

STATE OF THE U.S. AIRPORT INDUSTRY

FROM A FINANCIAL PERSPECTIVE

2018 ACI-NA National Conference

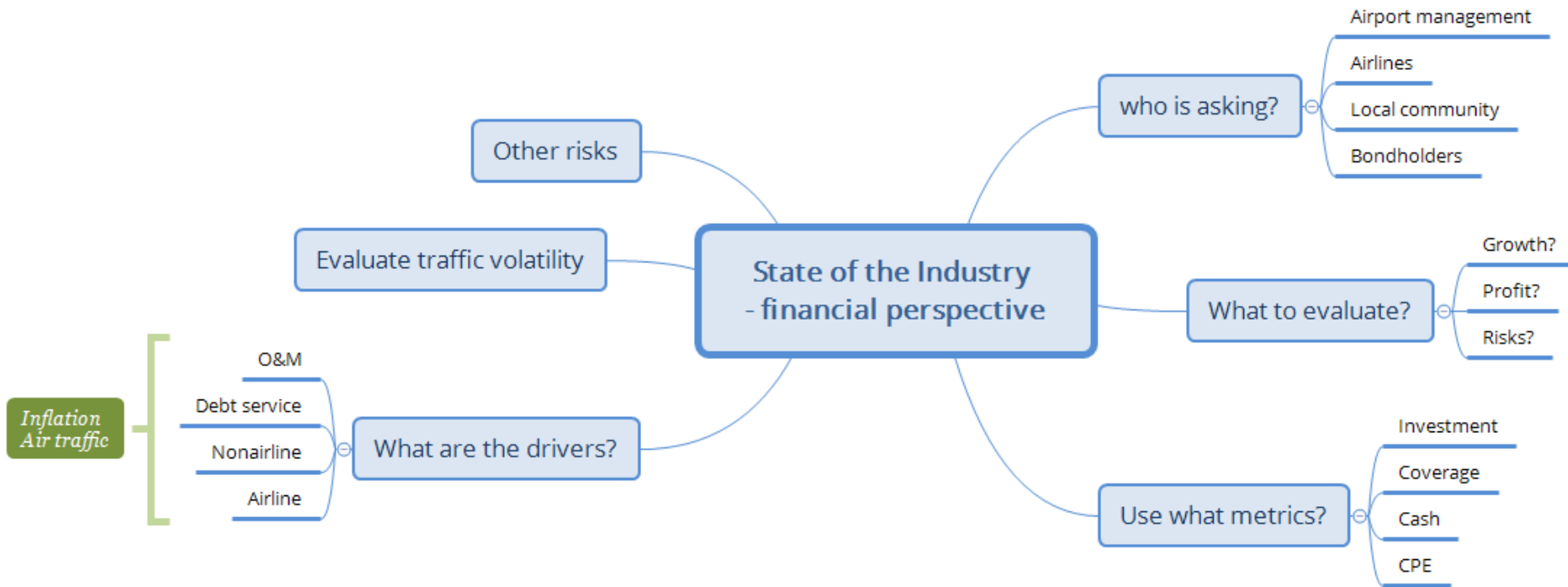
Sep. 30 – Oct. 2, 2018

Nashville, TN

Tatiana Starostina

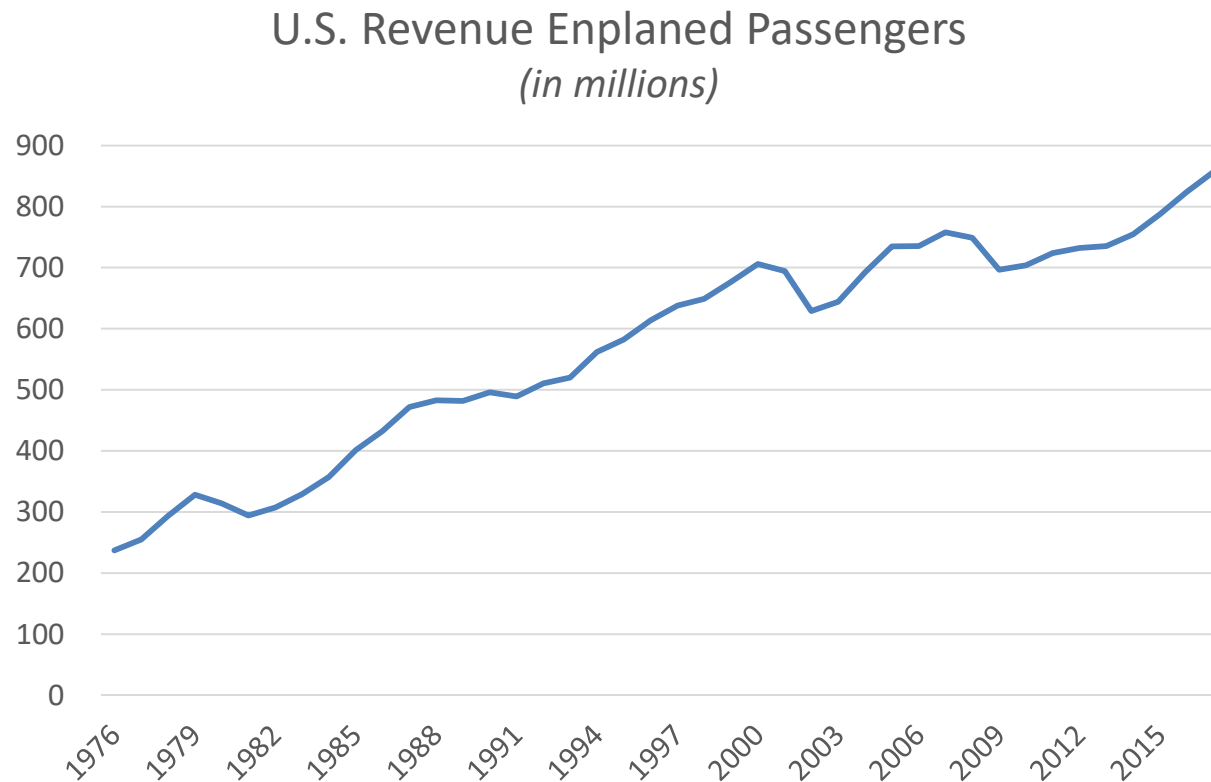
