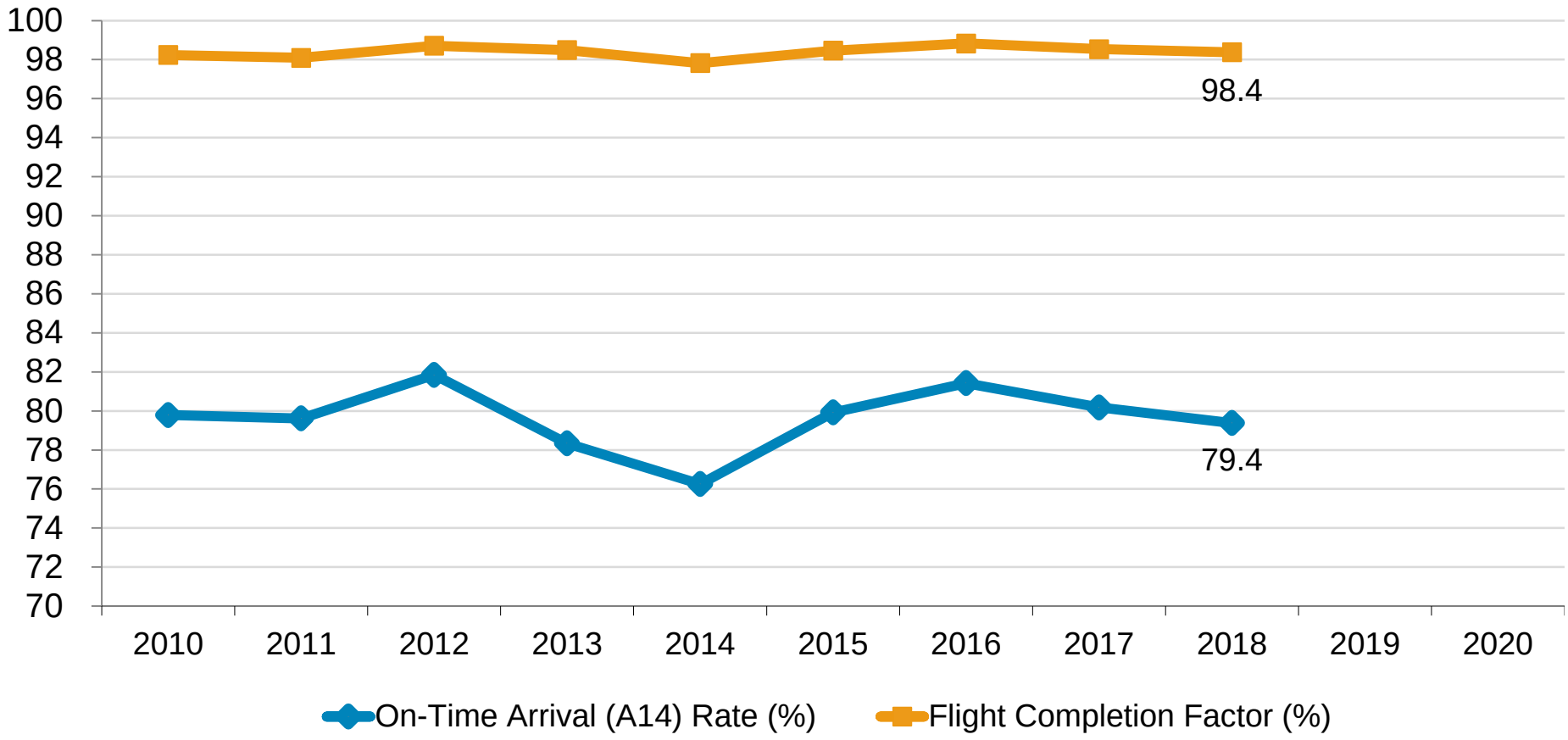
In Current U.S. Business Cycle, Airline Margins Are Less Than Half the U.S. Average



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

Flight Completion Factor Continues to Exceed 98 Percent Amid Difficult Weather

On-Time Arrival Rate Hovering Just Below 80 Percent; Should Improve in 2019



Source: Bureau of Transportation Statistics -- for U.S. airlines

* Jan-Oct

2018 Posed Some Significant Operating Challenges

Power Outages/Airport Equipment:
Jan 1 CBP nationwide outage; Jan 7 (JFK T4 water main break)
Aug 16 – DCA loses power for more than 1 hour, affecting about two dozen flights
Sep 16 – PHX T4 multi-hour closure due to suspicious abandoned rental car
Oct 9 – law enforcement asked Frontier 1612 passengers to exit plane to handle "emotional support squirrel"

Airport Construction: ATL/CHI/DCA/DFW/HNL/HOU/LAX/MCO/MIA/NYC/PHL/PHX/SAN/TPA

Major Weather

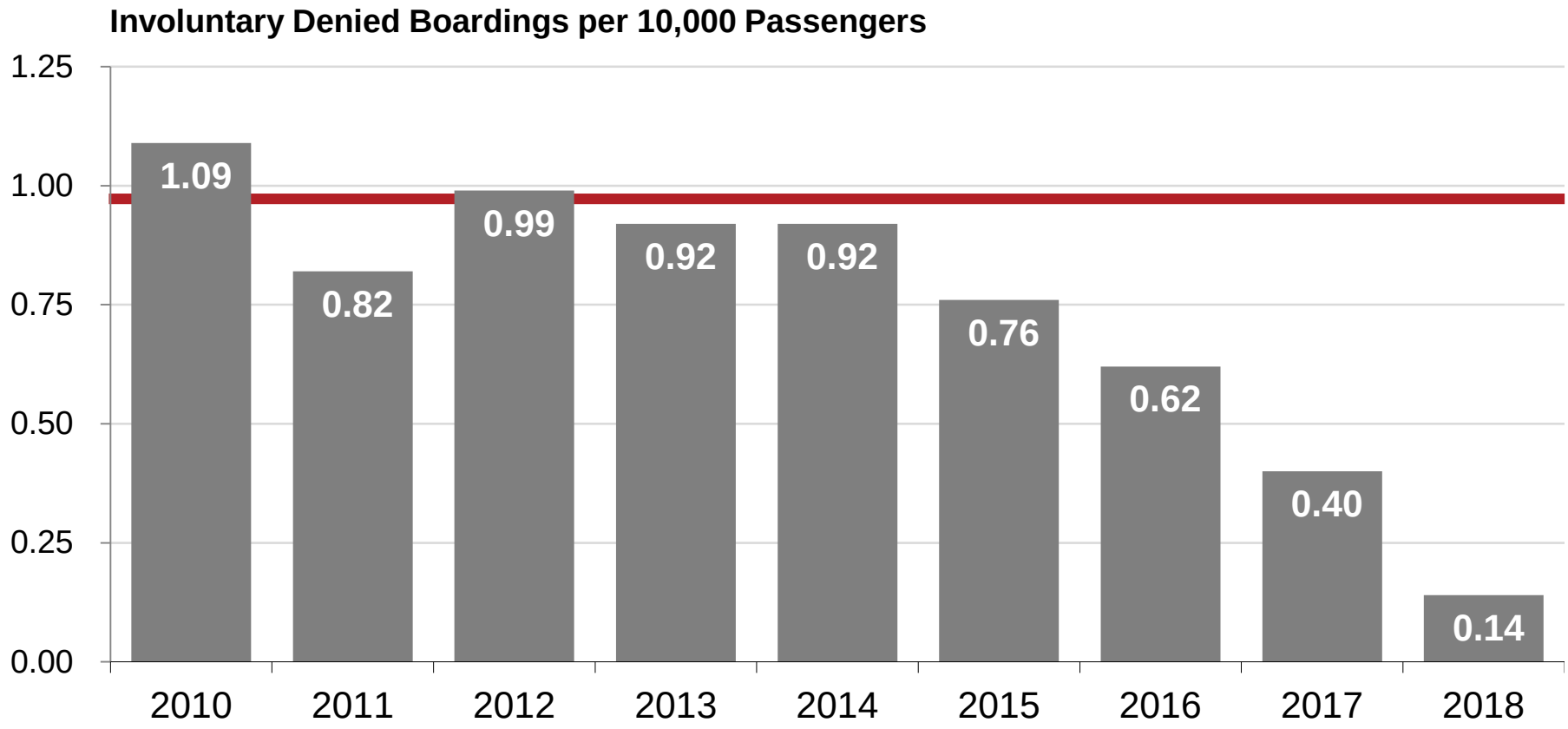
- Jan 3-5 ("bomb cyclone"), 7-8, 12, 16-18, 21-22
- Feb 4-5, 7, 9, 11, 15, 20
- Mar 2 (Winter Storm Riley) 7 (Quinn) 13 (Skylar) 20-22 (Toby)
- Apr 4 (Mid-Atlantic/Northeast), 14-16 (MSP/ORD/CLT/NE), 25 (NE)
- May 3 (CHI/DAL t-storms), 14-16 (CHI/mid-Atlantic/NE t-storms), 31 (SE/mid-Atlantic t-storms)
- Jun 18-20 (rainstorms and low visibility in Chicago/mid-Atlantic), 26 (CHI t-storms)
- Jul 1 (CHI storms), 15 (NYC/PHL storms), 17 (NE/mid-Atlantic), 22 (MCO), 23 (DEN), 27 (NE/mid-Atlantic)
- Aug 2-3, 7-8 (t-storms in mid-Atlantic/NE/CHI), 11 (NYC/PHL), 13-14 (mid-Atlantic/NE/DAL), 17 (NE)
- Sep 3 – flooding caused massive delays at ORD; 11-17 – Hurricane Florence (Carolinas)
- Oct 10 – Hurricane Michael battered Florida panhandle, forcing the cancellation of several hundred flights
- Nov 15-16 – snow/ice affected airports from Mid-Atlantic to NE; 25-26 snowstorm hit Chicago and Plains
- Dec 9-10 – winter storm hit North Carolina; 26-28 thunderstorms hit Dallas and Houston

Air Traffic Control: Understaffing at many major facilities; critically low staffing at New York TRACON*

* Staffing is routinely cited as the basis for many traffic management initiatives (ground delay programs, ground stops, airspace flow programs, miles-in-trail) across the NAS
Source: A4A research, FAA Air Traffic Organization and masFlight (subsidiary of Global Eagle)

U.S. Airlines Continue to Reduce the Rate of Involuntary Denied Boardings

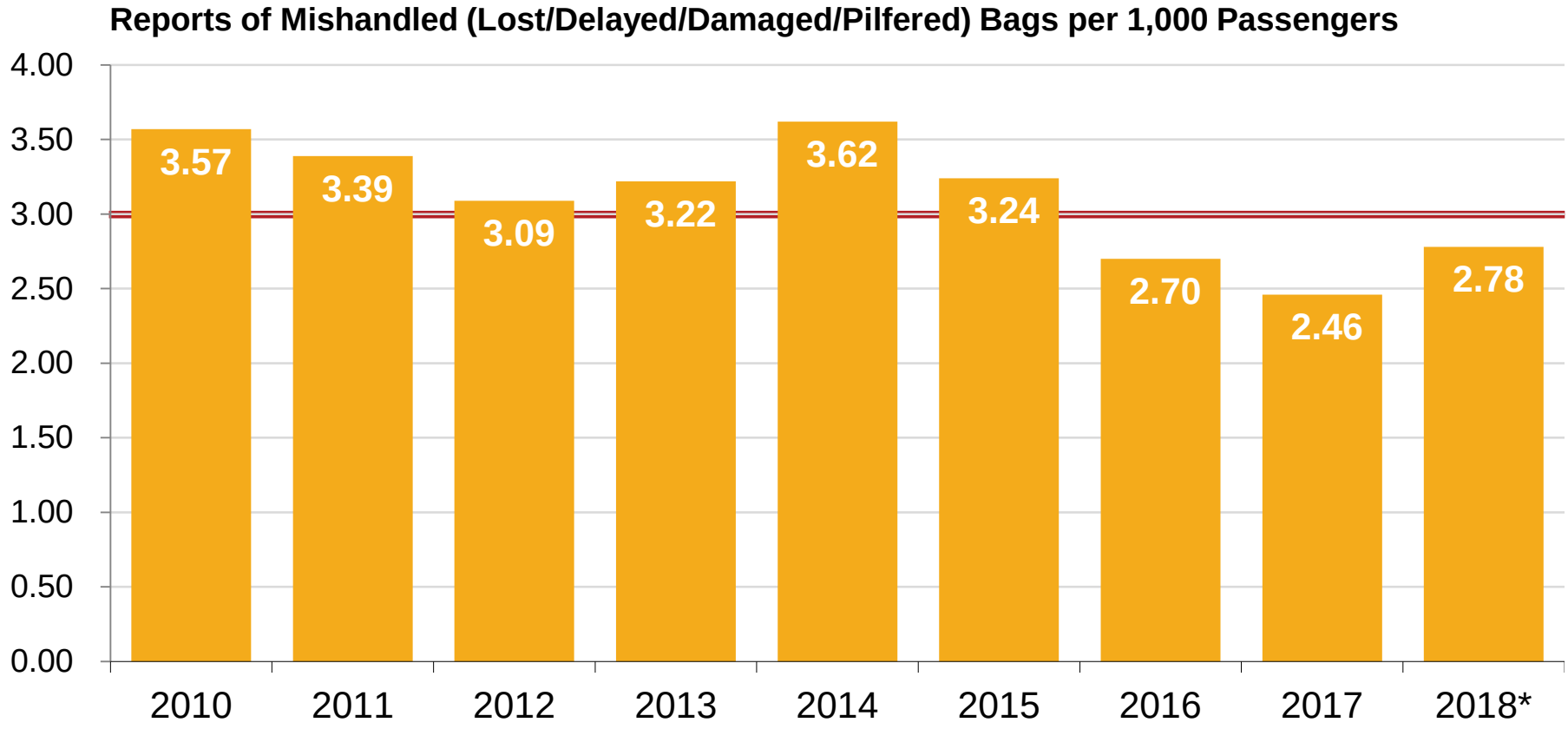
2018 = Best-Ever Recorded by DOT



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

Baggage-Handling Much Improved Over Past Few Years

Rate of Mishandling Remains Low Despite More Frequent/Severe Storms

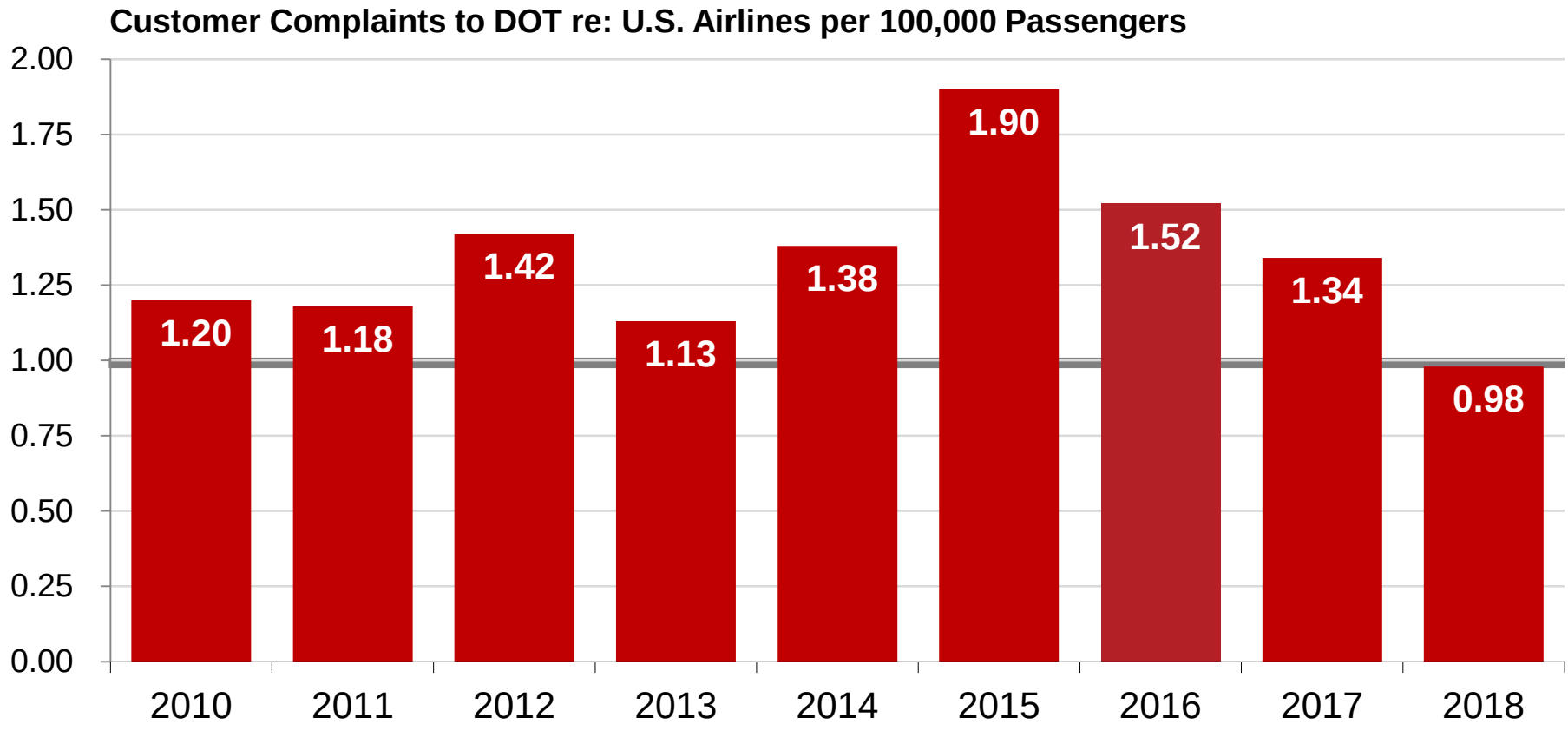


Sources: DOT *Air Travel Consumer Report (*http://www.dot.gov/airconsumer/air-travel-consumer-reports)

* Jan-Nov

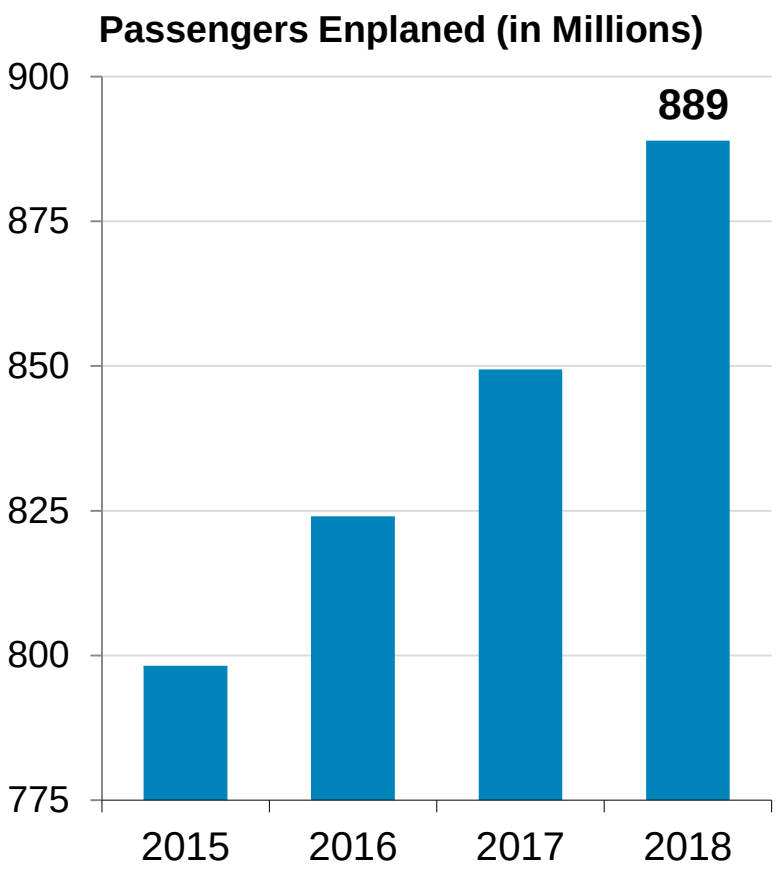
The Rate of Customer Complaints Fell for the Third Straight Year in 2018

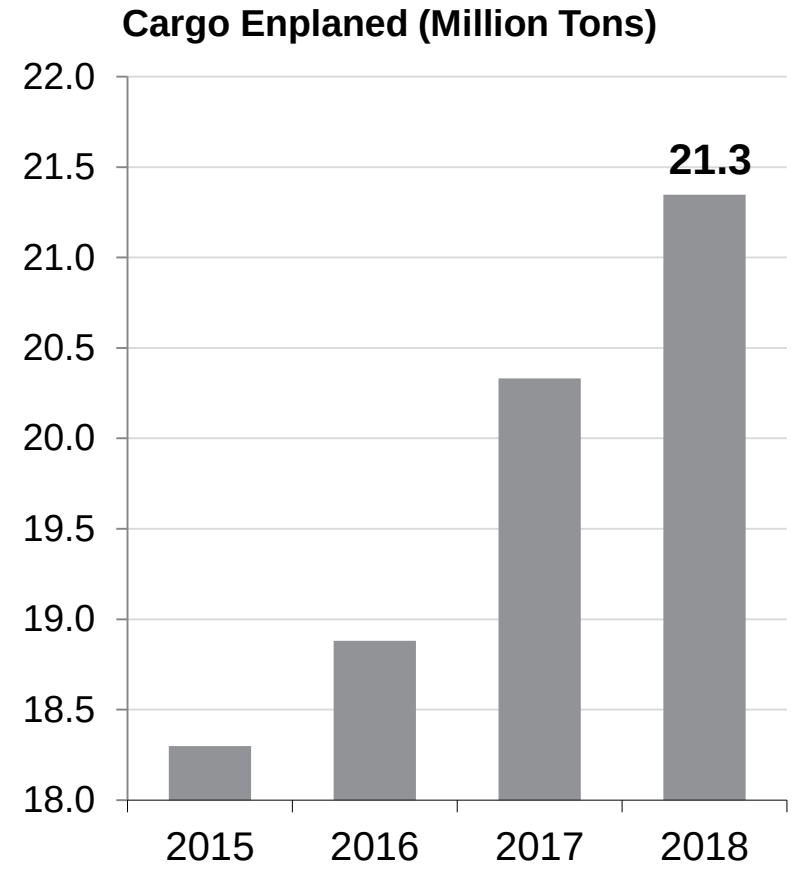
Low Fares, Improved Communications, Online IROPS Resolution, Fewer Involuntary DBs



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

U.S. Airline Passenger and Cargo Volumes Reached All-Time Highs in 2018

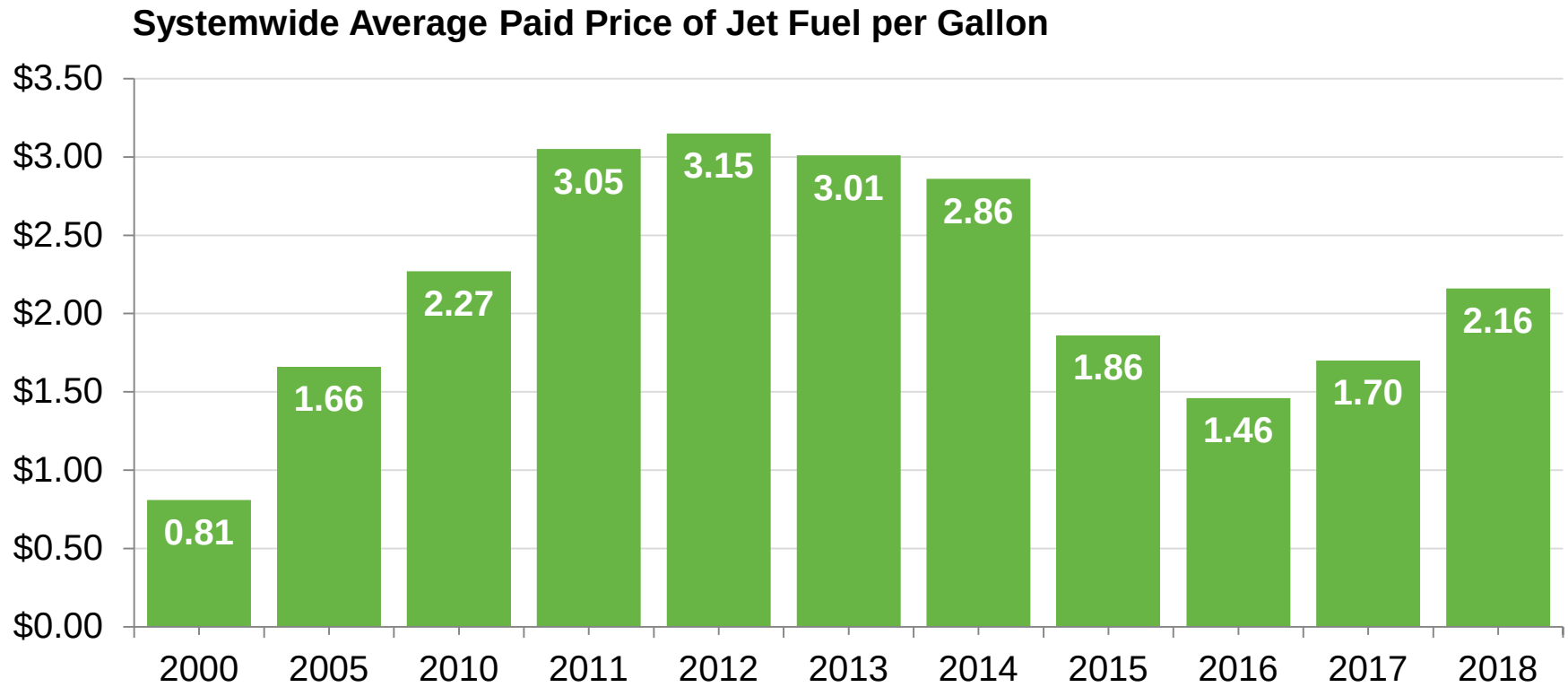




Source: Bureau of Transportation Statistics – T1 for scheduled service-passengers and T100 for all services (scheduled and nonscheduled) cargo (freight and mail)

Jet-Fuel Prices Creeping Up Again

A Penny per Gallon per Year Equates to ~$200M in U.S. Airline Industry Fuel Expenses

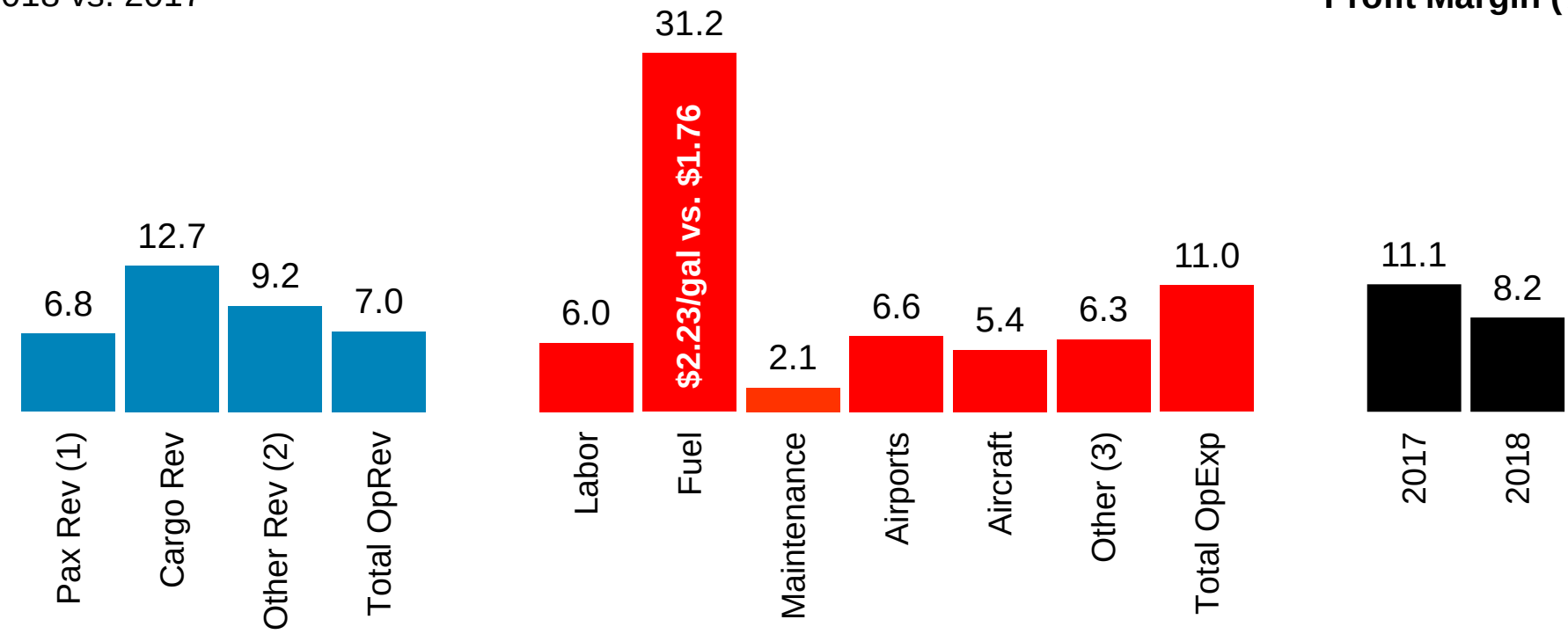


Source: A4A and Bureau of Transportation Statistics (all U.S. carriers, scheduled an nonscheduled services)

2018 Expenses Rose Faster Than Revenues, Reducing Profitability Yet Again

Carriers Faced Cost Pressure in Every Major Category, Driving Margins Lower in 2018

Change (%) in Operating Revenues and Expenses
2018 vs. 2017



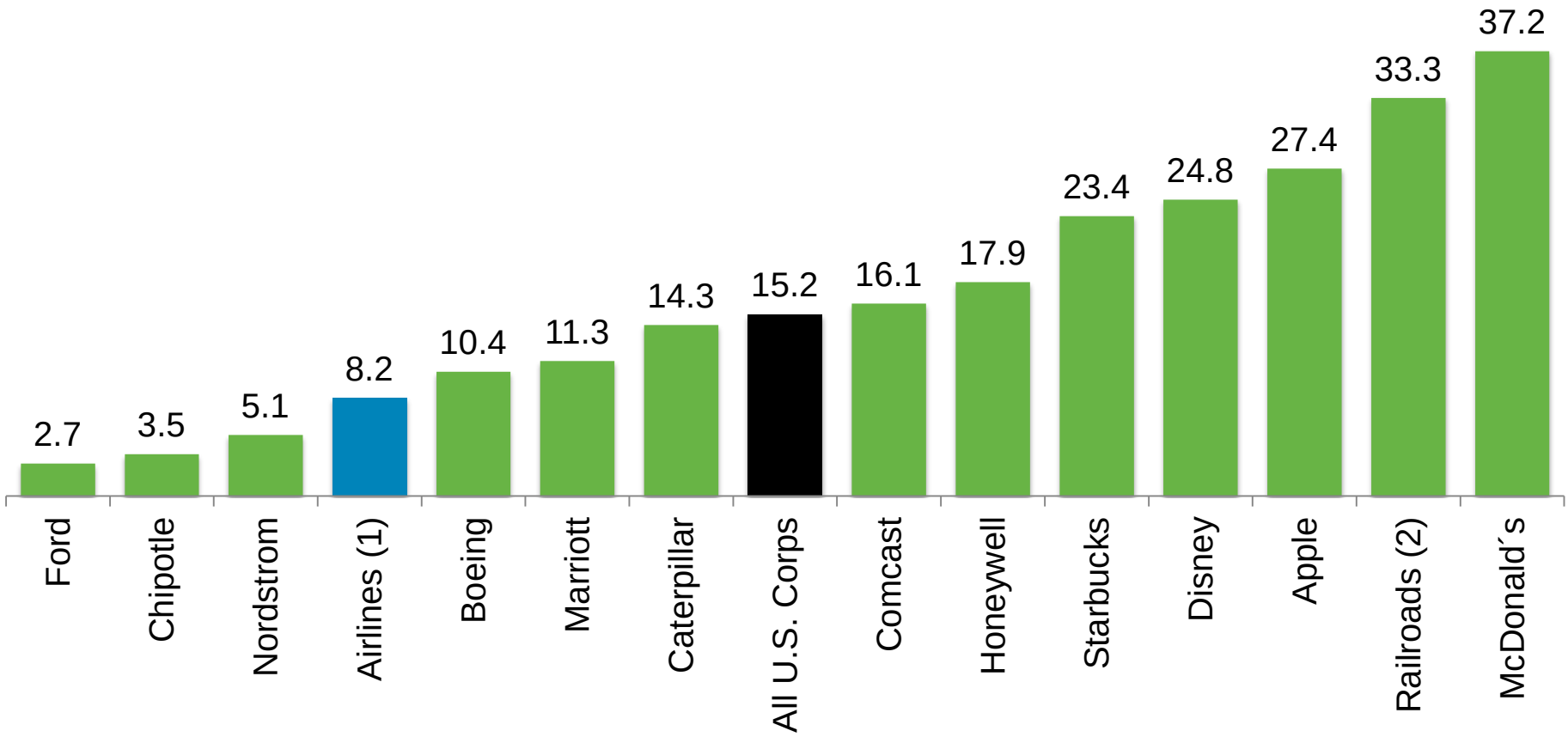
Pre-Tax Profit Margin (%)

1. Traffic (revenue passenger miles) up 4.7 percent; yield (revenue per passenger-mile flown) up 1.9 percent; U.S. CPI up 2.4 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

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

Pre-Tax Profit Margin (% of Operating Revenues)



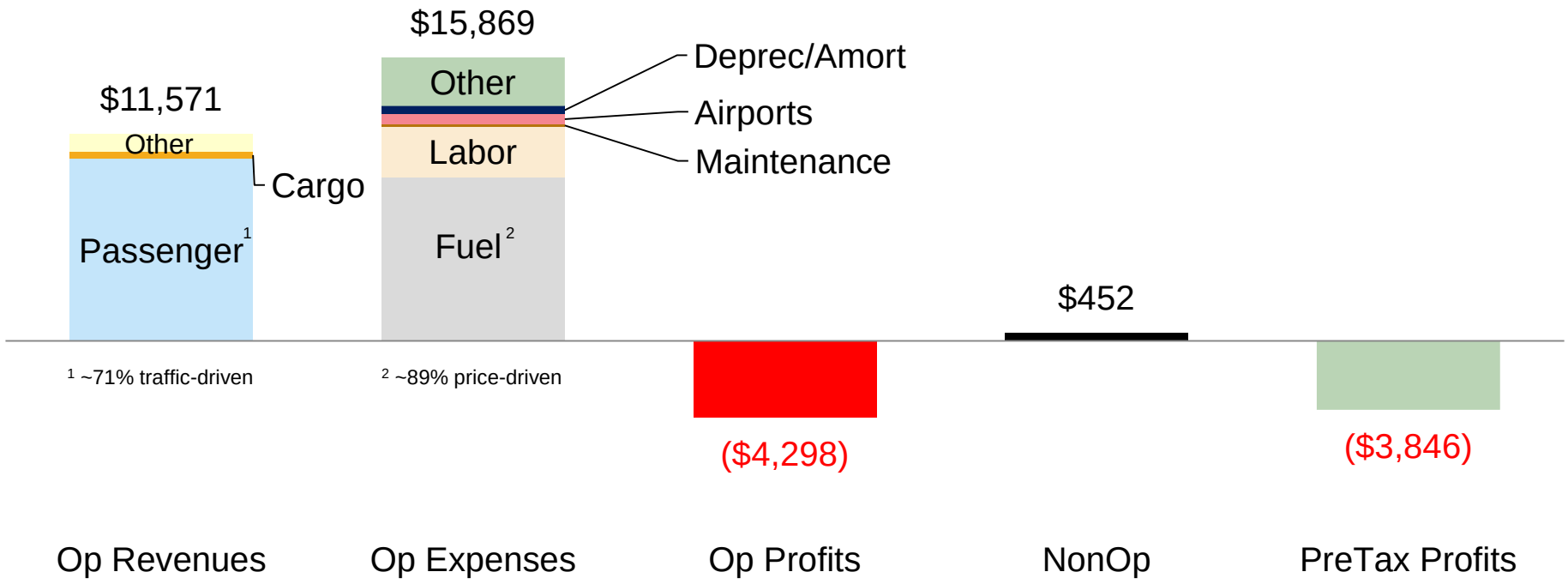
[1] Alaska, Allegiant, American, Delta, Hawaiian, JetBlue, Southwest, Spirit and United
[2] CSX, Norfolk Southern and Union Pacific

Source: Company SEC filings

Airlines Recovered $0.73 in Revenue for Every $1.00 Increase in Operating Costs

Fuel Alone Accounted for 58 Percent of the Year-Over-Year Increase in Costs

Change ($ Millions) in Revenues and Expenses – 2018 vs. 2017



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

Airlines Utilize a Wide Array of Tools to Improve Profitability Amid Rising Costs

Increase fuel efficiency (reduce consumption per unit of flying)

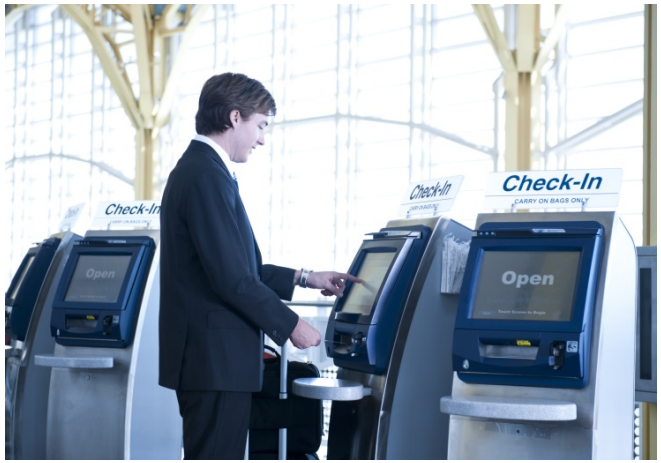
- Continue to replace older (often smaller) aircraft with typically larger, next-generation or re-engined aircraft
- Deploy state-of-the-art flight planning/navigation software to optimize airborne movement of aircraft

- Utilize taxi-management technologies – and single-engine taxi – to minimize ground-based fuel burn
- Consistently employ ground power while parked at gate instead of aircraft auxiliary power unit (APU)
- Reduce onboard weight (e.g., lighter materials/structures, inflight entertainment systems, excess fuel)

Airlines Utilize a Wide Array of Tools to Improve Profitability (Cont'd)

Reduce or contain non-fuel costs

- Deploy customer-preferred technologies (e.g., airport kiosks for self-tagging of luggage, airline apps for passenger modification of itinerary in lieu of agents)



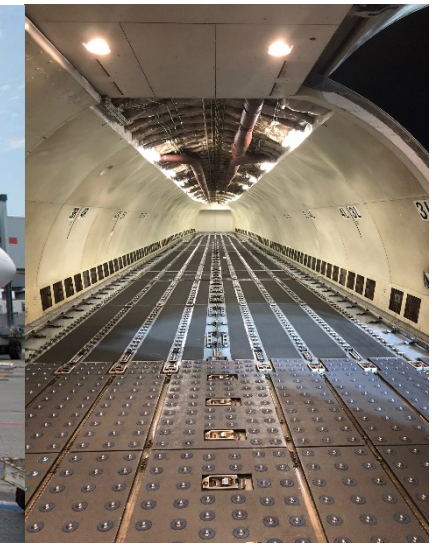
- Drive more bookings to lower-cost direct distribution channels (e.g., website, app)
- Trim management/nonunion headcount via attrition, buy-outs; freeze open positions
- Retire debt to lower interest expense
- Use virtual medicine (e.g., Doctor on Demand) for health care – cost-efficient and highly popular with workforce
- Achieve single pilot/FA contracts – reduce delays/cancels, enable efficient use of aircraft/crews, avoids over-hiring
- Employ new software/methods to improve hotel procurement and manage employee travel bookings

- Insource engine/ground-handling/other work to be performed better/more efficiently (where practicable)
- Negotiate preferred-pricing maintenance contracts enabled by improved scale/credit, recover warranties on aircraft parts, leverage data streams from new aircraft/engines to increase reliability and lower repair/inspection costs

Airlines Utilize a Wide Array of Tools to Improve Profitability (Cont'd)

Generate more revenue

- Carry more passenger traffic or better mix of traffic (corporate/premium), optimize fare/fee structure
- Boost availability/desirability of ancillary products (fleet-wide/faster WiFi, live TV int'l, refurbished clubs)
- Increase credit card sales – attracting new accounts due to larger networks and customer-preferred timings



- Intensify cargo sales efforts and leverage increased belly capacity (and temp controls) offered by new aircraft

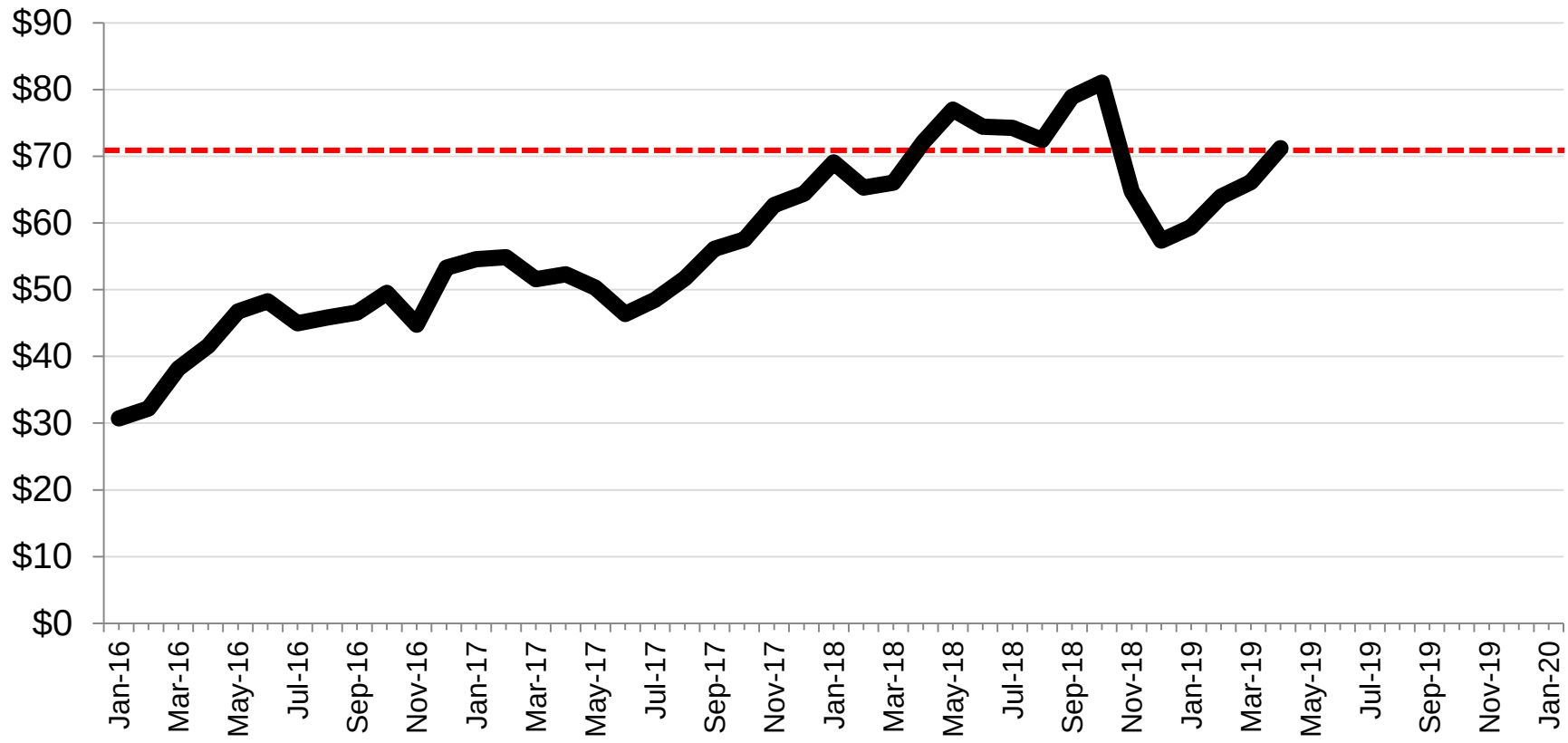
Airlines Utilize a Wide Array of Tools to Improve Profitability (Cont'd)

Hybrid revenue/cost improvements

- Re-optimize route networks – trim unprofitable capacity, defer deliveries, add routes enabled by new aircraft
- Increase utilization of aircraft, ground equipment and gates at hubs and take advantage of new gates coming online at key locations in 2018-2020
- Reduce fleet/subfleet types to lower hiring, training and maintenance costs while increasing both aircraft substitutability and product consistency (for travelers)

Crude-Oil Prices Have Reached Highest Level Since October 2018

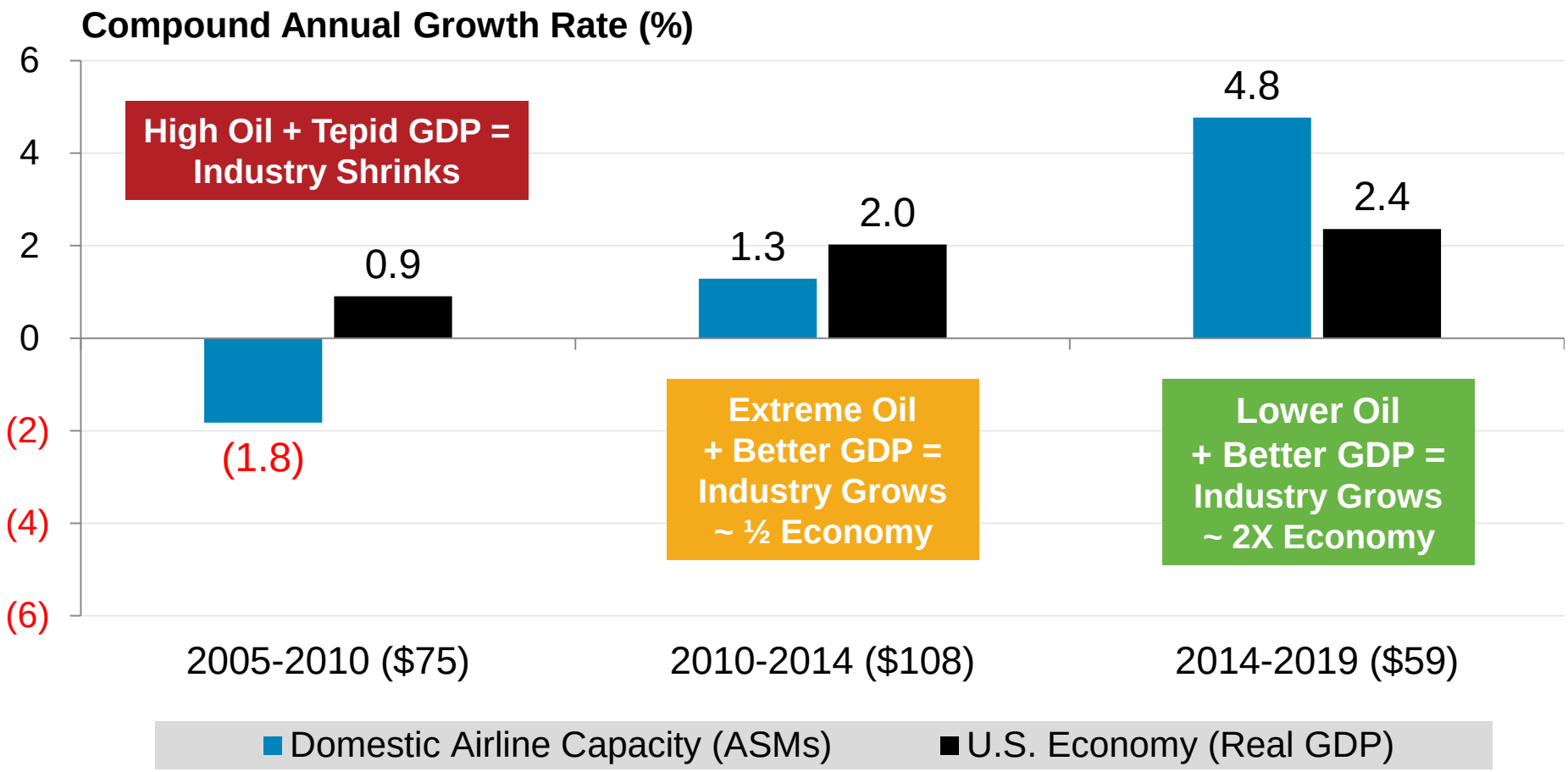
Spot Price of Brent Crude Oil ($ per Barrel)