Dafang Wu

Overview



For state of the airline industry from a financial perspective, key metrics are profit and growth

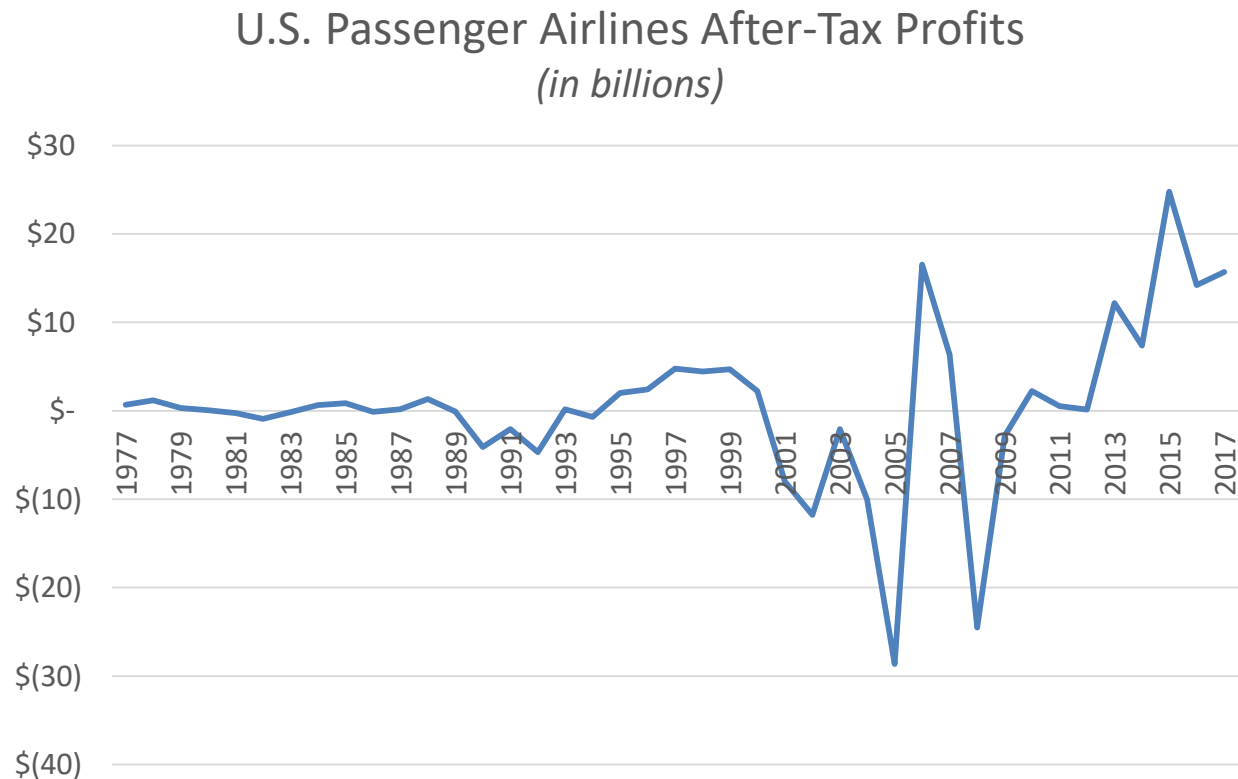
Equity holders benefit from upside potential and focus on profit and/or growth.