Source: 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

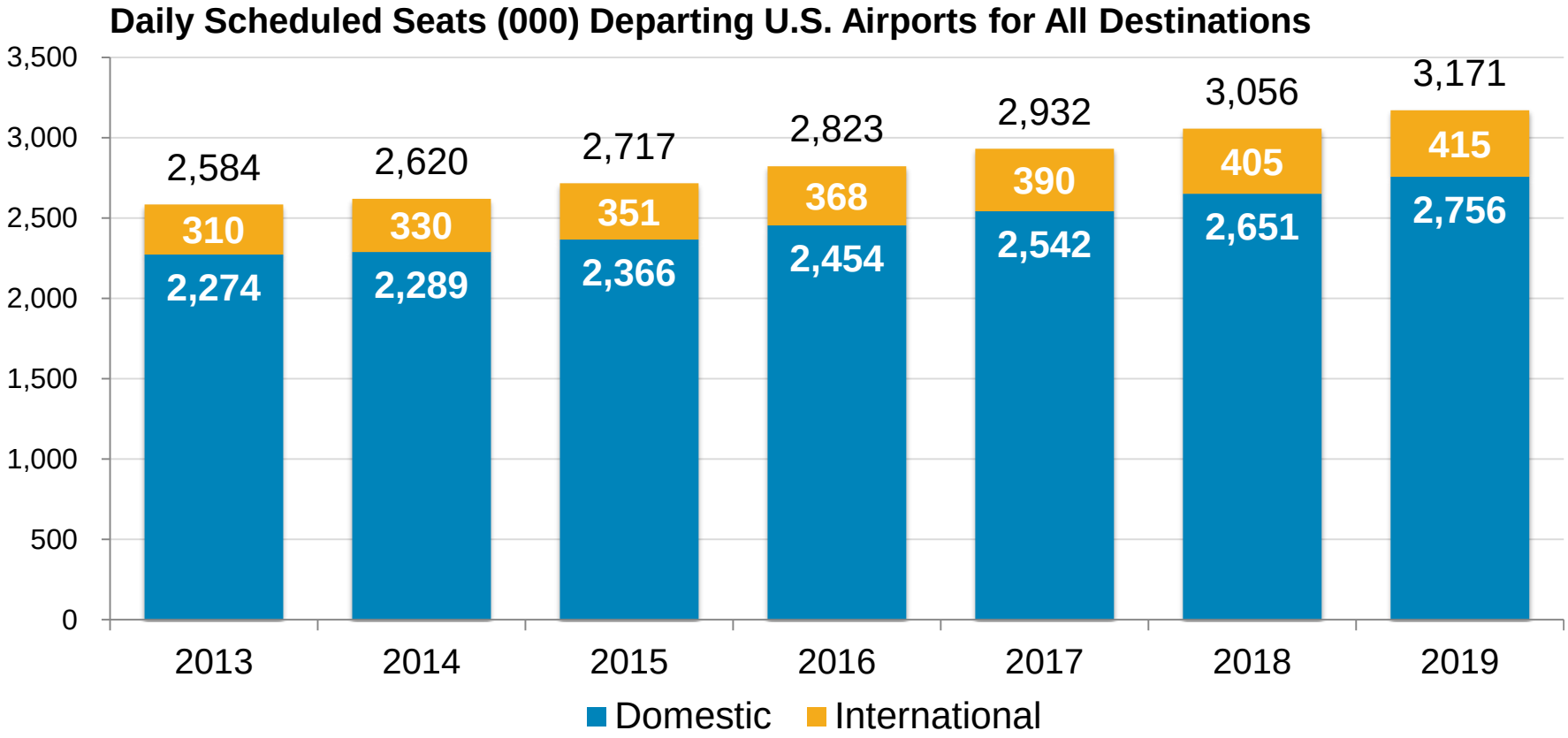


Source: Bureau of Economic Analysis and published airline schedules via Diio Mi

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

Airlines Offering a Record 3.2M Daily Seats From U.S. Airports in 2019

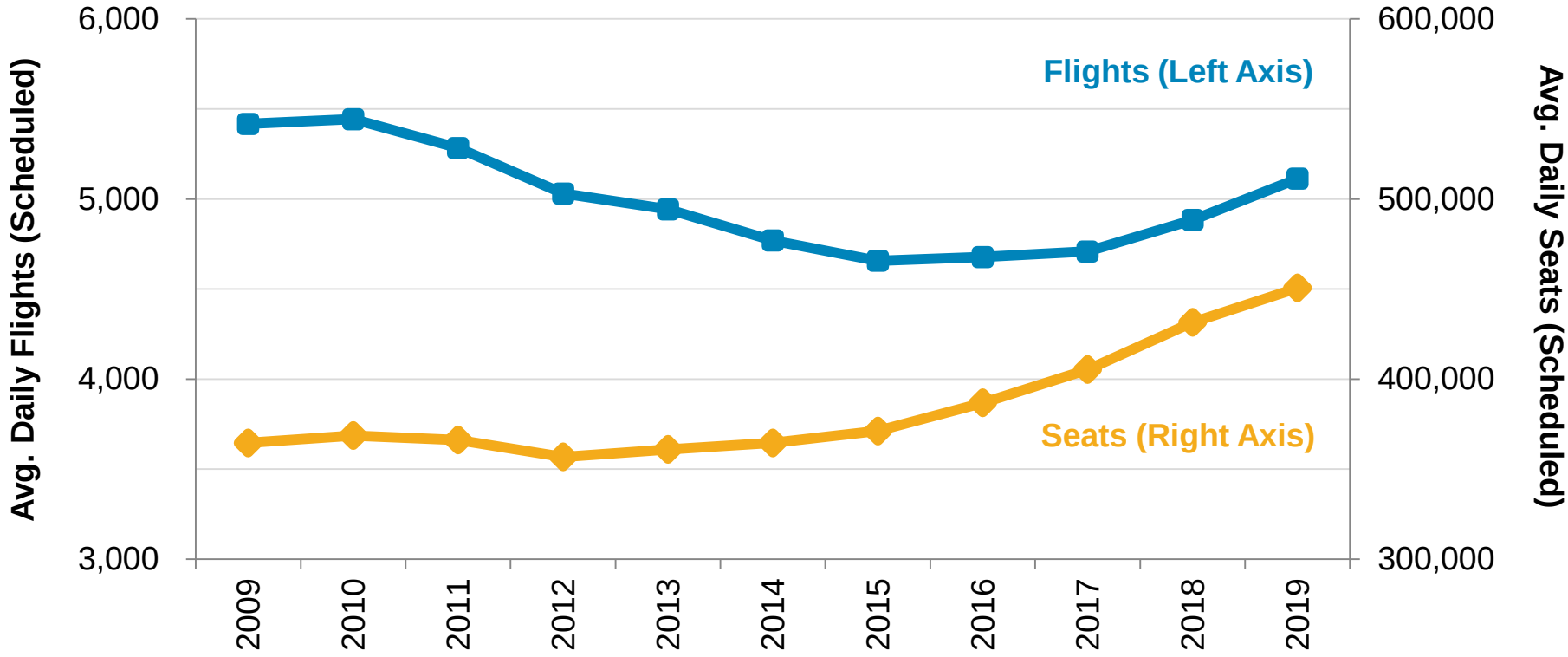
Growth of ~4 Percent in 2018 and 2019



Source: Innovata (via Diio Mi) published schedules as of April 26, 2019, for all airlines

Post-Recession, Scheduled Service in Small Communities* Rising Again in 2019

Small U.S. Airports Seeing Most Flights Since 2011, Most Seats Ever



Notes: Recession (Dec-2007–Jun-2009); FAA pilot qualification (1,500-hour) rule effective Jul-2013; pilot flight/duty/rest rule effective Jan-2014; 2019 is Jan-Sep

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

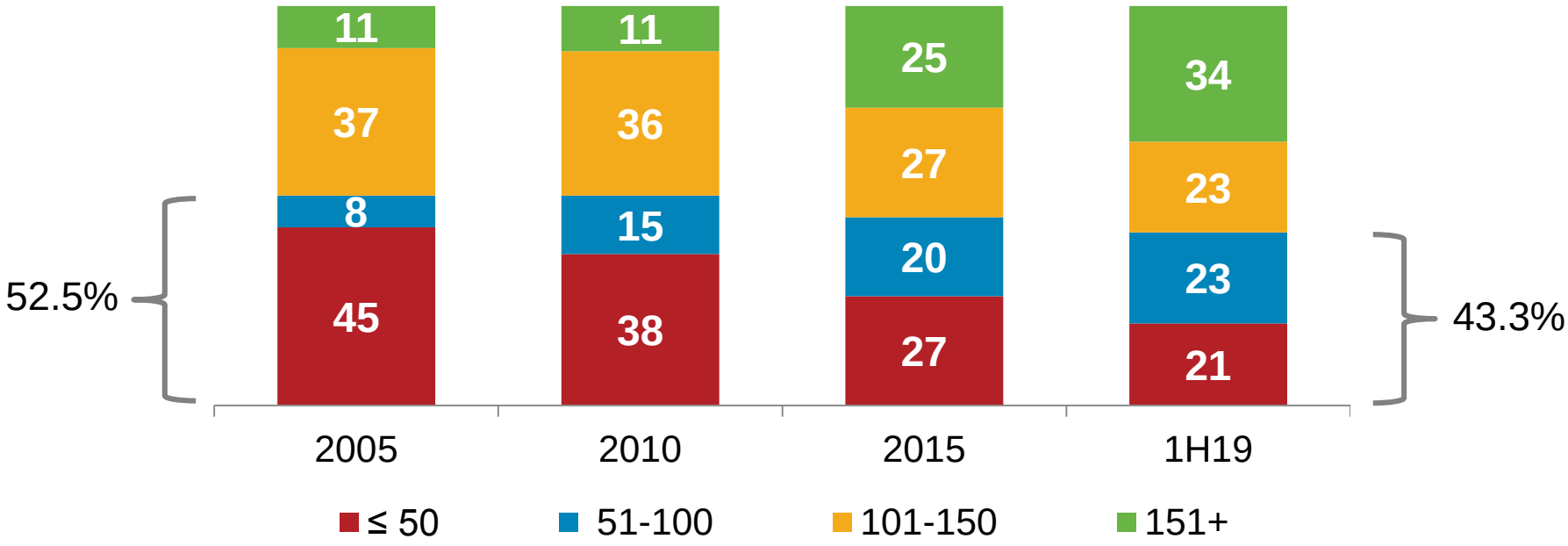
Source: Innovata (via Diio Mi) published schedules as of April 12, 2019, for all airlines providing scheduled passenger service from U.S. airports to all destinations

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

Regionals Now Just 43% of Domestic Departures; Over Half of Those are Large RJs

- Quest for optimal use of pilots, fuel and congested airspace/airfields
- Improving economics of large RJs and lack of new-generation in-production small aircraft
- Rapid growth of carriers with predominantly (or entirely) large aircraft in their fleets

% of Domestic U.S. Departures by Aircraft Size*



Source: Innovata (via Diio Mi) published schedules as of Dec. 14, 2018

* Numbers may not add to 100 due to rounding

When Choosing an Airline, Leisure Travelers Value *Affordability* Above All Else

2018 Rankings Identical to 2017 (Schedule Solidly Second, Followed by Reliability)

*When traveling **for personal reasons**, how would you rank the following in terms of choosing **which airline to fly**, with 1 being your first priority and 9 being your last priority?*

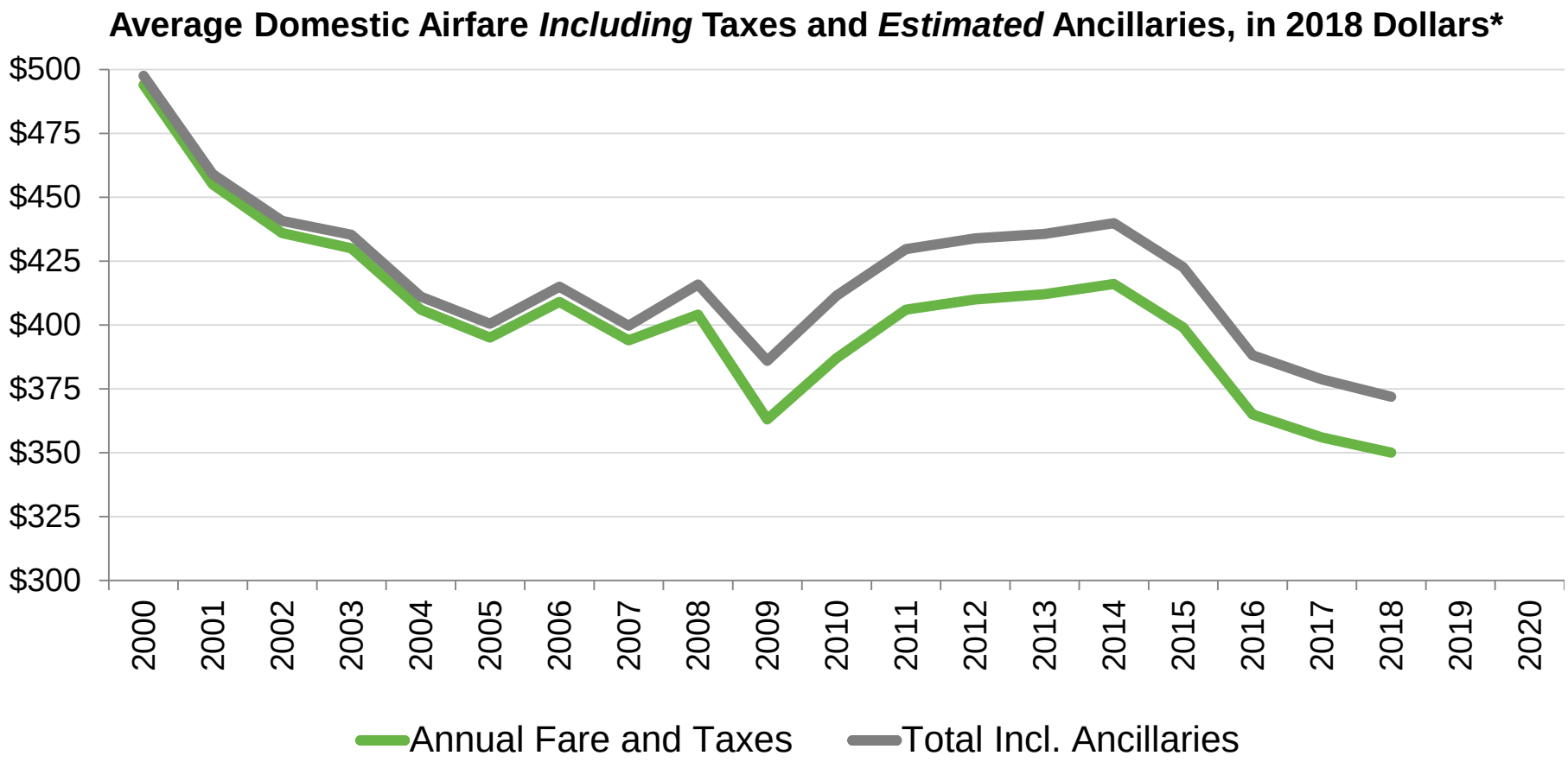
(Base = all 2018 flyers with **at least 1 leisure trip**)

Criteria	2018 (2017)	Score
Affordability (airfare / ancillaries / taxes)	1 (1)	2.87 (2.50)
Flight schedule (routes / timings)	2 (2)	3.40 (3.12)
Operational reliability (e.g., on-time performance)	3 (3)	4.33 (4.22)
Airline seat comfort	4 (4)	4.63 (4.54)
Customer service (reservationists / gate agents / flight attendants)	5 (5)	5.21 (4.82)
Airline frequent flyer program (earn / redeem / upgrade / status)	6 (6)	5.19 (5.19)
Quality of inflight amenities (e.g., food / entertainment)	7 (7)	5.32 (5.32)
Environmental responsibility (fuel efficiency / recycling / sustainability)	8 (8)	6.28 (6.28)
WiFi (availability / speed / reliability)	9 (n/a)	6.79 (n/a)

Source: Ipsos survey of American adults (January 2019)

2018 Inflation-Adjusted Fares Were Lowest Ever Recorded by DOT

Fares/Taxes/Ancillaries Down 10 Percent From 2010, 25 Percent From 2000

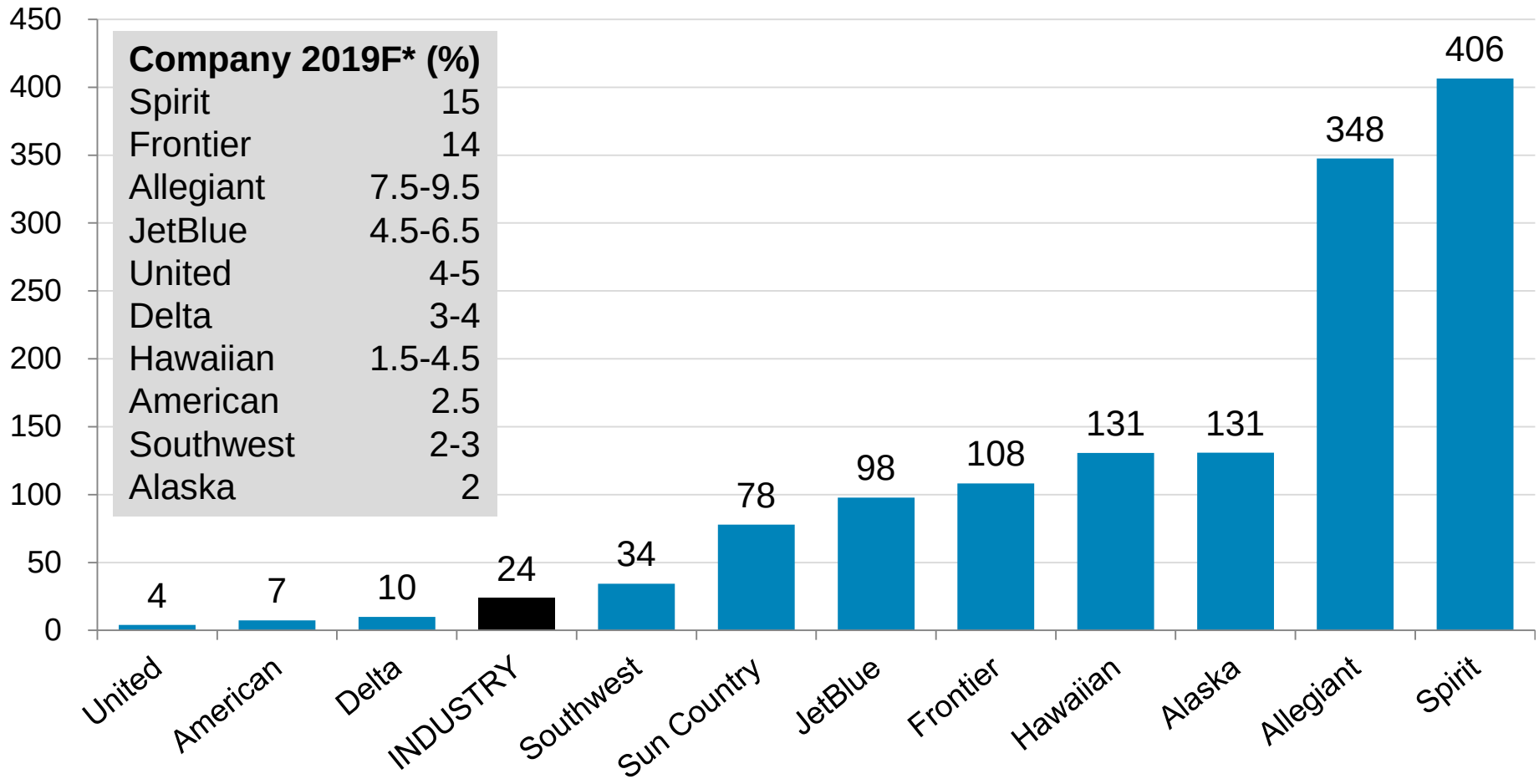


Source: A4A (ancillaries) and Bureau of Transportation Statistics (fares and taxes)

* Adjusted for inflation; round trips, but includes one-ways if no return purchased

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

Change (%) in Systemwide Scheduled Capacity (ASMs) – 2007 to 2019



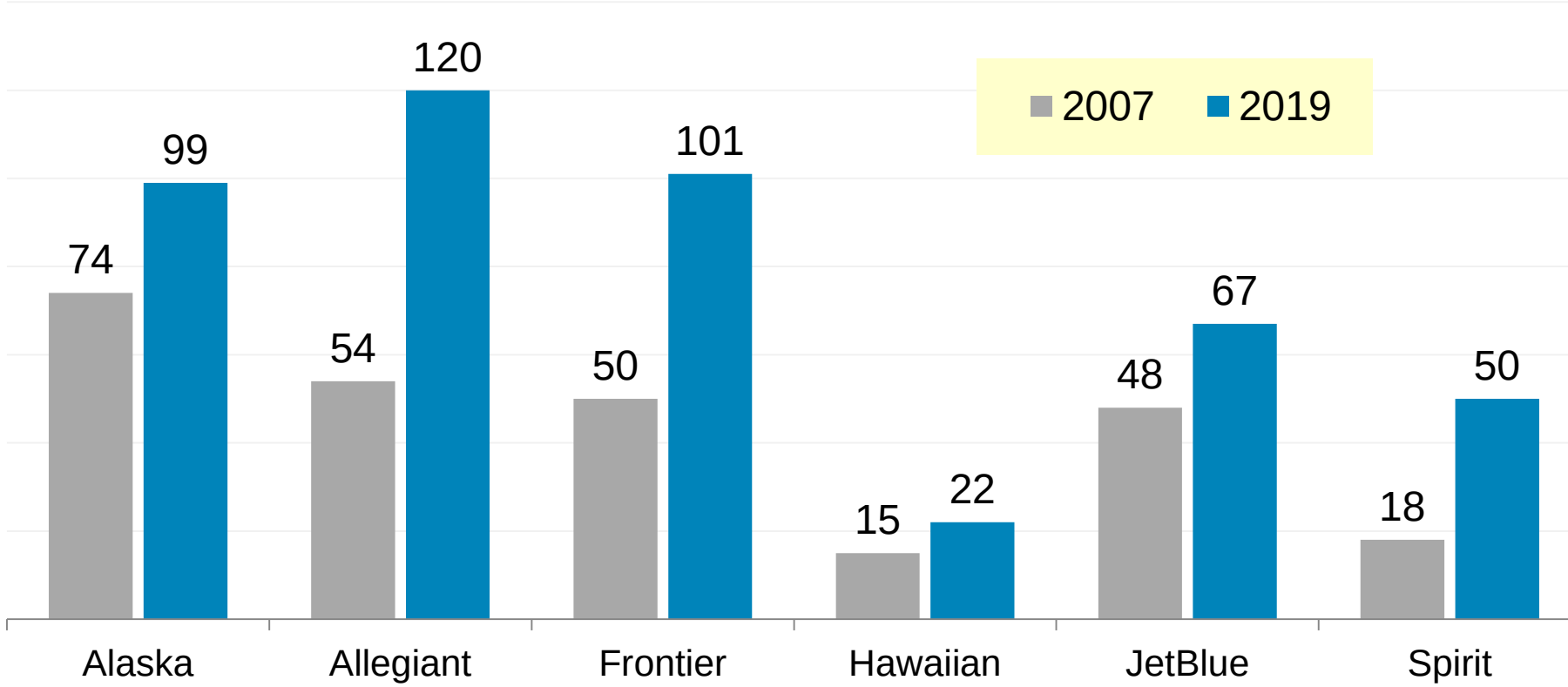
Source: Innovata (via Diio Mi) schedules as of April 19, 2019, for selected marketing airlines including predecessors

* As of April 26, 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*

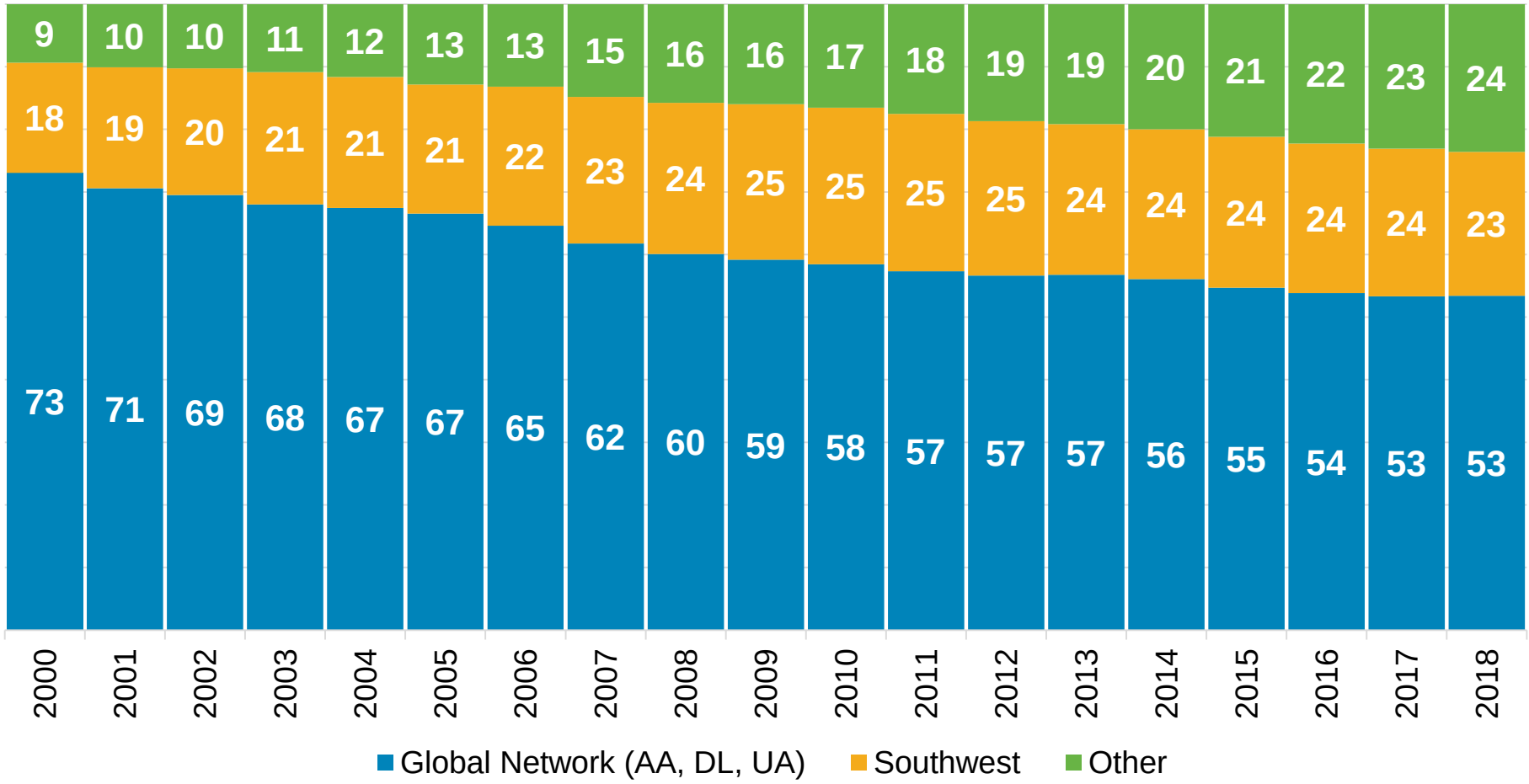


Source: Innovata (via Diio Mi) schedules as of March 15, 2019, for selected marketing airlines including predecessors

* July 15-21 of each year

From 2000-2018, Global Network Carrier Domestic Share Fell From 73% to Just 53%

Share (%) of U.S. Domestic Origin-and-Destination Passengers by Airline Business Model



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/Others* Now Carry Significant Share of Passengers in Large-Carrier Hub Cities

Percentage of Domestic Origin-Destination (O&D) Passengers [Sorted by 2017 Share]

Hub City	Airport(s)	2000	2007	2017
Charlotte, NC	CLT	2.0	12.2	8.8
Philadelphia, PA	PHL	8.4	30.4	27.2
Atlanta, GA	ATL	15.4	29.0	28.8
Detroit, MI	DTW	14.9	29.5	29.8
Minneapolis/St. Paul, MN	MSP	12.5	18.6	30.1
New York, NY-NJ	EWR/JFK/LGA	10.1	30.1	30.8
Salt Lake City, UT	SLC	26.0	33.6	31.1
Dallas/Fort Worth, TX	DAL/DFW	26.6	26.8	37.1
Chicago, IL	MDW/ORD	26.9	31.2	37.6
Houston, TX	HOU/IAH	33.5	39.9	44.0
Miami, FL	FLL/MIA	20.6	37.5	45.1
Washington, DC	BWI/DCA/IAD	20.3	38.3	47.0
Phoenix, AZ	PHX	40.6	46.3	49.9
Los Angeles, CA	BUR/LAX/LGB	36.0	44.5	52.4
San Francisco, CA	OAK/SFO	34.1	45.6	54.4
Denver, CO	DEN	15.5	39.5	57.2

Source: A4A analysis of DOT Origin-Destination Survey (Data Bank 1B) via airlinedata.com

* Airlines other than American, Delta, United and their predecessors

Competitive Choices for Domestic Flyers Have Continued to *Increase*

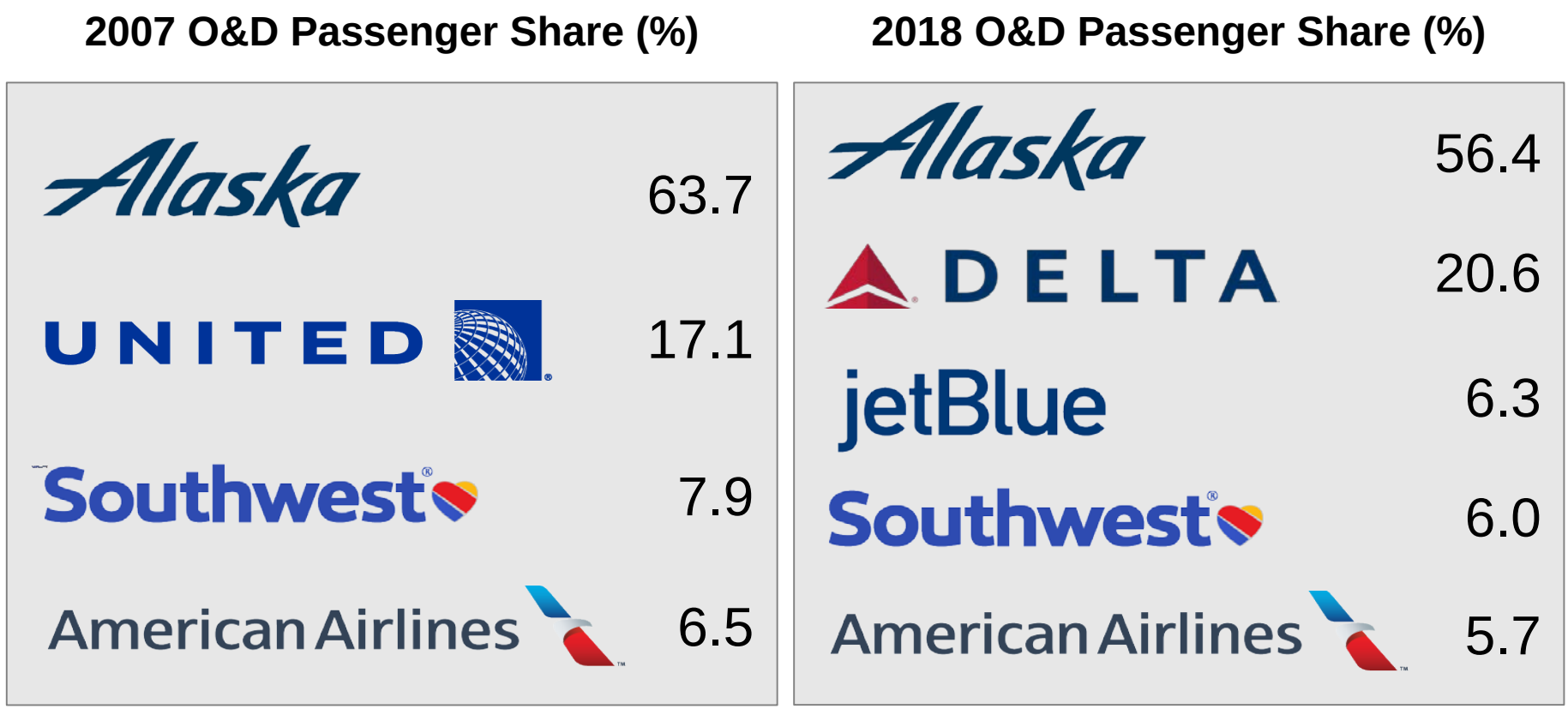
Contrary to Some Assertions, Traffic Analysis Shows *More* Competitors on U.S. City Pairs

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)

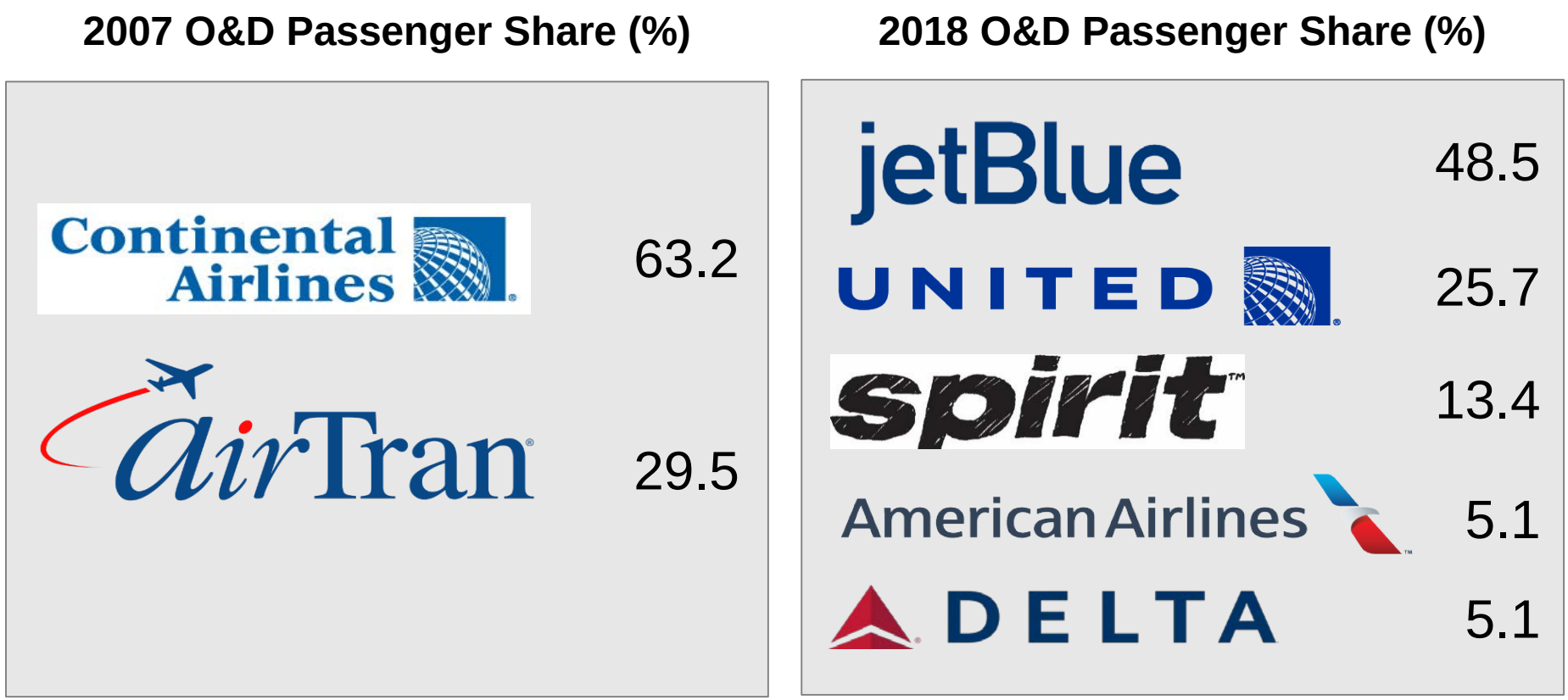
Los Angeles-Seattle Is Among Countless Domestic City Pairs on Which Competition* Has *Increased* Since 2007 (Real Fares *Down* 20%, Passengers *Up* 60%)



Source: DOT Data Bank 1B and Innovata published schedules via Diio Mi

* Defined as carrying at least 5 percent of O&D passengers between BUR/LAX/LGB and SEA

Boston-Akron/Cleveland Is Among Countless Domestic City Pairs on Which Competition* Has *Increased* Since 2007 (Real Fares *Down* 20%, Passengers *Up* 21%)

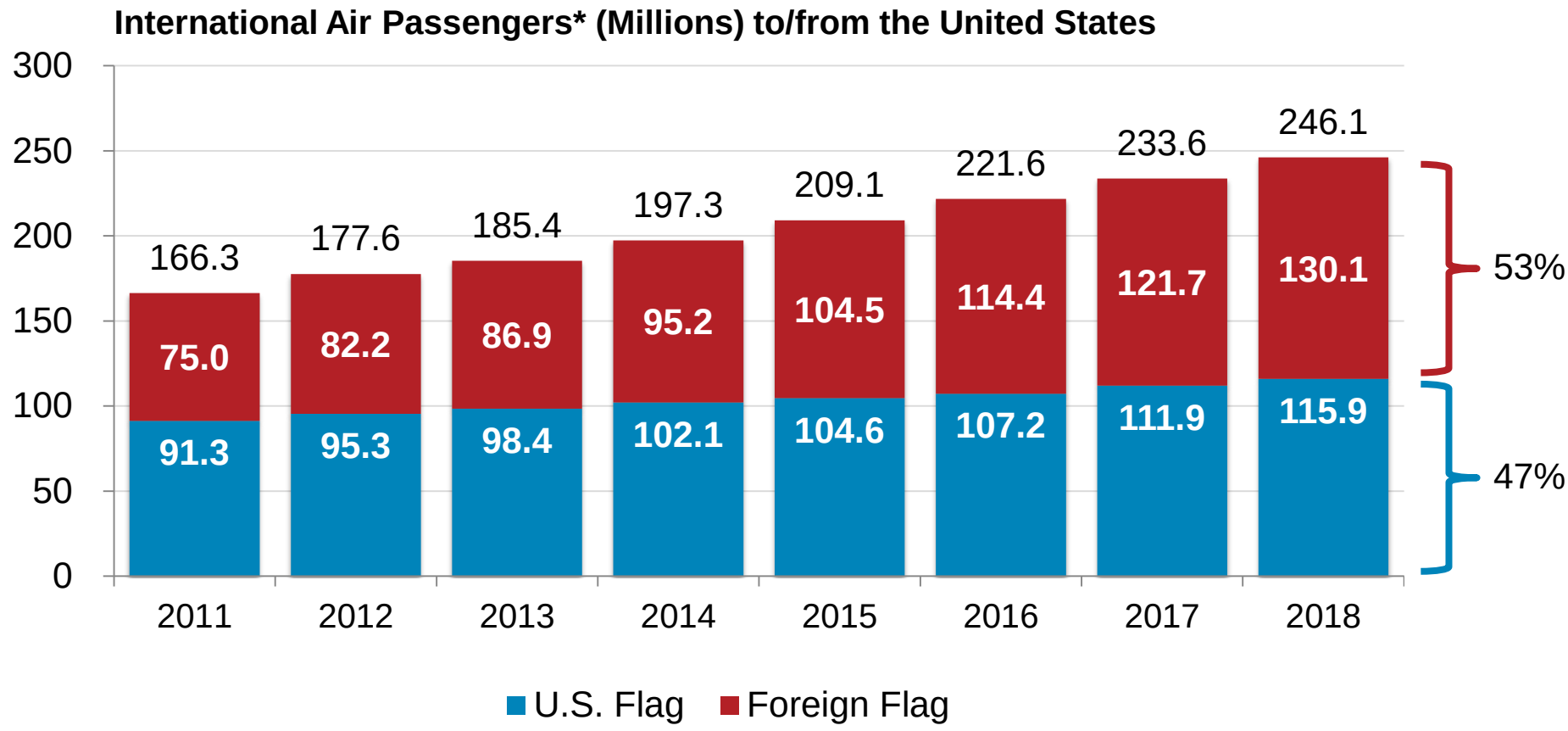


Source: DOT Data Bank 1B and Innovata published schedules via Diio Mi

* Defined as carrying at least 5 percent of O&D passengers between BOS and CAK/CLE

Air Travel Between the U.S. and Foreign Countries* Reached All-Time High in 2018

Foreign Flag Airlines Carried 53 Percent of Passengers, Up From 45 Percent in 2011

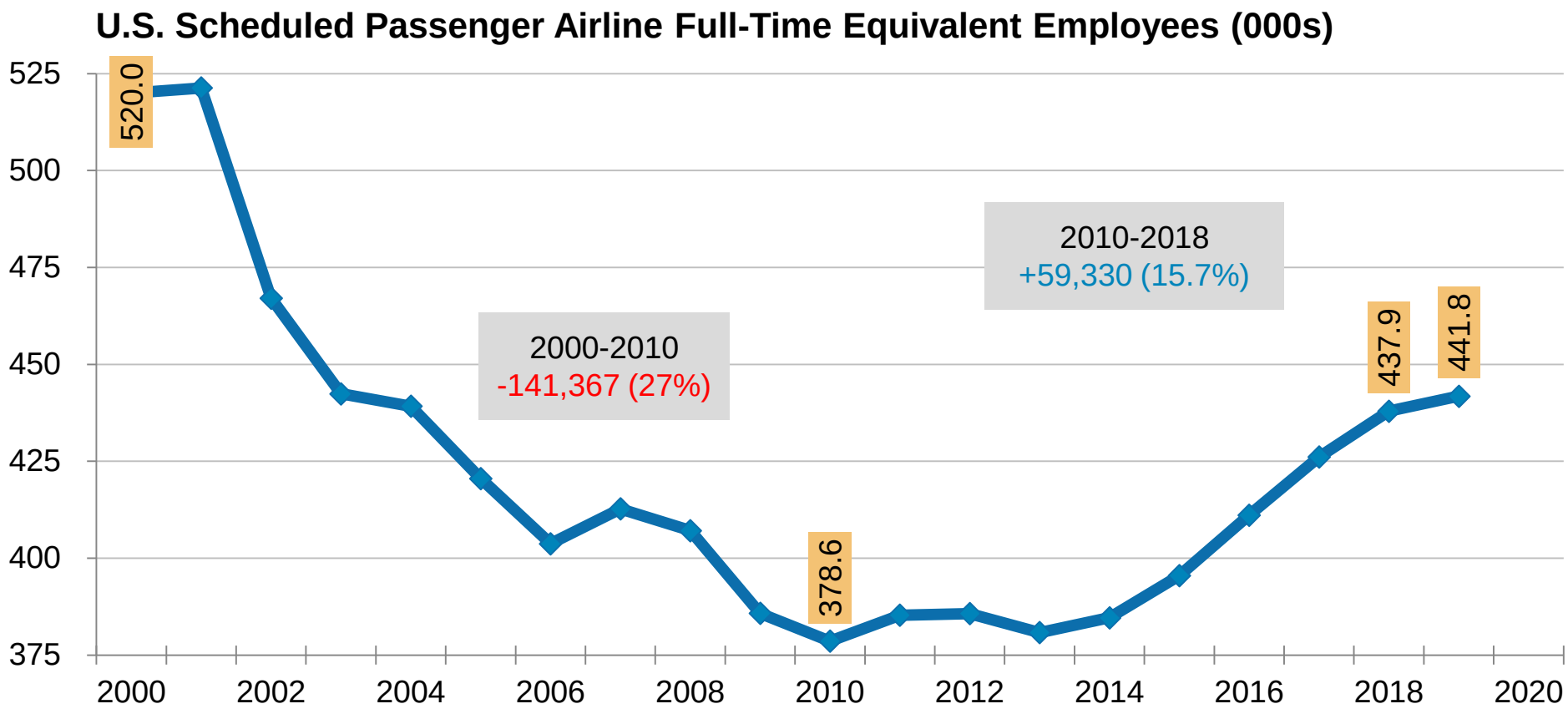


Source: U.S. Department of Commerce National Travel and Tourism Office

*Years preceding 2011 do not include traffic between the United States and Canada

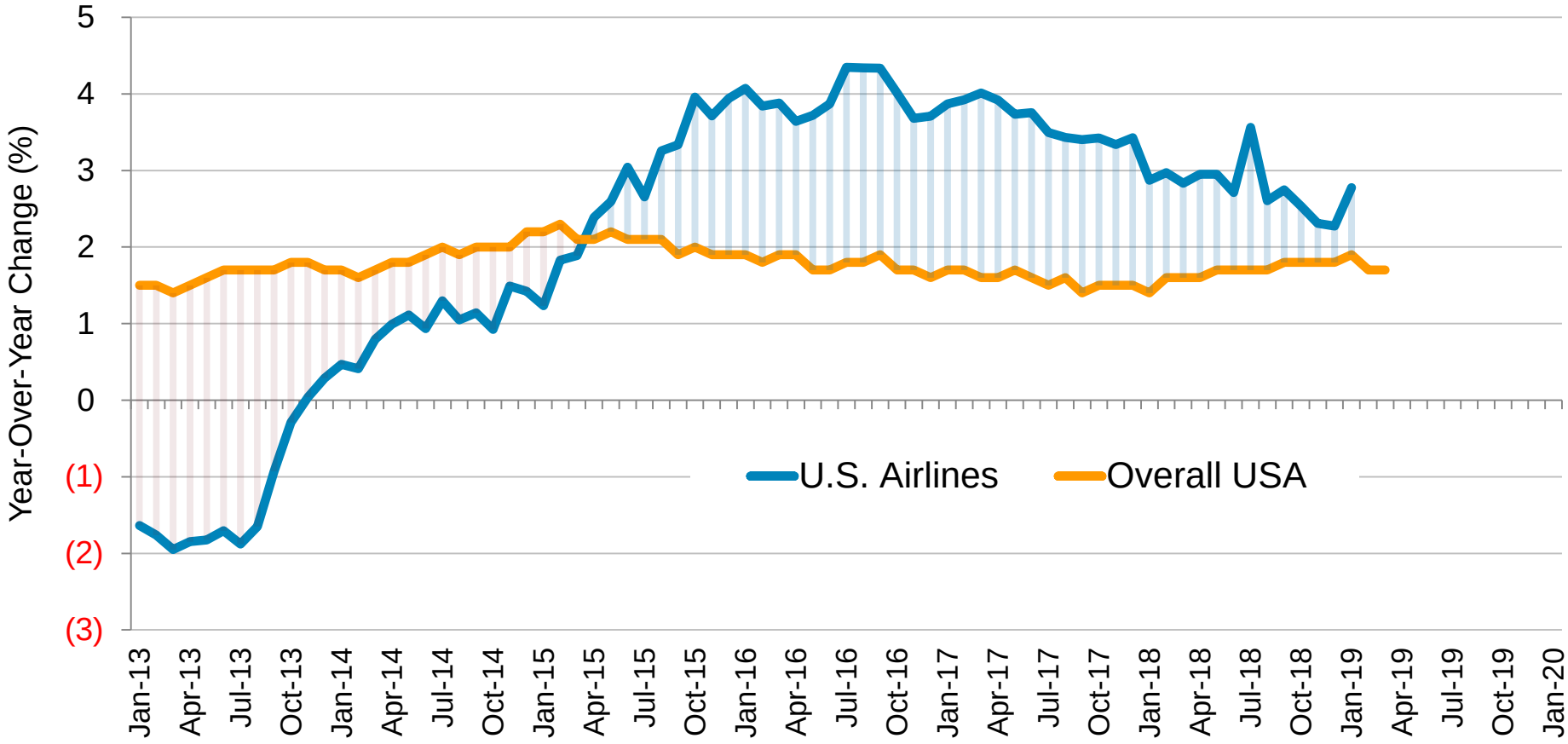
U.S. Passenger Airline Jobs Averaging Highest Level Since 2003

January 2019 Represented the **63rd 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

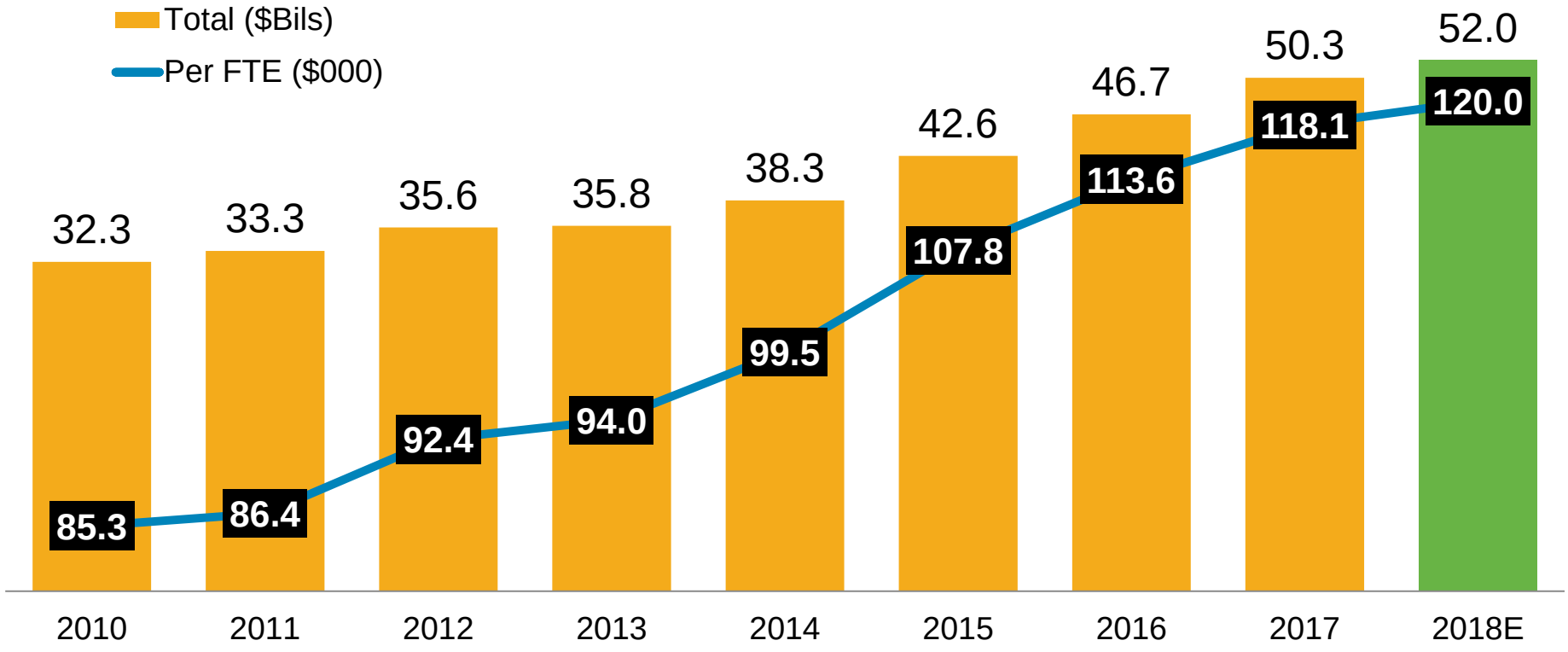


Source: Bureau of Labor Statistics (U.S. nonfarm employment, CES0000000001) and Bureau of Transportation Statistics (U.S. scheduled passenger airline FTEs)

U.S. Airlines* on Track to Spend $52B on Wages & Benefits in 2018

Average Compensation per Employee Up Approximately $35K (41%) Since 2010

Employee Wages and Benefits*



* A4A Passenger Airline Cost Index

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

2010-2018		Total	Per Psgr.	% 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

Like Other Responsible Businesses, Airlines Are Focused on Balanced Allocation of Capital to Benefit All Stakeholders: Customers, Employees and Investors

- Renewing fleets, improving the product at all stages of travel
  - Boosting operational reliability, advancing environmental objectives
- Restoring/increasing air service levels (capacity)
- Adding staff

- Increasing job security
- Restoring/increasing employee wages and benefits
- Shoring up pensions (or comparable retirement accounts)

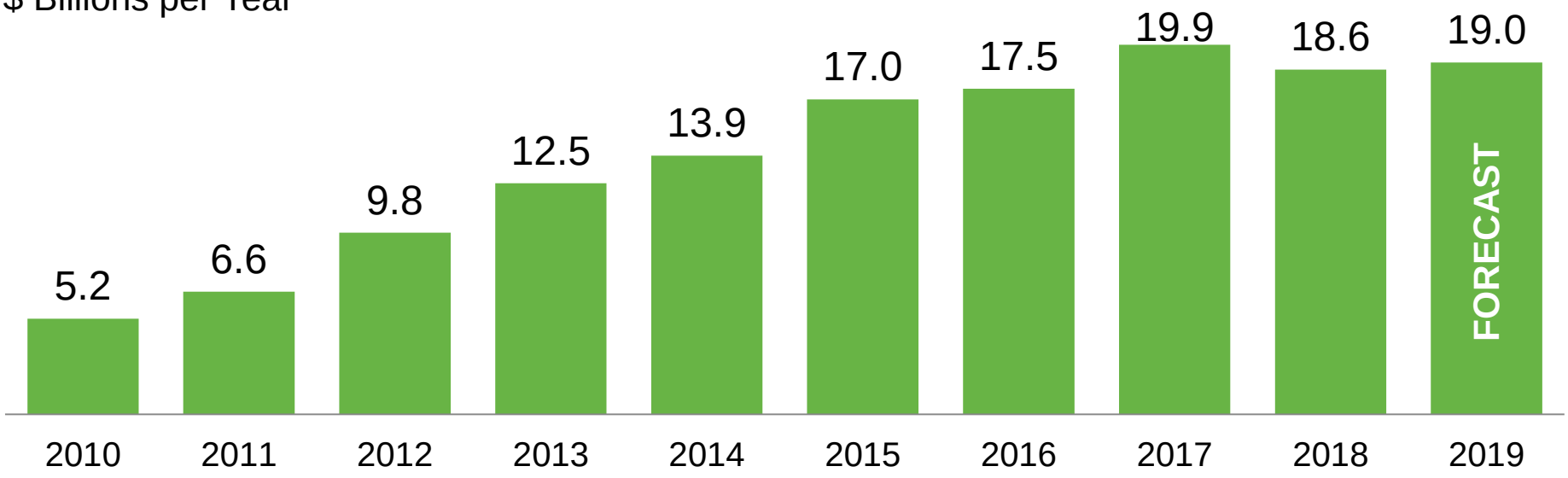
- De-risking (reducing debt)
- Returning cash to shareholders
  - Buying back stock
  - Issuing dividends

Substantial U.S. Passenger Airline Capital Investment* in Current Business Cycle

Total Projected to Reach $140 Billion by the End of 2019

U.S. Passenger Airline Capital Expenditures*

$ Billions per Year



YE2018 firm orders for 1,717 aircraft valued at $88B (~1 a/c per day in 2019)

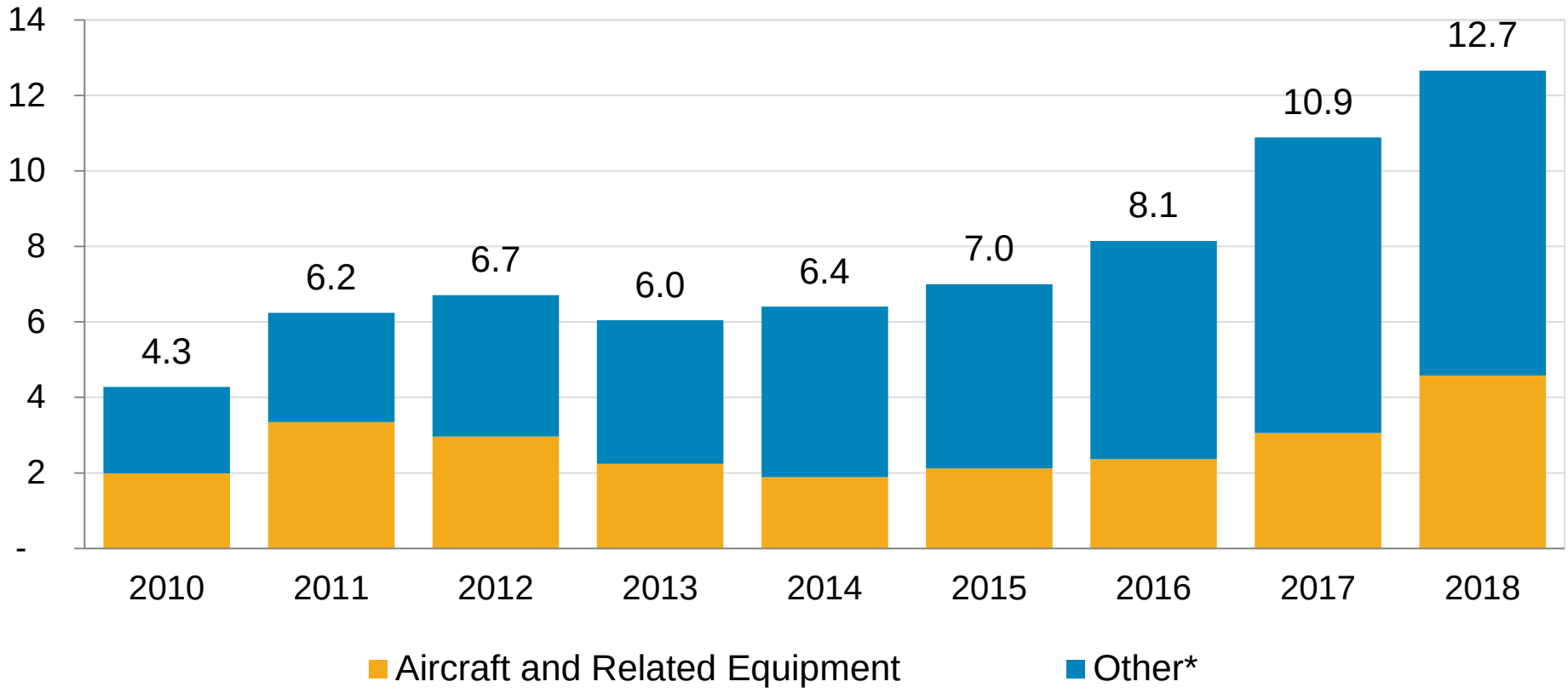
Several billion dollars committed for facilities, ground equipment, technology

* Includes payments made for aircraft and other flight equipment, ground and other property and equipment, 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

Capital Expenditures on the Rise for U.S. Cargo Airlines

$ Billions by Fiscal Year for Atlas, FedEx and UPS



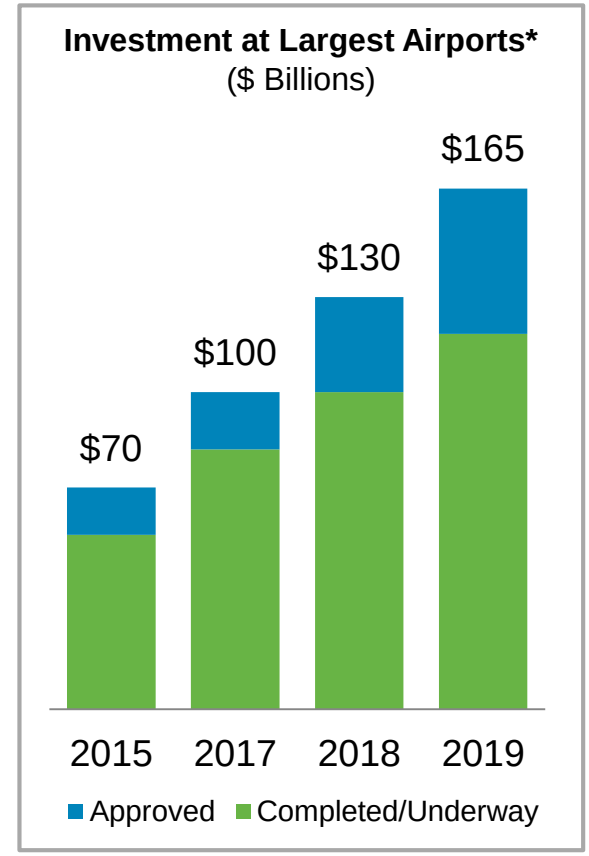
Source: SEC filings of Atlas, FedEx and UPS

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

Airline-Airport Collaboration Has Paved Way for Widespread Infrastructure Investment

Capital Investment Has More Than Doubled Since 2015 at the 30 Largest U.S. Airports*

- Nearly **$165B** of capital projects completed, underway or approved at the **30 largest U.S. airports** since 2008, including, for example:
  - New/expanded/modernized facilities at Atlanta, Boston, Chicago (ORD), Dallas (DFW), Denver, Honolulu, Houston (IAH), Las Vegas, Los Angeles, Miami, Newark, New York (JFK and LGA), Orlando, Phoenix, Portland, Salt Lake City, San Diego, San Francisco, Seattle and Washington (DCA)
  - 27 airfield capacity projects at 23 major airports, including new runways at Chicago (ORD), Charlotte, Seattle and Washington (IAD)
- Development is also robust at **smaller airports**, including:
  - Airfield projects at Anchorage, Columbus, Des Moines, El Paso, Manchester, Providence and Sioux Falls
  - Terminal projects at Bangor, Dallas (DAL), Eugene, Grand Rapids, Greenville-Spartanburg, Kansas City, Nashville, New Orleans, Oakland, Pasco, Reno, San Antonio, San Luis Obispo and Wichita
- Investment is also occurring in **cargo** facilities and related infrastructure – e.g., Fort Worth, Louisville, Lafayette, Indianapolis, Memphis, Miami, Newark, Ontario, Rockford



* Capital projects completed, underway or approved at the 30 largest U.S. airports since 2008, per A4A research

Fitch Ratings: Skies Remain Friendly for U.S. Airports

"…**strong overall performance for U.S. airports should continue undeterred for the foreseeable future** according to Fitch Ratings in its latest annual peer review for the sector…

Fitch-rated airports are still **largely entrenched in 'A' territory.** '**Airports in general are showing a lot of resilience** as the industry continues to evolve and event-driven challenges from the broader economy take shape,' said Senior Director Seth Lehman. '**Over 90% of the airports Fitch rates currently have a Stable Rating Outlook, which signifies continued stability deep into next year**.'

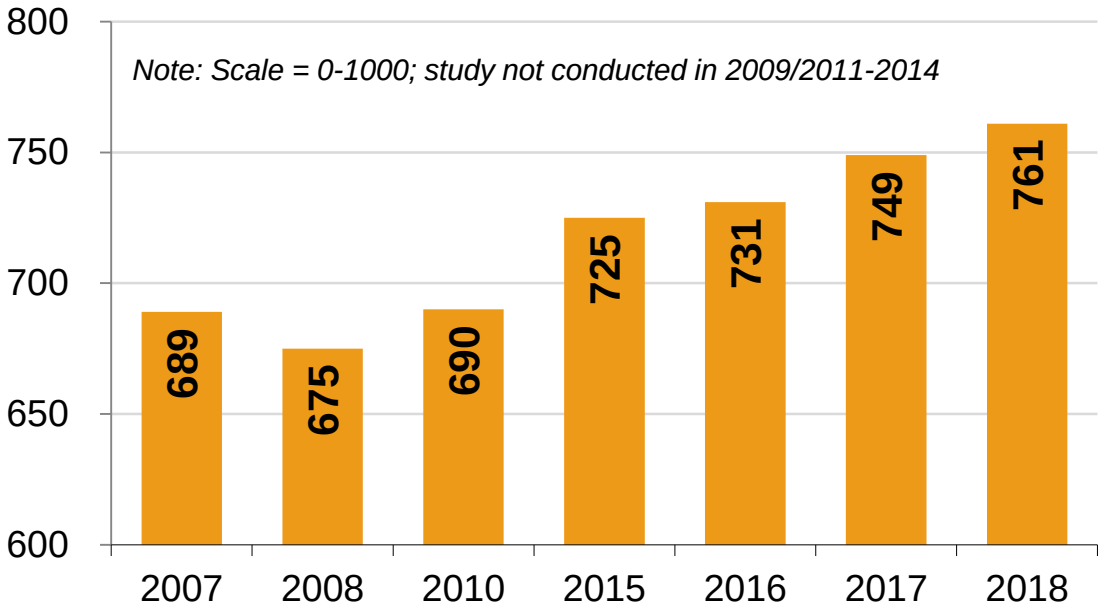
GDP growth and general airline health remain the most important revenue gauges for airports, though rising rates could make borrowing debt more expensive for airports with a **substantial pipeline of investments on the horizon**."

-- Fitch Ratings: "Skies Remain Friendly for U.S. Airports" (Oct. 29, 2018)

Sources: https://www.fitchratings.com/site/pr/10049679 and Peer Review of U.S. Airports (Attribute Assessments, Metrics and Ratings), Oct. 29, 2018

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

"North America airports have managed to shrug off the potentially disruptive effects of record passenger volumes and massive construction projects to achieve a **record high in overall passenger satisfaction**." (Sept. 19, 2018)



Six factors:
Terminal Facilities* (24%)
Airport Accessibility (19%)
Security Check (16%)
Baggage Claim (15%)
Check-In / Baggage Check (14%)
Food / Beverage / Retail (13%)

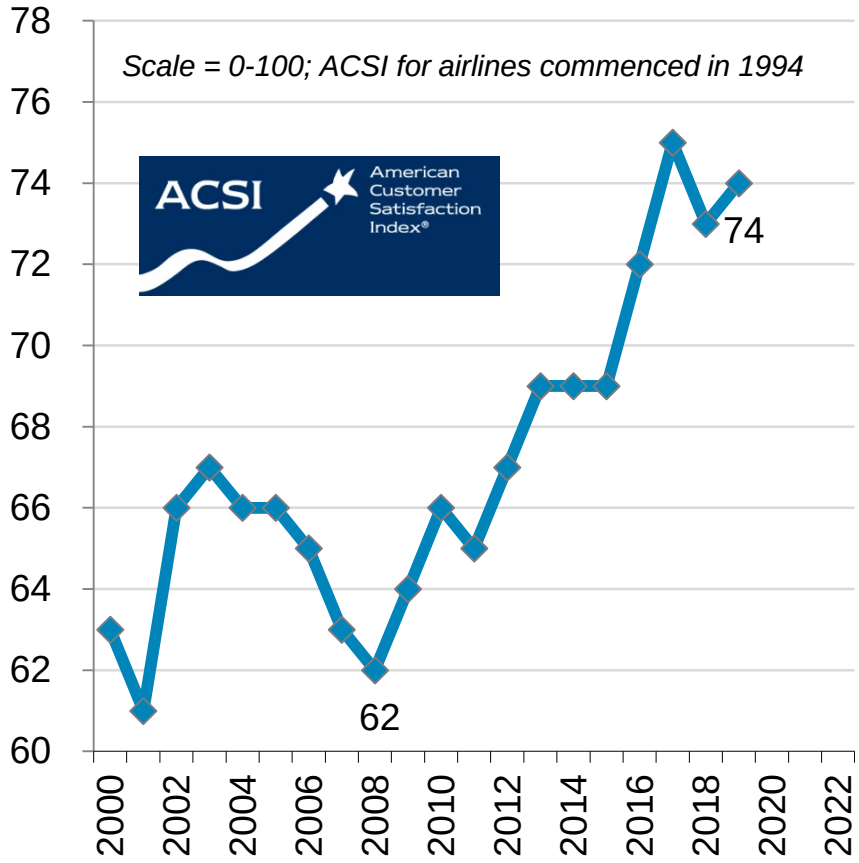
* Concourses, lounges, signage, restrooms, gate areas

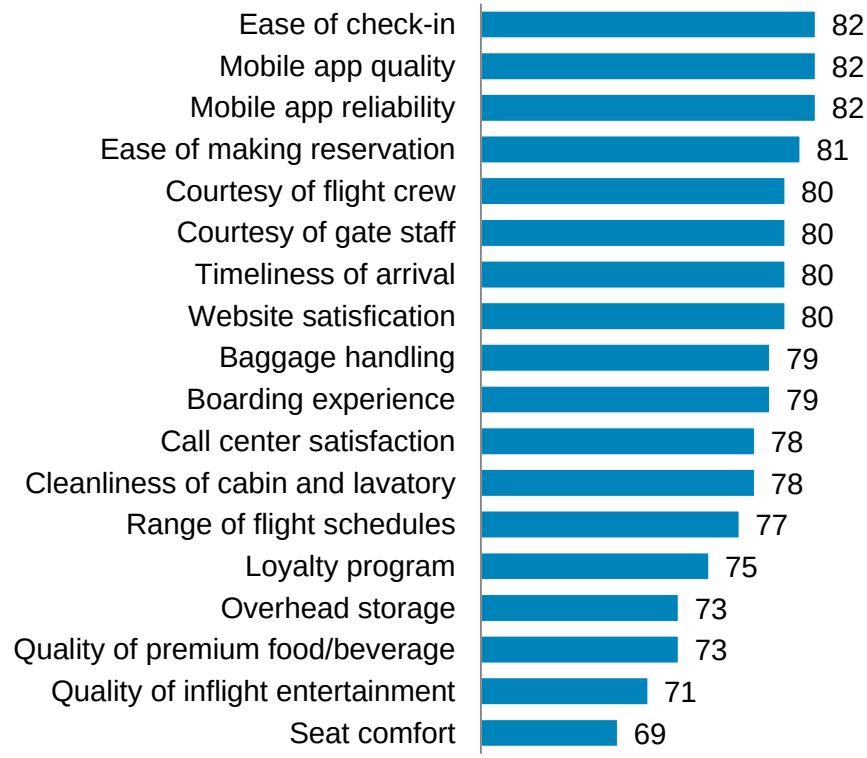
* The study is based on responses from 40,183 North America travelers who traveled through at least one domestic airport and covers both departure and arrival experiences (including connecting airports) during the past three months. Travelers evaluated either a departing or arriving airport from their round-trip experience. The study was fielded from September 2017 through September 2018.

Source: J.D. Power 2018 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





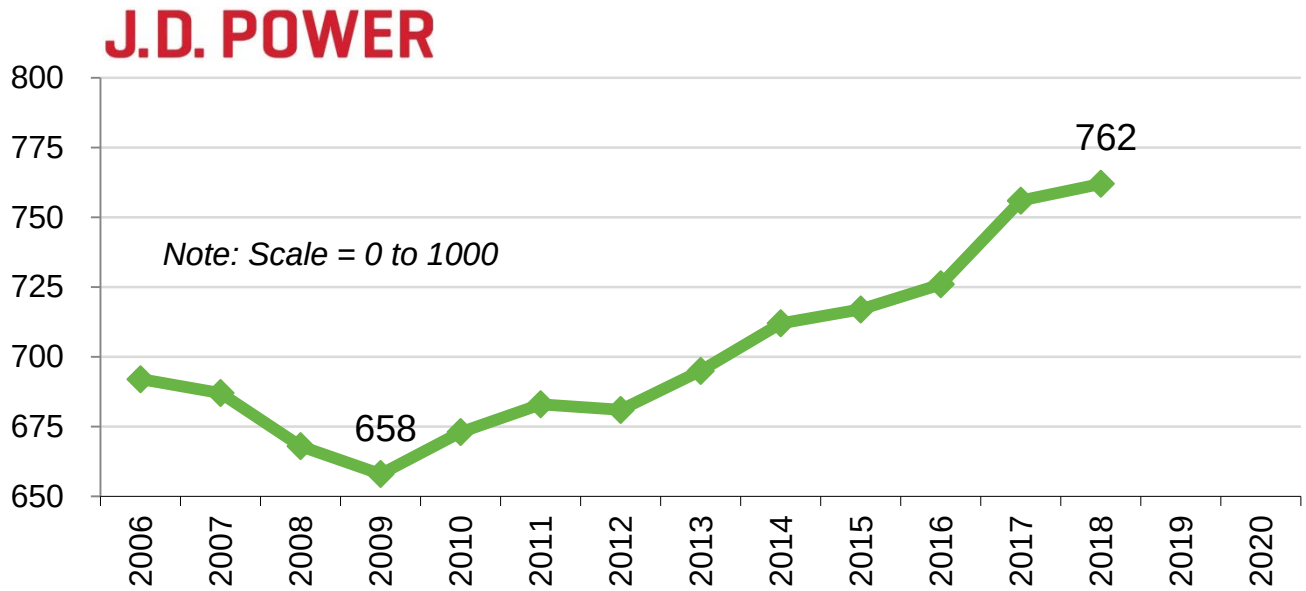
Note: ACSI and its logo are Registered Marks of the University of Michigan; see http://www.theacsi.org/the-american-customer-satisfaction-index

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

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

"**Airline investments** in newer planes, improved customer satisfaction with overhead storage compartments and **cheaper fares** have driven a **seventh straight year of improved customer satisfaction**. **Operationally, it's never been a better time to fly**. **Passengers perceive greater value in ticket prices**, checking in has never been easier, **passengers are more satisfied with the actual aircraft** and airlines have improved their baggage-handling performance."

— Michael Taylor, Travel Practice Lead at J.D. Power (May 30, 2018)



Seven factors (in order):
Cost & fees
In-flight services*
Aircraft
Boarding/deplaning/baggage
Flight crew
Check-in
Reservation

* Food, beverage and entertainment

Notes: The study is based on responses from 11,508 passengers who flew on a major North American airline between March 2017 and March 2018.
Source: J.D. Power 2018 North America Airline Satisfaction Study℠

APPENDIX

“Making the movement of people and goods easier, and stimulating economies”

“The combination of creative freedom and new-generation aircraft has led to another hugely significant development in recent years: the hundreds of new city pairs that airlines have launched and continue to add to their networks. These **directly link communities by air as they’ve never before been connected**, **making the movement of people and goods easier**, and **stimulating economies**.”

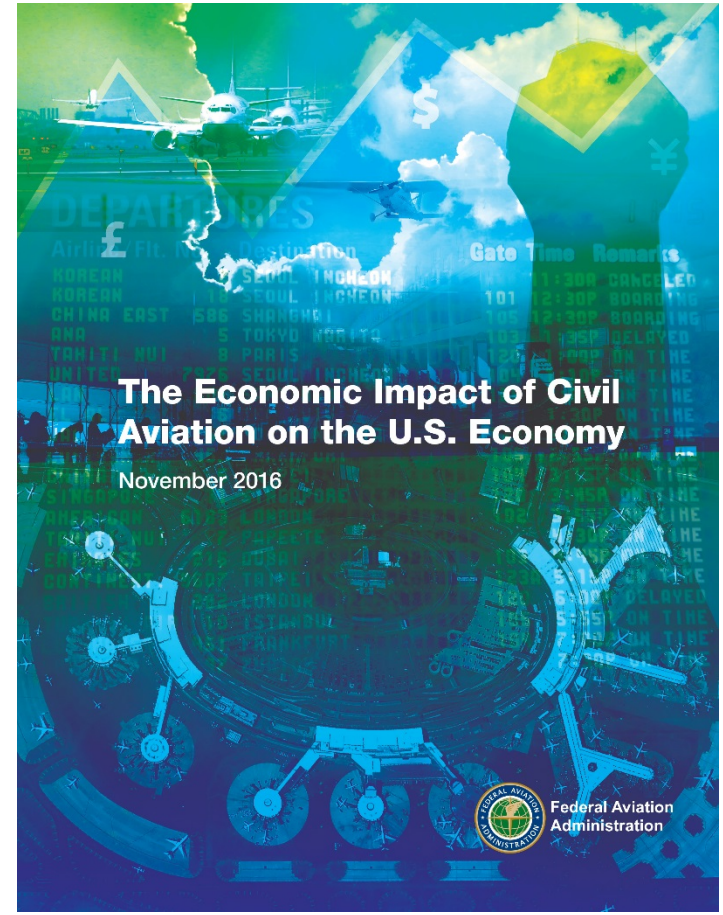
-- Karen Walker, Editor-in-Chief, Air Transport World (April 2018)

Source: “Celebrating an industry,” Air Transport World (April 2018)

Commercial Aviation Supports 5% of U.S. GDP and More Than 10M U.S. Jobs

For Every 100 Airline Jobs, Approximately 300 Jobs Are Supported Outside the Industry

- In 2014, economic activity (**output**) in the United States attributed to *commercial* aviation-related goods and services totaled $1.54 trillion, generating 10.2 million **jobs** with $427 billion in **earnings**.
- Commercial aviation contributed $846 billion (4.9 percent) to U.S. GDP, the **value-added** measure of overall U.S. economic activity.



Terms

- Commercial aviation – airlines, air couriers, airports, airframe/engine/parts/avionics manufacturers, visitor expenditures, R&D, travel arrangements.
- Output – the total economic value of goods and services produced.
- Earnings – wages/salaries/other labor income, benefits, and proprietors' income paid to all employed persons who deliver final demand output and services.
- Jobs – the number of people employed in the industry that provide civil-aviation services, manufacture aircraft and aircraft engines, or work in other industries that are indirectly affected by activity in the civil air transportation sector.

Source: FAA, *The Economic Impact of Civil Aviation on the U.S. Economy* (Nov. 2016)

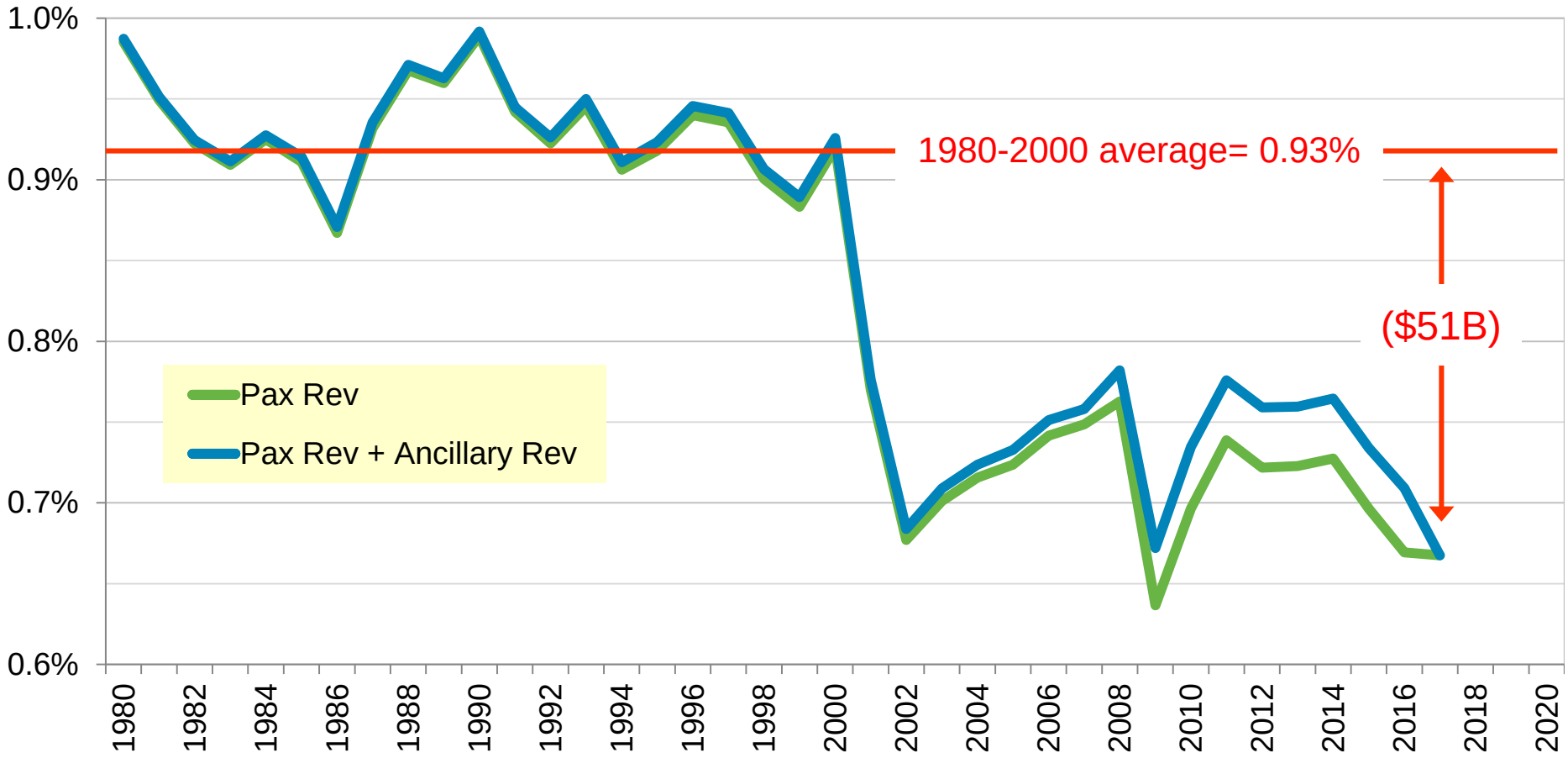
By Almost Every Measure, the Golden Age of Air Travel Wasn't Then – It Is Now

	Pre-Deregulation (Before 1979)	Today (2017-2018)
Safety	Feared by many; fatality risk = 1 in 1M	Safest travel mode; fatality risk = 1 in 29M
Competition	CAB allowed just 1 or 2 airlines per route CAB set fares, disallowed price competition	No limit on number of carriers per route Vigorous price competition
Affordability	Avg. domestic R/T > $600 incl. fees ($2017)	Average domestic R/T ~ $363 incl. fees
Accessibility	Accessible to affluent – 63% had flown Luxury good; predominantly high-income	Accessible to all – 88% have flown Common form of intercity transportation
Small-market service	Often propeller aircraft, suboptimal times	Widespread jets, market-driven flight times
International service	Flights, carriers, cities, sales limited by law	Plentiful, cheaper due to "Open Skies"
Routings & frequency	Often multiple stops, few flights/day/week	Plentiful nonstop/1-stop, multiple flights/day
Shopping	Phone calls, ticket offices, travel agents	A few clicks online
Ticket delivery	By mail only	Universally electronic, retrievable
Checking in	Lined up at the ticket counter	Online, kiosk, mobile
Inflight entertainment	Occasional movie, far-away shared screen	Unlimited options, streaming to PED
Bag tracking	No tools at customers' disposal	Mobile tools becoming universal
Environmental impact	Not very fuel efficient; more CO_2 per flight	~120% more efficient; avoidance of CO_2

Source: A4A and Patrick Smith, "There Was No 'Golden Age' of Air Travel," *New York Times* (May 27, 2017)

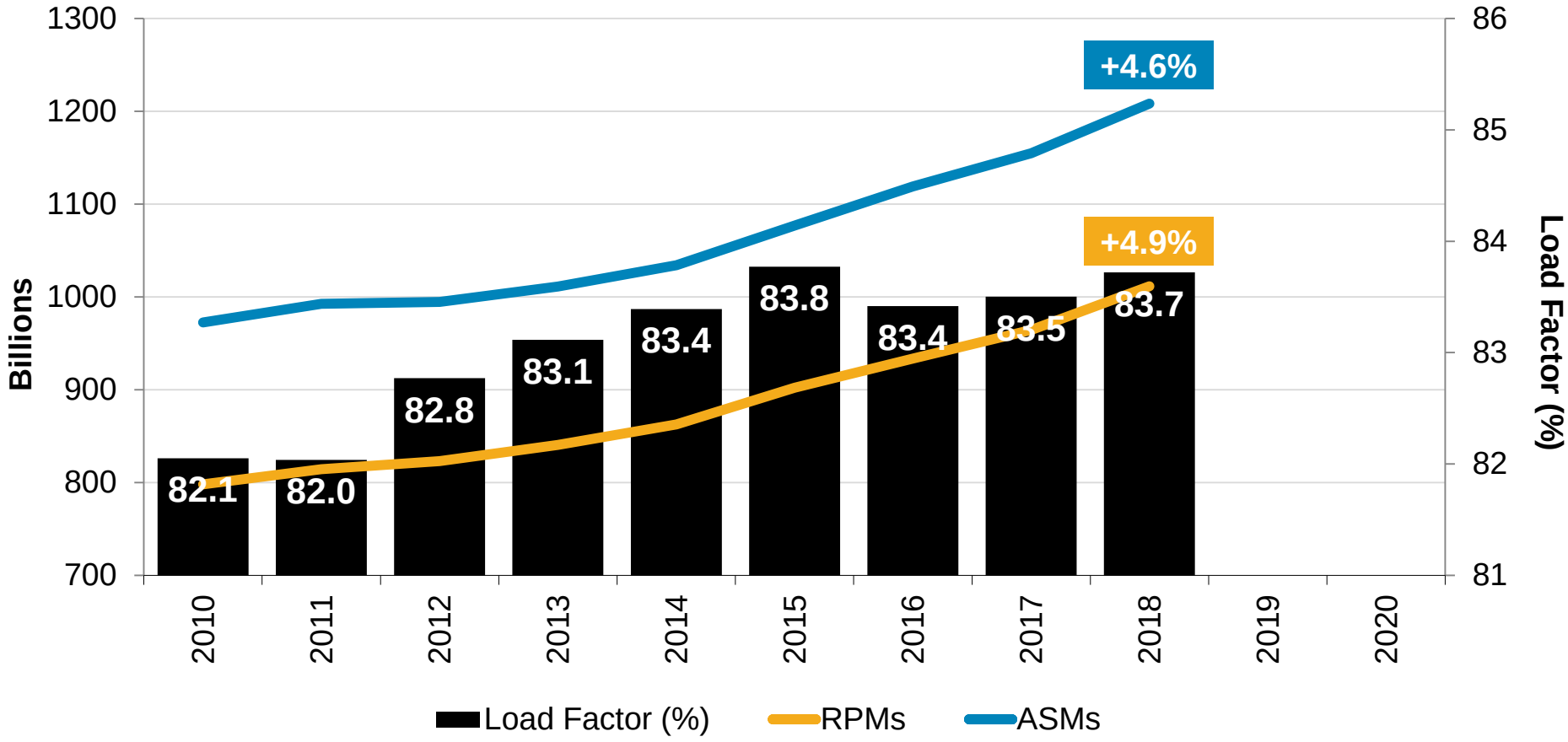
Diminished Airline Pricing Power Has Led to Diminishing "Take" of U.S. Economy

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 Average Load Factor to 83.7 Percent



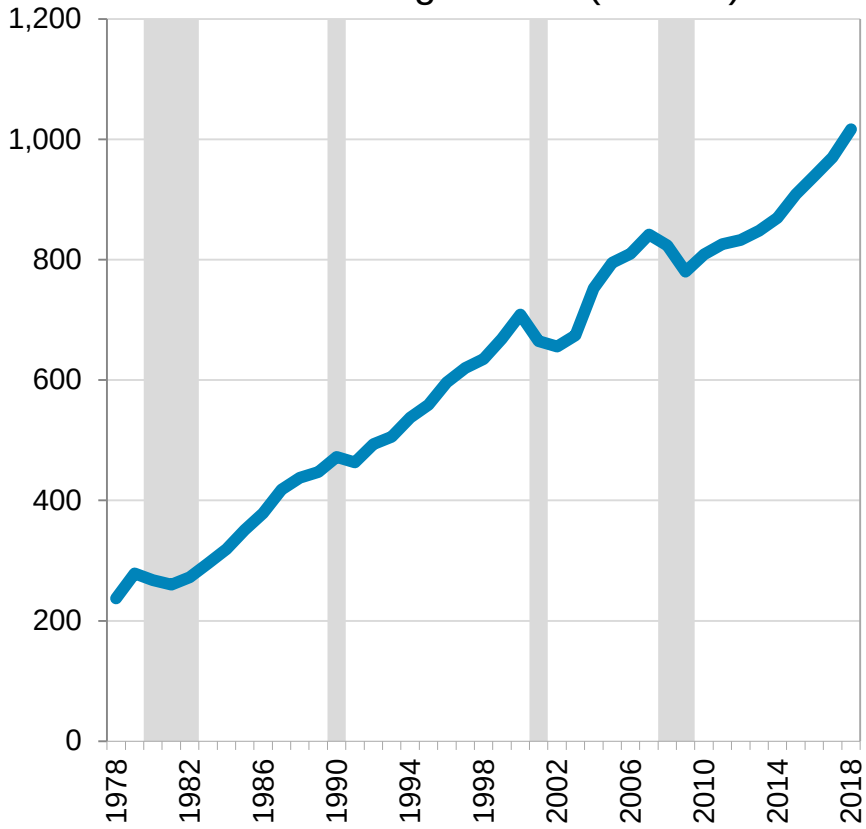
Source: U.S. Bureau of Transportation Statistics T1, systemwide scheduled service on U.S. airlines – revenue passenger miles (RPMs) and available seat miles (ASMs)

U.S. Airlines Are Moving More People and More Goods Over Longer Distances

Significant Growth of Demand for Air Transportation Services in the Deregulated Era

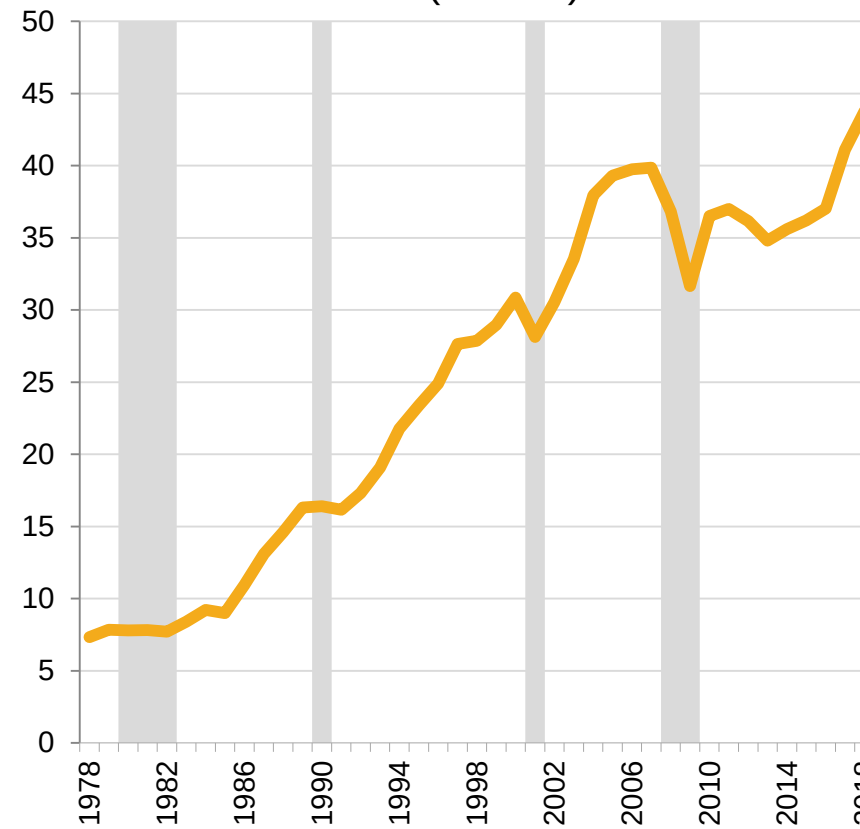
Passenger Traffic Up 4.3x

Revenue Passenger Miles (Billions)



Cargo Traffic Up 6.0x

Revenue Ton Miles (Billions)

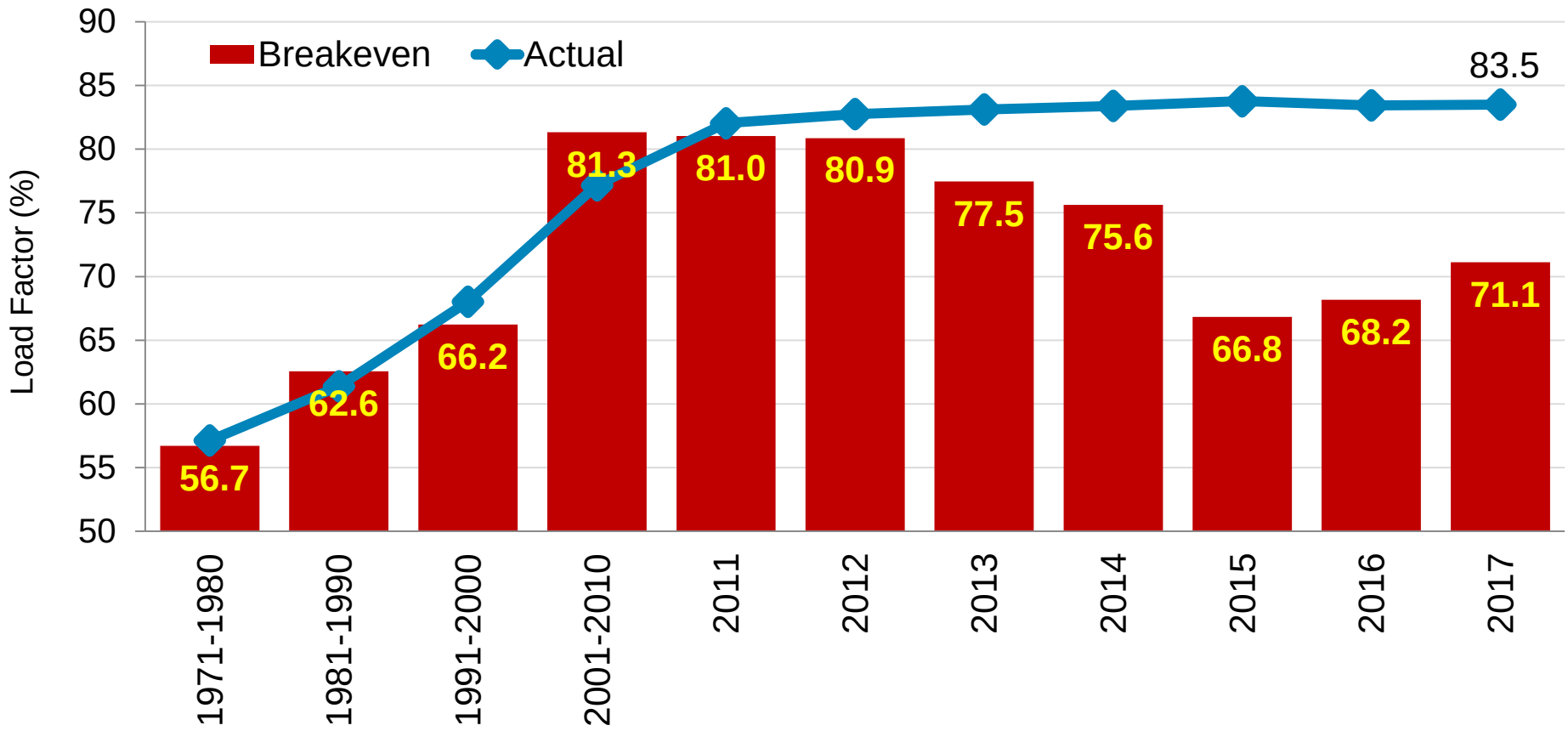


Source: U.S. Bureau of Transportation Statistics (T1 systemwide for U.S. airlines – all services)

Note: Recessions highlighted in gray

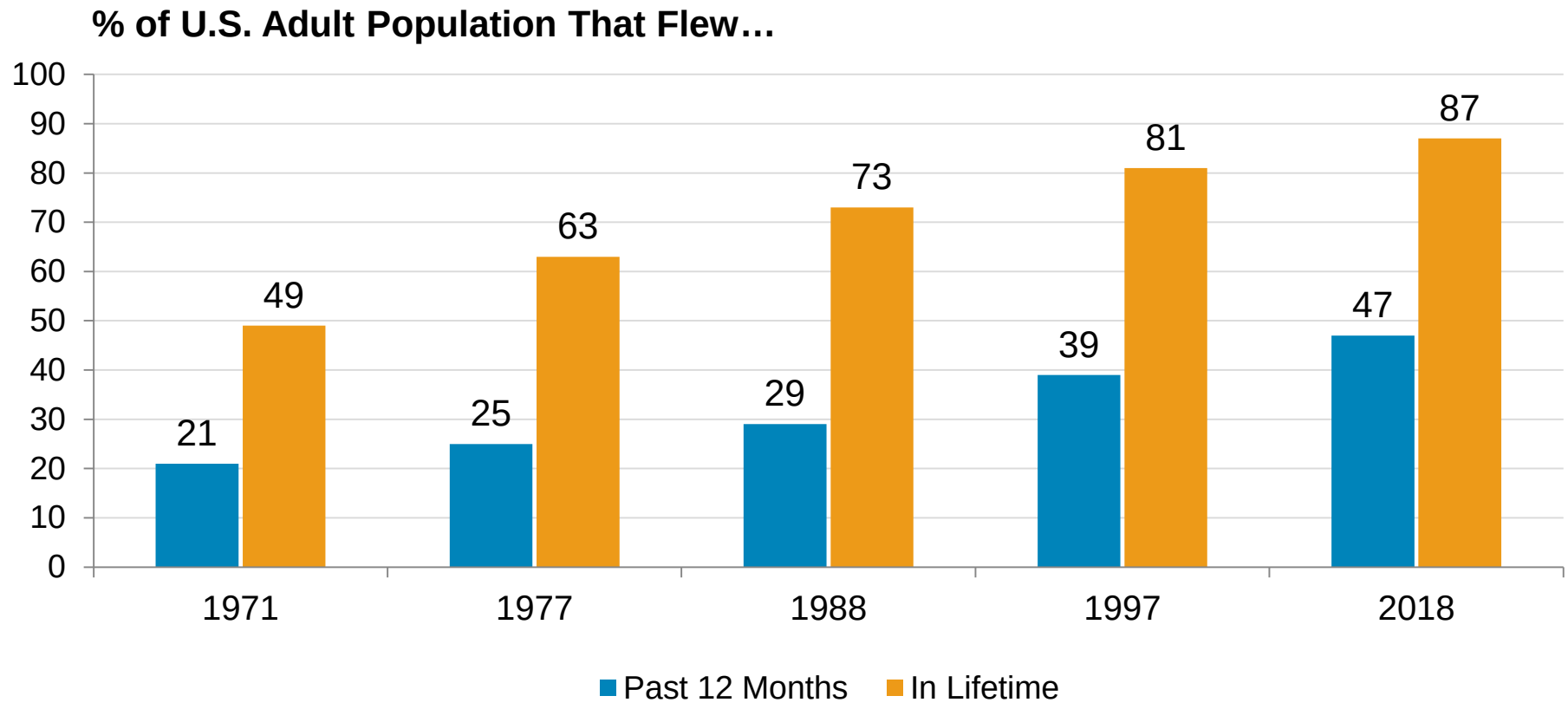
In 2017, U.S. Airlines Needed to Fill 71 Percent of Seats to Avoid Losing Money

Breakeven Load Factor Requirement Rose on Higher Unit Cost



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

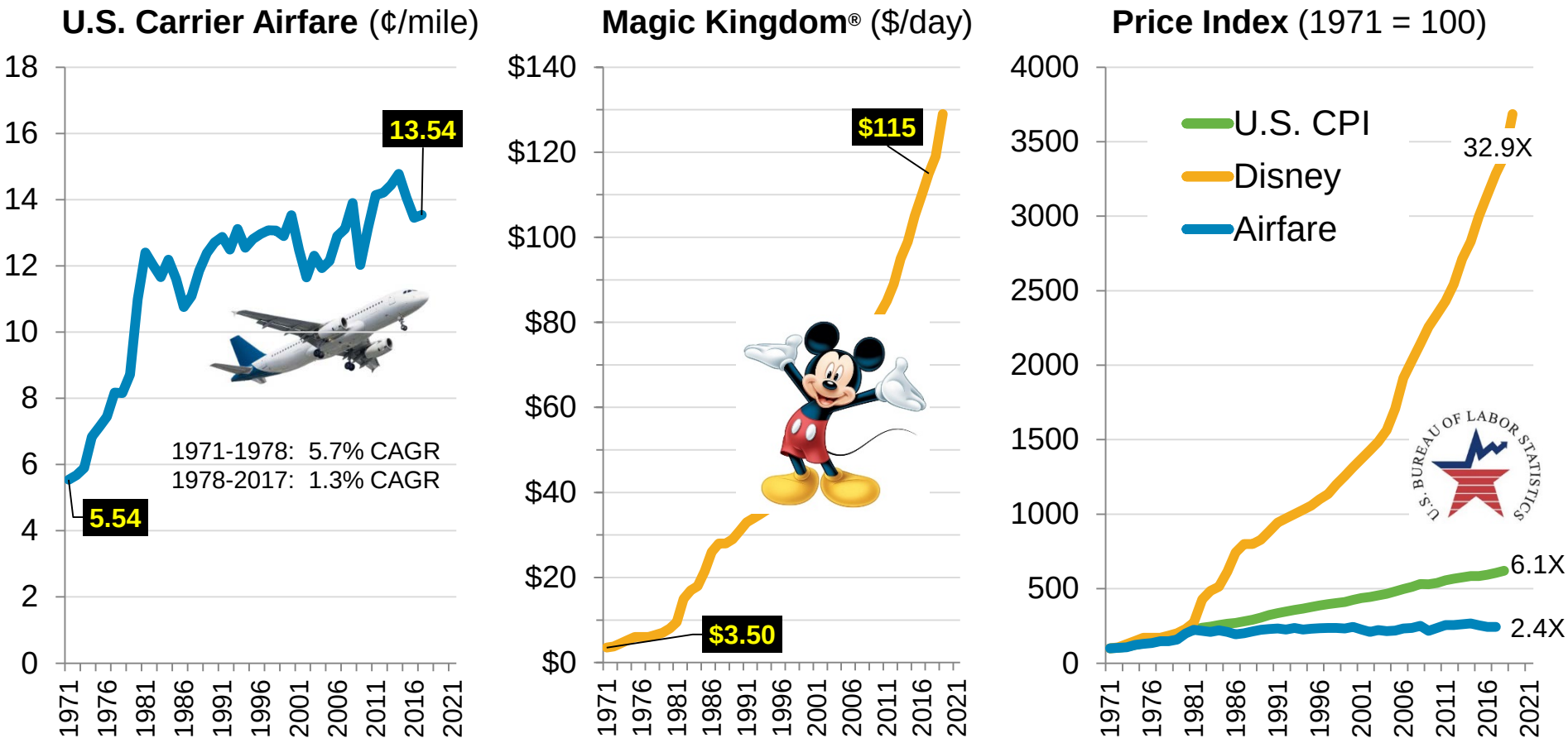
As Commercial Air Travel Has Become Safer and More Accessible, More Americans Are Taking to the Skies: Almost 90% in Their Lifetimes, Almost 50% in Past Year



Sources: Gallup and Ipsos Public Affairs; NBC News (Dec. 20, 2017)

Within the Travel & Tourism Sector, Airfare Remains One of the Better Bargains

In Contrast to Air Travel, the Price of a Day at Disney Rose 33-Fold From 1971 to 2017



Sources: A4A Passenger Airline Cost Index (using DOT Form 41 passenger yield), allears.net, "How theme parks like Disney World left the middle class behind" (Drew Harwell, *The Washington Post*, June 12, 2015) and "Disney Introduces Demand-Based Pricing at Theme Parks" (Brooks Barnes, *The New York Times*, Feb. 27, 2016)

Relative to Most Consumer Goods and Services, Air Travel Is a Bargain

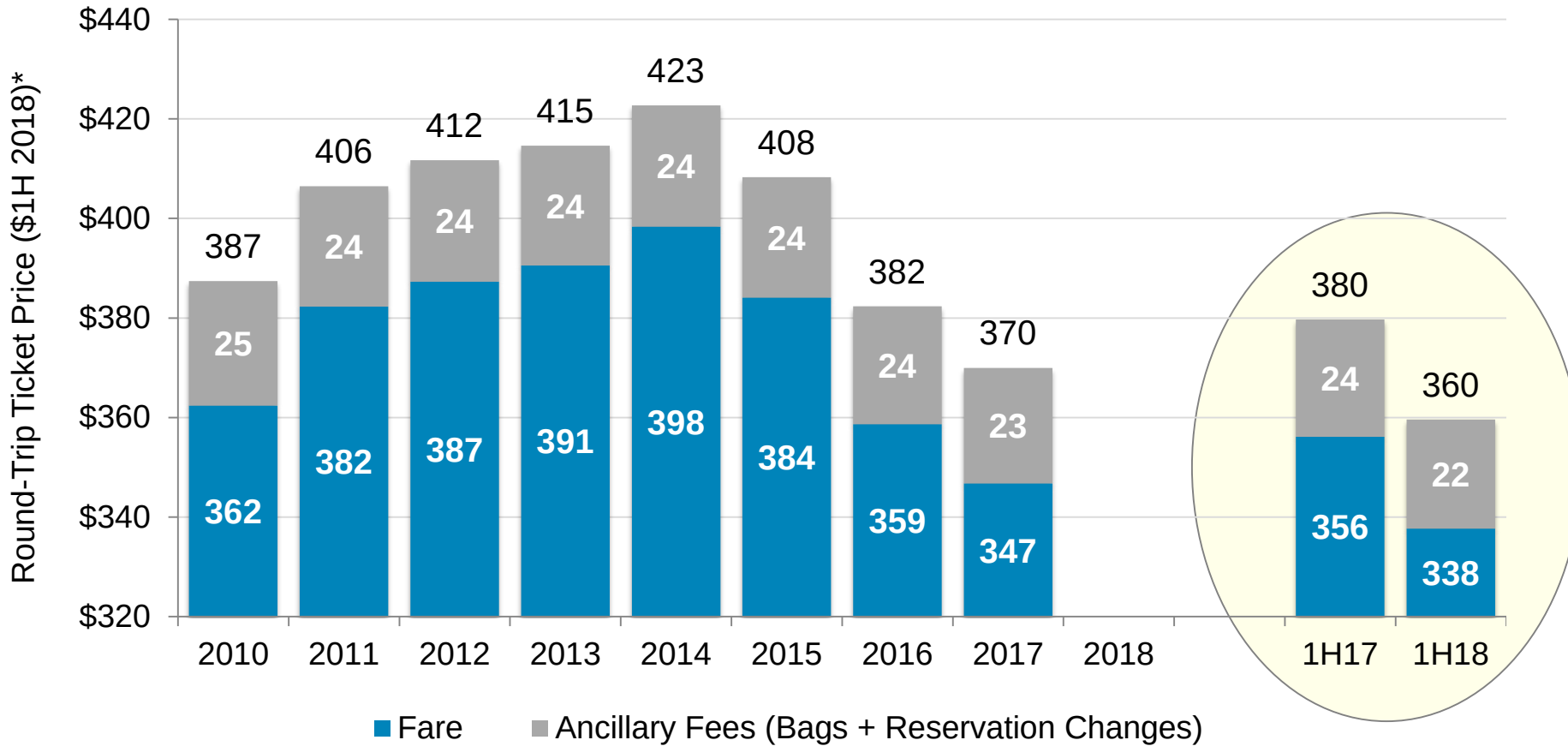
U.S. Inflation and Personal Incomes Have Sharply Outpaced Price of Domestic Air Travel

	Product (Unit)	2000	2017	% Δ
Real Increase	Public College Tuition & Fees (4-Year, In-State, Net)	$1,208	$4,140	242.7
	Disney World® Magic Kingdom (1-Day, Adult, Regular Season)	$46	$115	150.0
	Jet Fuel (Gallon, Price Paid by U.S. Airlines)	$0.81	$1.70	109.9
	National Football League Game (Nonpremium Ticket)	$43.70	$TBD	TBD
	Major League Baseball Game (Nonpremium Ticket)	$16.67	$32.44	94.6
	Prescription Drugs (BLS Index)	285.425	519.634	82.1
	Disposable Personal Income per Capita (Annual)	**$26,262**	**$45,390**	**72.8**
	Single-Family Home (Existing)	$147,300	$248,800	68.9
	Movie Ticket (One Adult)	$5.39	$8.97	66.4
	Gasoline (Gallon, Unleaded Regular, Retail Including Taxes)	$1.510	$2.408	59.5
	Food (BLS Index)	167.817	250.066	49.0
	U.S. Consumer Price Index (CPI-U)[1]	**172.200**	**245.120**	**42.3**
Real Decrease	Vehicle (New, Retail)	$24,900	$34,670	39.2
	Public Transit	209.492	263.195	25.6
	Indoor Plants and Flowers	116.513	133.919	14.9
	Air Travel (R/T Domestic Fare + Ancillary)[2]	**$317.84**	**$362.61**	**14.1**
	Apparel: Clothing/Shoes/Jewelry (BLS Index)	129.583	125.612	(3.1)
	Television (BLS Index)	49.925	2.357	(95.3)

1. Bureau of Labor Statistics "measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services."
2. A4A analysis of data collected by BTS via Airline Data Inc. – excludes taxes; "ancillary" includes revenue from reservation changes/cancellations and baggage

Inflation-Adjusted Fares Continue to Fall in 2018, Averaging *Less* Than in 2010

Real Price* of Domestic Air Travel Down 5.3% YOY (-5.2% Fares, -7.2% Fees)



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

* Excl. taxes; CPI up 2.5% YOY

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

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

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Airline competition and domestic US airfares: A comprehensive reappraisal

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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 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

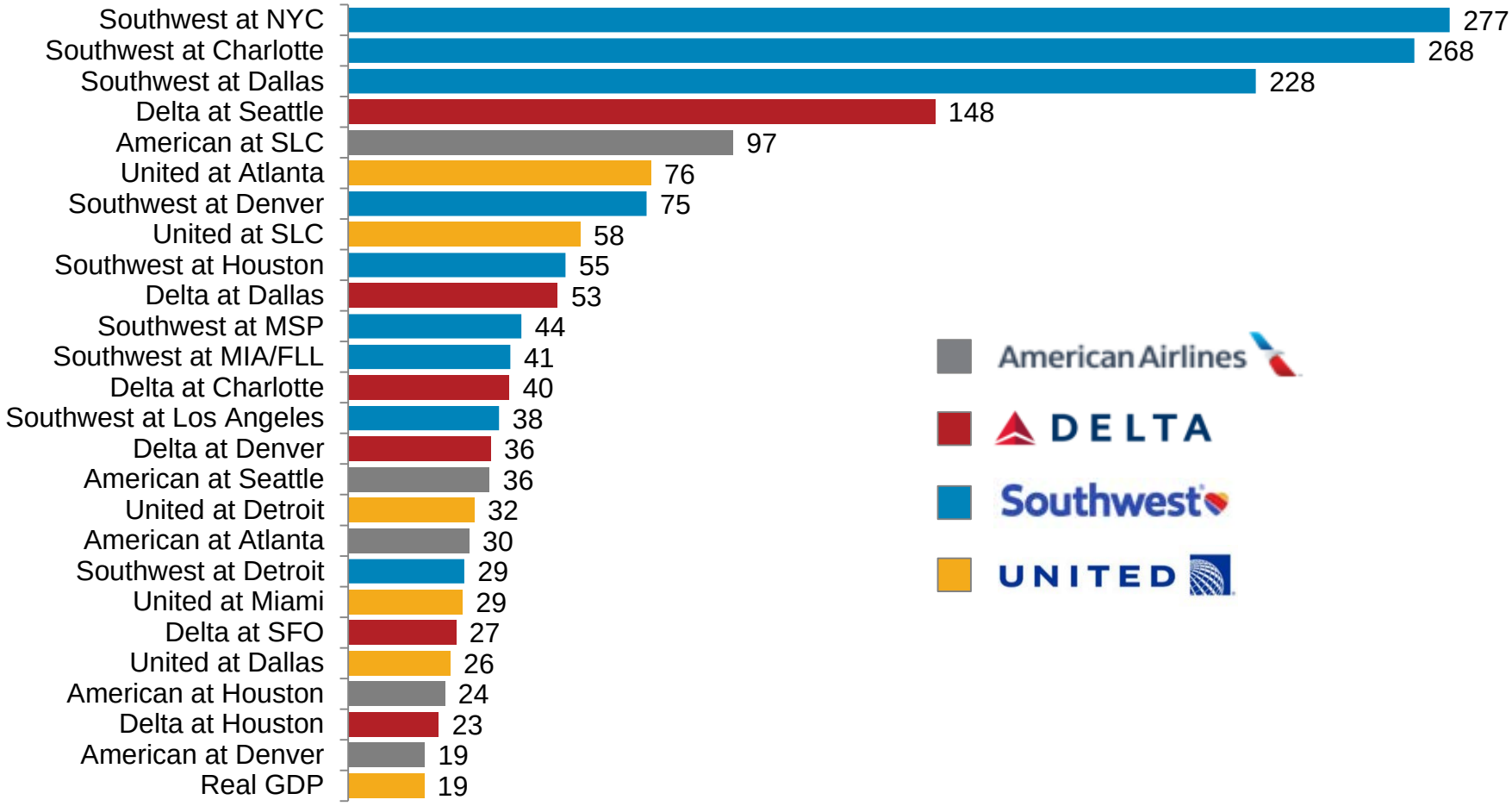
"The presence and magnitude of the Southwest Effect has endured through time. Even today, when new markets have frequently been affected already by Southwest's fares on connecting services, **the Southwest Effect still shows, on average, an additional market fare reduction of 15% and corresponding traffic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

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)

The Largest U.S. Carriers Have Grown Aggressively at Each Other's Hubs

Growth (%) in Capacity* at Competitors' Hubs & Focus Cities: 2010 to 2018

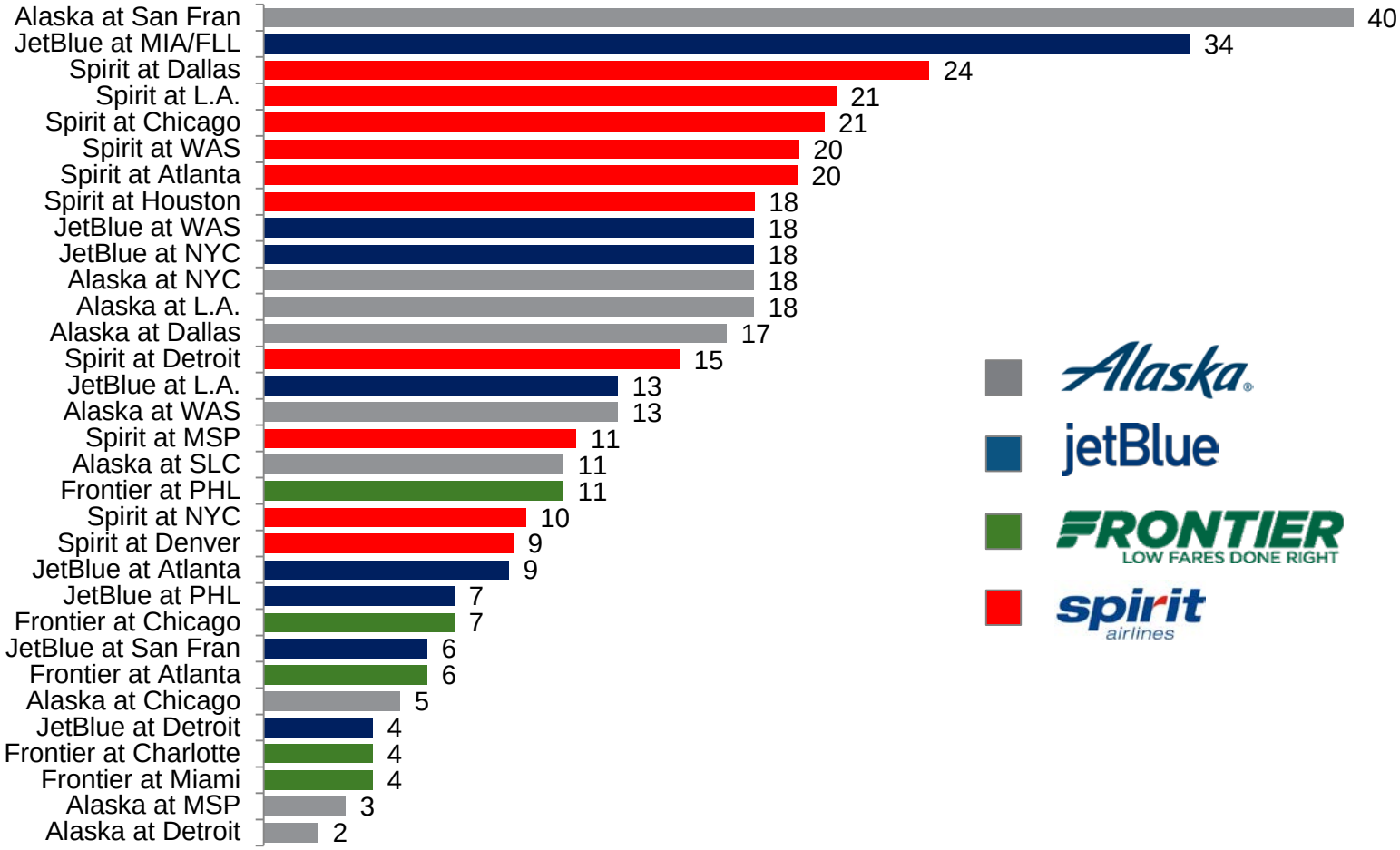


Source: A4A analysis of schedule data

* Scheduled domestic available seat miles by marketing carrier (and merged/acquired partners)

Meanwhile, Smaller Carriers Have Been Expanding Rapidly at Large-Carrier Hubs

Growth (#) in Daily Domestic Flights* at Competitors' Hubs & Focus Cities: 2010 to 2018

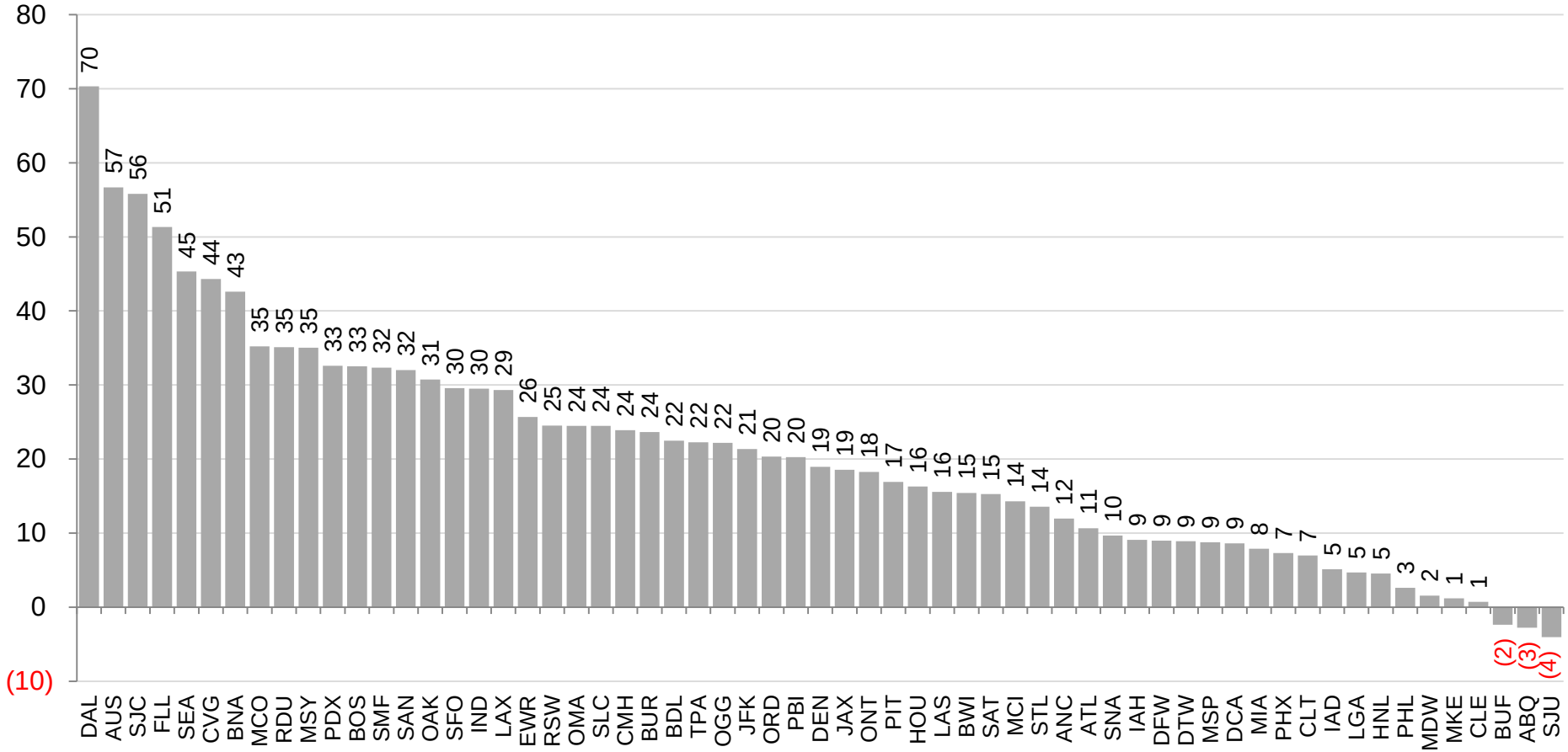


Source: A4A analysis of schedule data

* Scheduled departures by marketing carrier (and merged/acquired partners)

Almost Every Major* U.S. Airport Saw Supply of Seats Rise From 2013-2018

% Change in Scheduled-Service Seats Available: 2018 vs. 2013



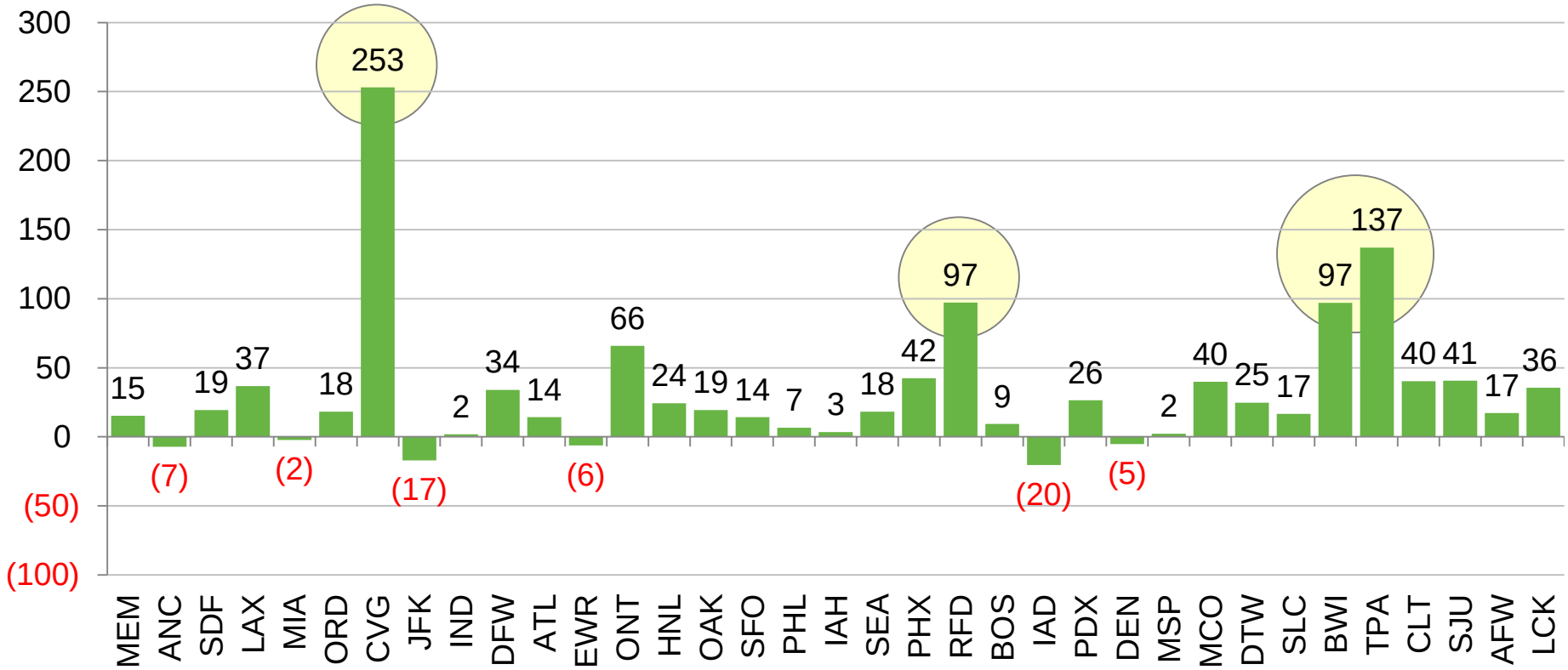
Source: Innovata (via Diio Mi) published schedules as of Jan. 4, 2019, for all airlines providing scheduled service

* FAA large and medium hub airports

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

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

% Change in Outbound Cargo Payload at Largest U.S. Cargo Airports, 2010-2018*

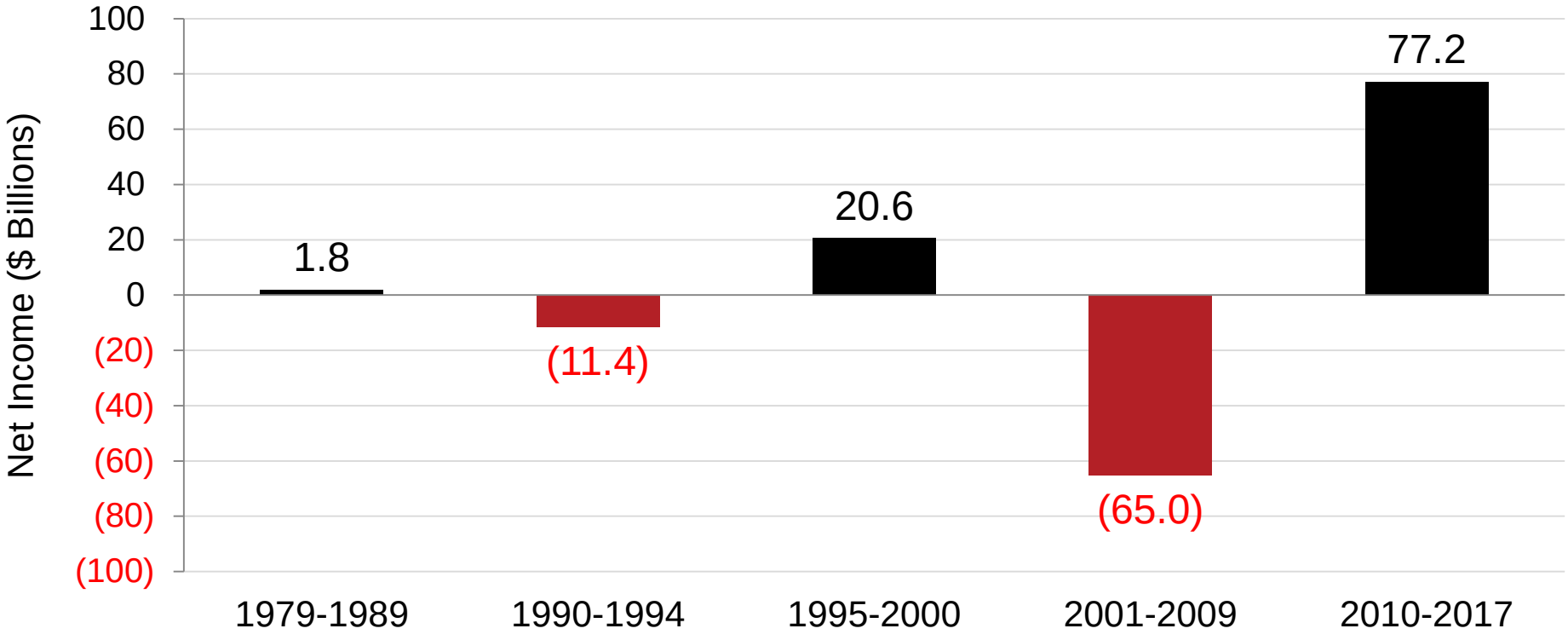


Source: DOT T100 segment data

* 12 months ended September 2018

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

Cumulative Net Income = $23 Billion (0.6% of Revenues, $1.04 per Enplaned Passenger)



Net 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

Per S&P, Only Two U.S. Passenger Airlines Have Investment-Grade Credit

"Standard & Poor's ratings express the agency's opinion about the ability and willingness of an issuer…to meet its financial obligations in full and on time."

Johnson & Johnson, Microsoft	AAA	
Alphabet (Google), ExxonMobil, USA	AA+	
Wal-Mart	AA	
Toyota	AA-	
PepsiCo, UPS	A+	**Investment Grade[1]**
Etihad,* GE, Target	A	
Amtrak, BP	A-	
Ryanair, Southwest, eBay, McDonald's, Starbucks	BBB+	
FedEx, Ford, Lufthansa, Marriott, Wizz Air*	BBB	
British Airways, Delta, Qantas, WestJet	BBB-	
Alaska, Air Canada	BB+	
Avis, JetBlue, United, Sabre	BB	**Speculative[2] Grade**
Aeroflot, American, Hawaiian, Spirit, Turkish	BB-	
Virgin Australia, Hertz, SAS	B+	
Gol Linhas Aereas (GOL)	B-	

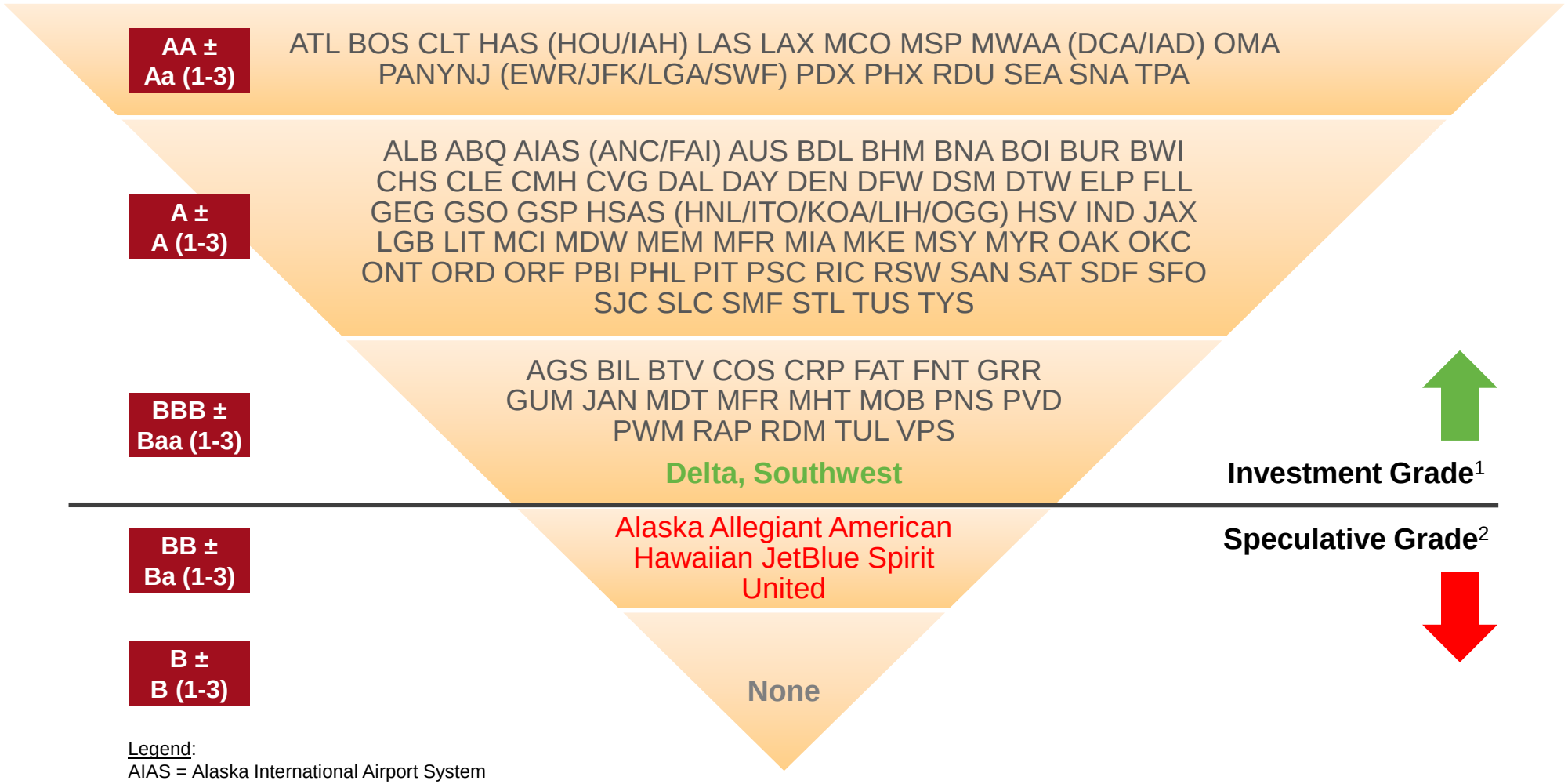
[1] Describes issuers with relatively high levels of creditworthiness and credit quality

[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?"

* Rated by Fitch (not currently rated by S&P)

Strong Credit Allows U.S. Airports to Access Capital Markets at Preferred Rates



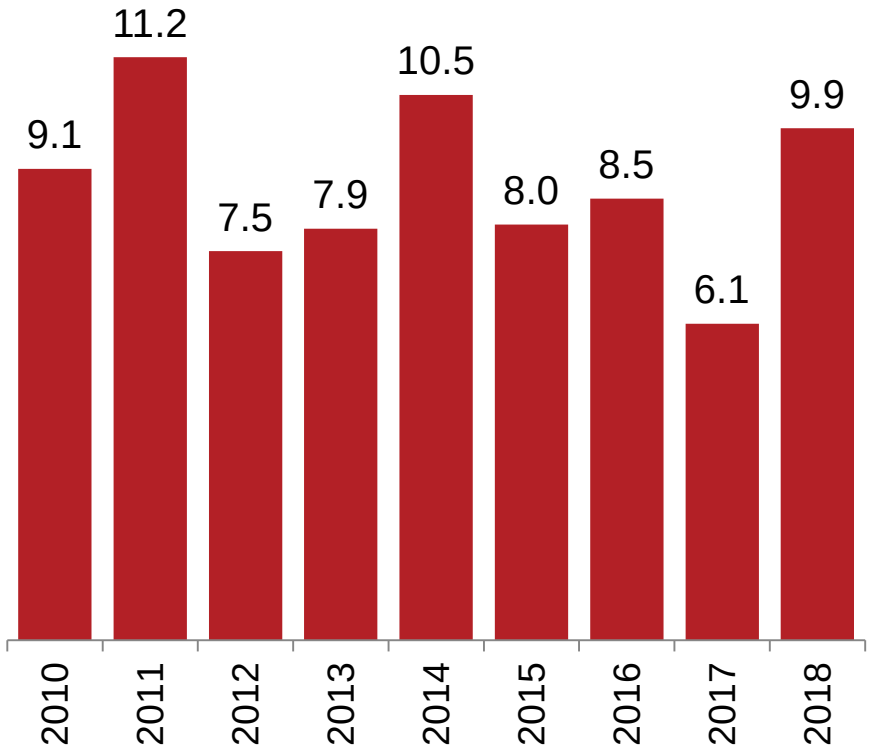
Legend:
AIAS = Alaska International Airport System
HAS = Houston Airport System; also includes EFD
HSAS = Hawaii's Statewide Airports System; also includes HDH/HNM/JHM/JRF/LNY/LUP/MKK/MUE/PAK/UPP
MWAA = Metropolitan Washington Airports Authority
PANYNJ = Port Authority of New York and New Jersey; also includes TEB

[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

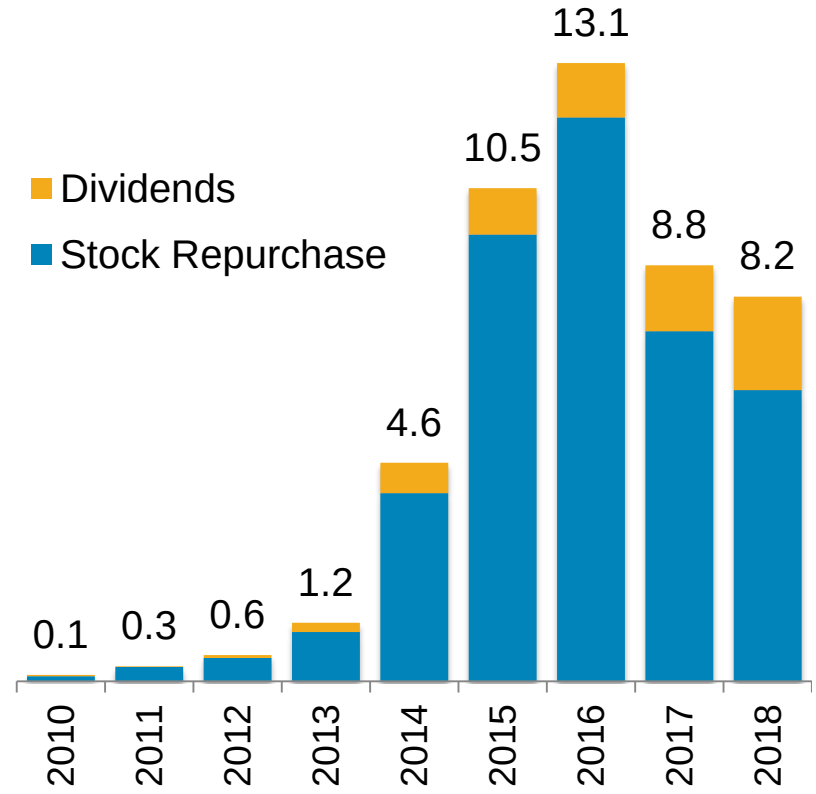
Sources: Standard and Poor's and Moody's

Following 2001-2009 Financial Crisis, U.S. Airlines Have Retired ~$79B in Debt and Returned ~$48B to Shareholders to Lure and Retain New Equity Investors

Retirement of Debt ($ Billions)



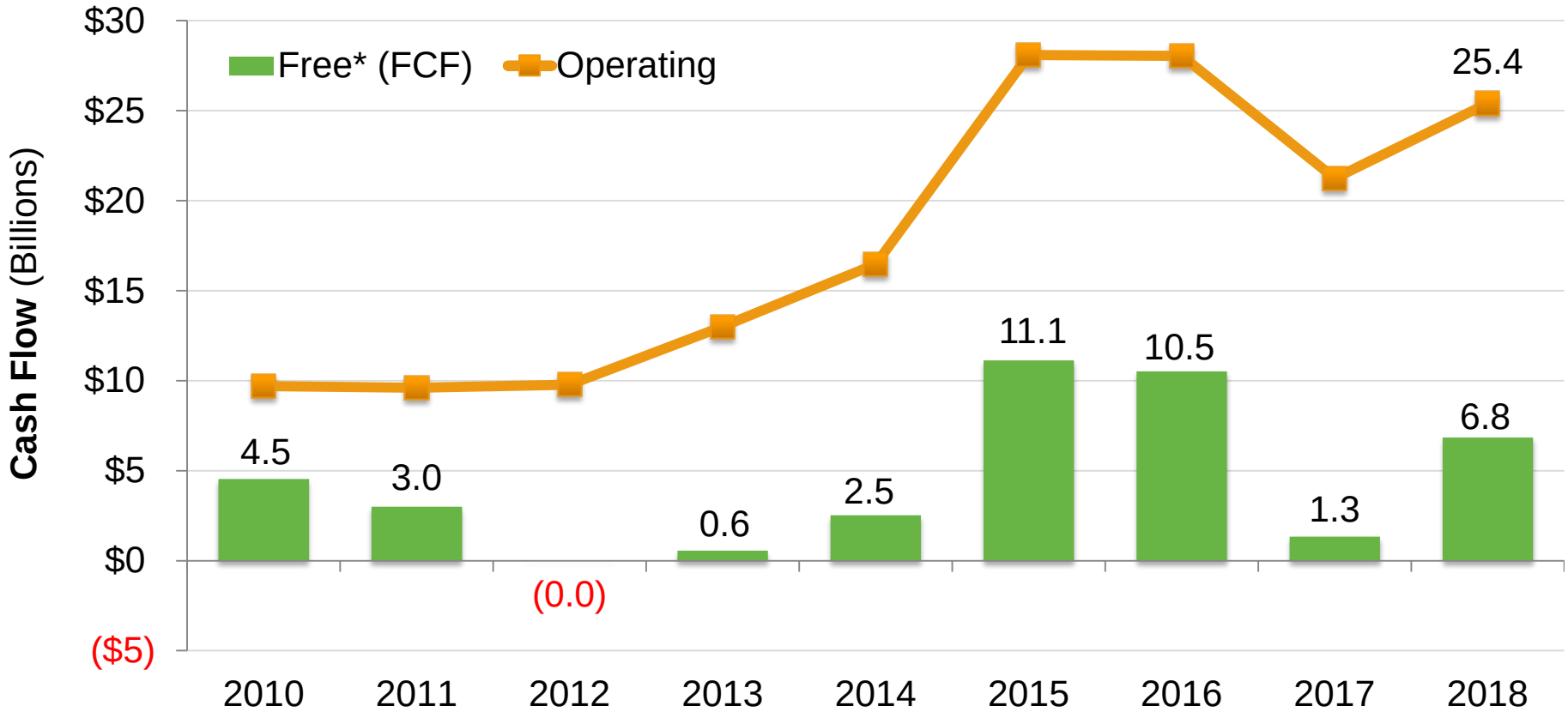
Returns to Shareholders ($ Billions)



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 *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

Many Long-Term Investors Remain Wary of the Airline Industry

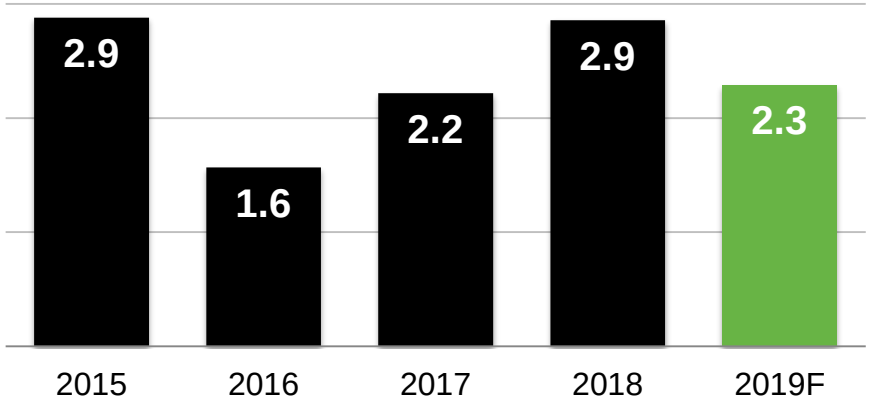
"We actually are the largest holder of the four largest airlines… It's a fiercely competitive industry, the question is whether it's a suicidally competitive industry… I mean, when you get virtually every one of the major carriers and dozens and dozens and dozens of minor carriers going bankrupt, there ought to come a point you find that maybe you're in the wrong industry…"

-- Warren Buffet, Berkshire Hathaway annual meeting (May 6, 2017)

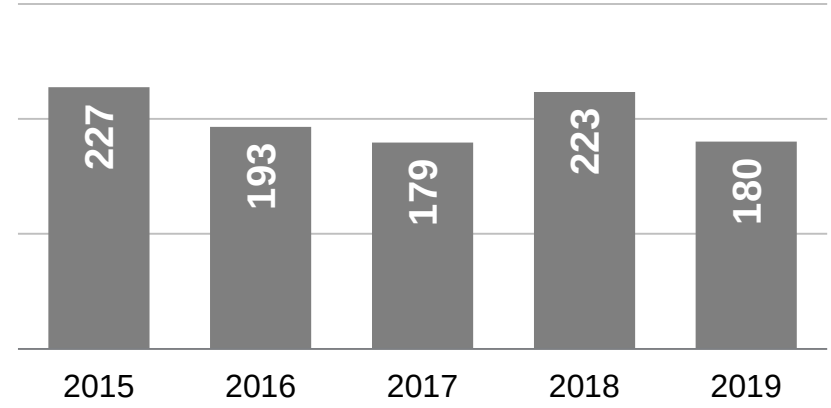
Source: "9 Best Warren Buffett Quotes From the Berkshire Hathaway Annual Meeting" (May 8, 2017)

U.S. Economy, Jobs Growing; Household Net Worth Continues to Set New Records

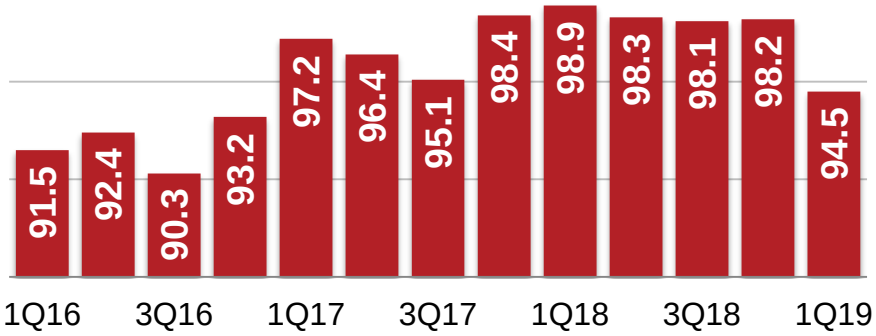
U.S. Real GDP Growth (% CAGR)



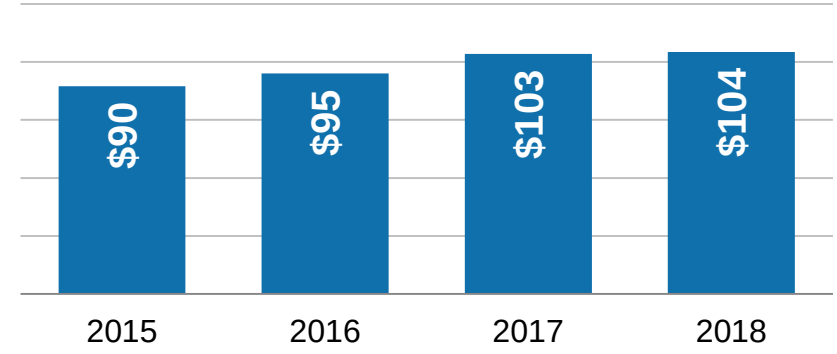
U.S. Employment Growth (000s per Month)



Consumer Sentiment (UMich Index 1Q66=100)



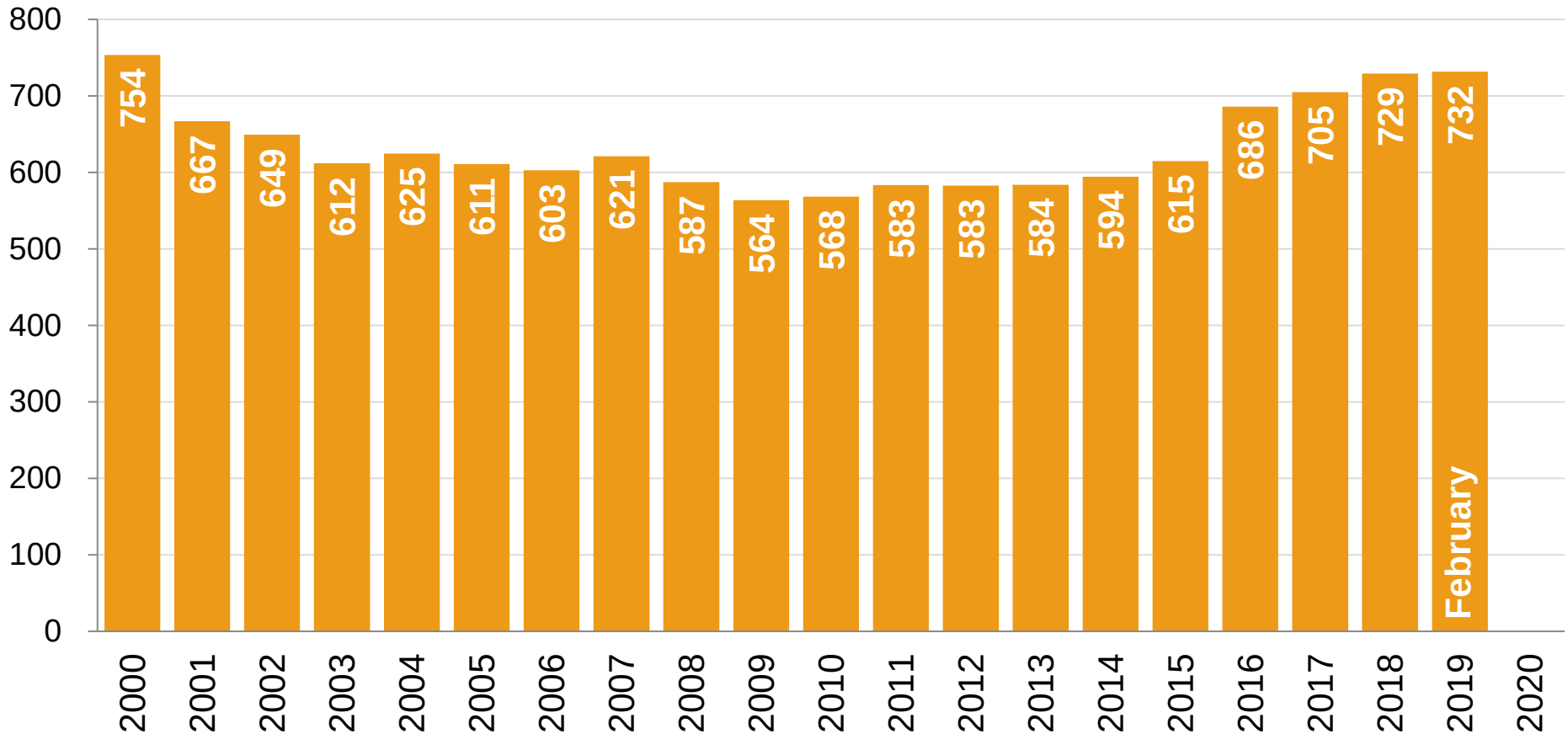
U.S. Household Net Worth (Trillions)



Sources: U.S. GDP (Bureau of Economic Analysis actuals and IHS Markit forecast); U.S. nonfarm payroll employment growth (month-over-month, seasonally adjusted) from BLS; consumer sentiment (University of Michigan, Index 1Q 1966=100); U.S. household net worth in current dollars, not seasonally adjusted (Federal Reserve)

U.S. Airline Industry Employment at Highest Level Since 2000

Year-End Full-Time + Part-Time Employees at U.S. Passenger and Cargo Airlines (000s)

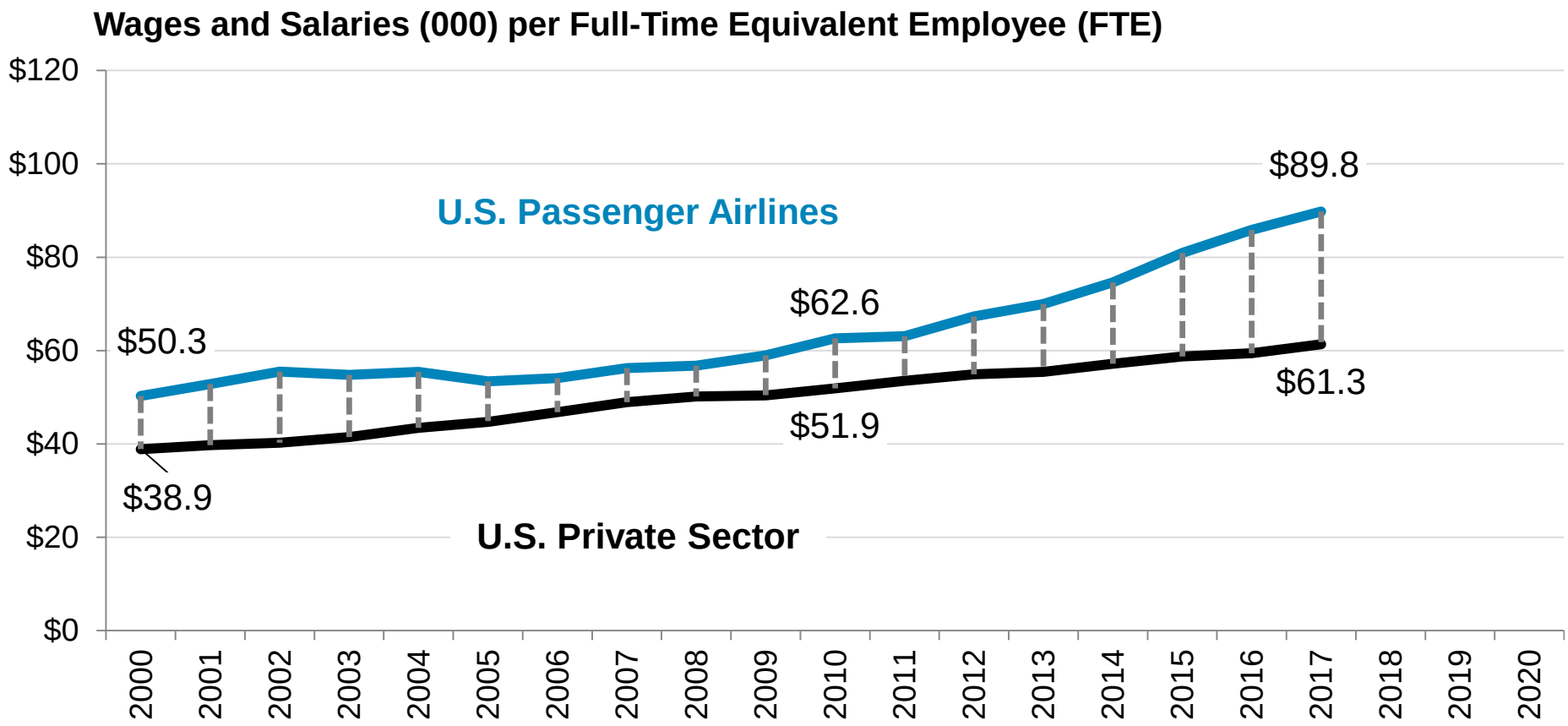


Source: Bureau of Transportation Statistics

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

U.S. Airline Wages Averaged 47% More Than U.S. Private Sector in 2017

From 2010 to 2017, Airline Wages Rose 43% (More Than Double 18% for Overall USA*)



Sources: BEA NIPA Table 6.6D and A4A Passenger Airline Cost Index

Improving Finances Enabling Significant Reinvestment in Customer Experience


- New or refurbished aircraft, larger overhead bins for luggage
- Availability of lie-flat seating with AC power and USB, proliferation of Wi-Fi and inflight entertainment
- Expanded route networks (scope and frequency) and schedules (seat growth)
- Improved airport check-in areas, lounges, gate amenities, baggage systems, ground equipment
- Investments in new automated security screening lanes (including automatic bin returns)
- Continued development and roll-out of mobile technology and website/kiosk functionality
- Increasing operational reliability (controlled for weather conditions)
- Enhanced tools (computers, tablets, software) and training for customer-contact employees

Improving Airline Finances Translating to Customer Benefits

"The recent wave of consolidation has meant higher profits and more stability…, which **has led airlines to invest in technology, new airplanes and better customer service… 'A healthy airline industry means a better flying experience overall.'**"

-- "Rick Seaney, FareCompare.com, in "AMR Stands to Gain Vast Route Network," *Wall Street Journal*, Feb. 7, 2013

"What we're seeing in airlines is what we've seen in railroads, telecom, and trucking... You'll have **fewer crises, fewer bankruptcies, more predictability, more stability**."

-- Clifford Winston, Senior Fellow, Brookings Institution, *Christian Science Monitor*, Feb. 14, 2013

Heard on the Street…

"**With airlines in the U.S. now generating acceptable returns, their ability to reinvest in their products has been greatly enhanced**. Today's traveler is likely to check in via smart phone, monitor the upgrade list in real time, board and enjoy a sufficiently sized overhead, and pass the time en route surfing the Internet. **There is no way any of this would have been possible had the industry not found its way to firmer financial footing**. For those in premium cabins, long gone are the EZ-boy recliners requiring a 'double excuse me' in order to get to the aisle. Today's business traveler is likely to enjoy direct aisle access and a lie-flat seat suitable for sleeping, even on transcon flights. **Absent the industry's financial turnaround, these benefits simply would not be available**."

-- Jamie Baker, Managing Director, Global Equity Research, J.P. Morgan, Feb. 28, 2014

Jamie Baker is a Research Analyst at J.P. Morgan. His views may not be representative of others at the Company. For disclosures related to companies that Mr. Baker covers, please see https://jpmm.com/research/disclosures

Airlines for America®

We Connect the World