Source: 1976-2016: FAA 2017 TAF in federal fiscal years; CY 2017: FAA passenger boarding data.

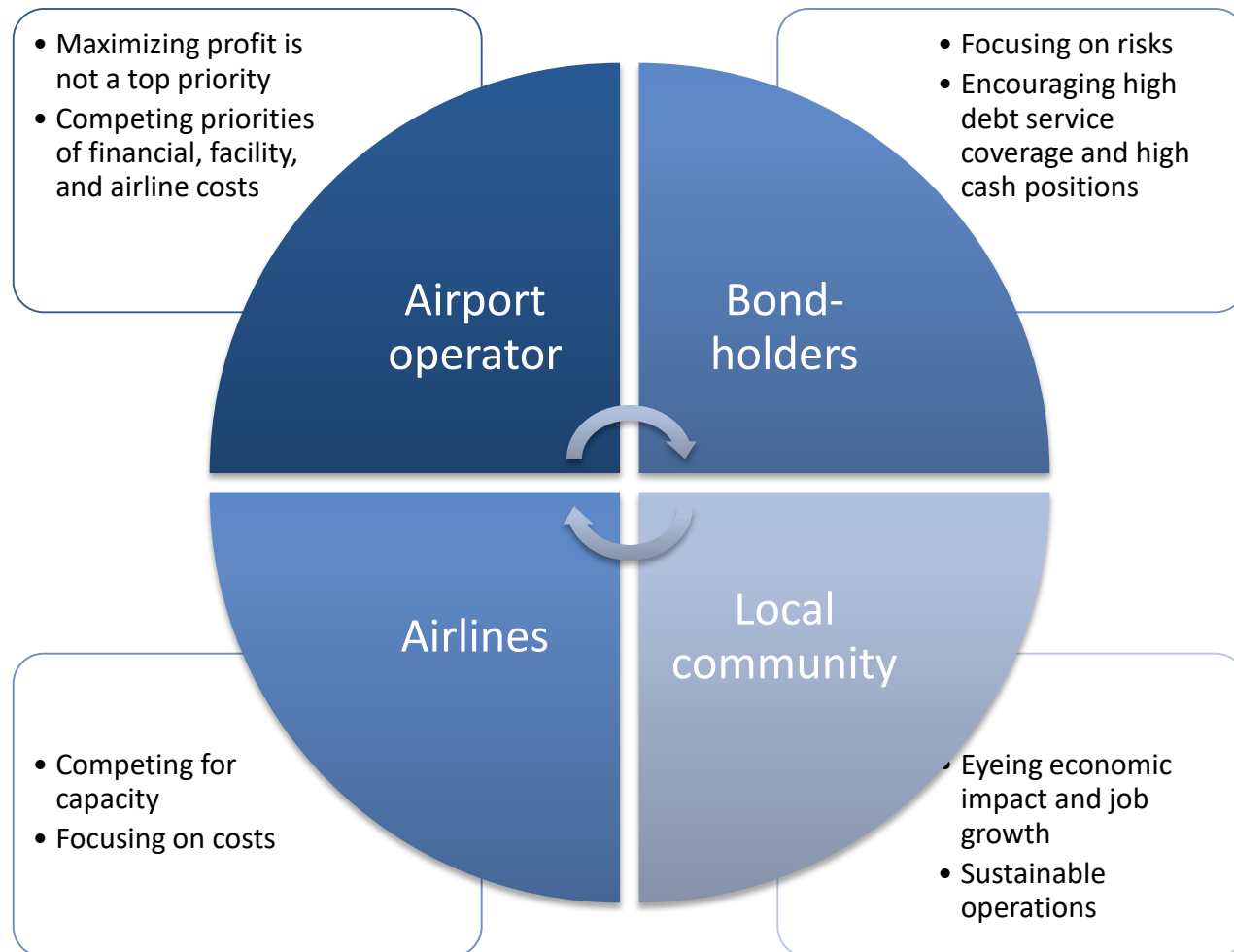
Profit is more important to debt holders; growth is not a priority

Debt holders do not benefit from upside potentials, so focus on profit and risk.



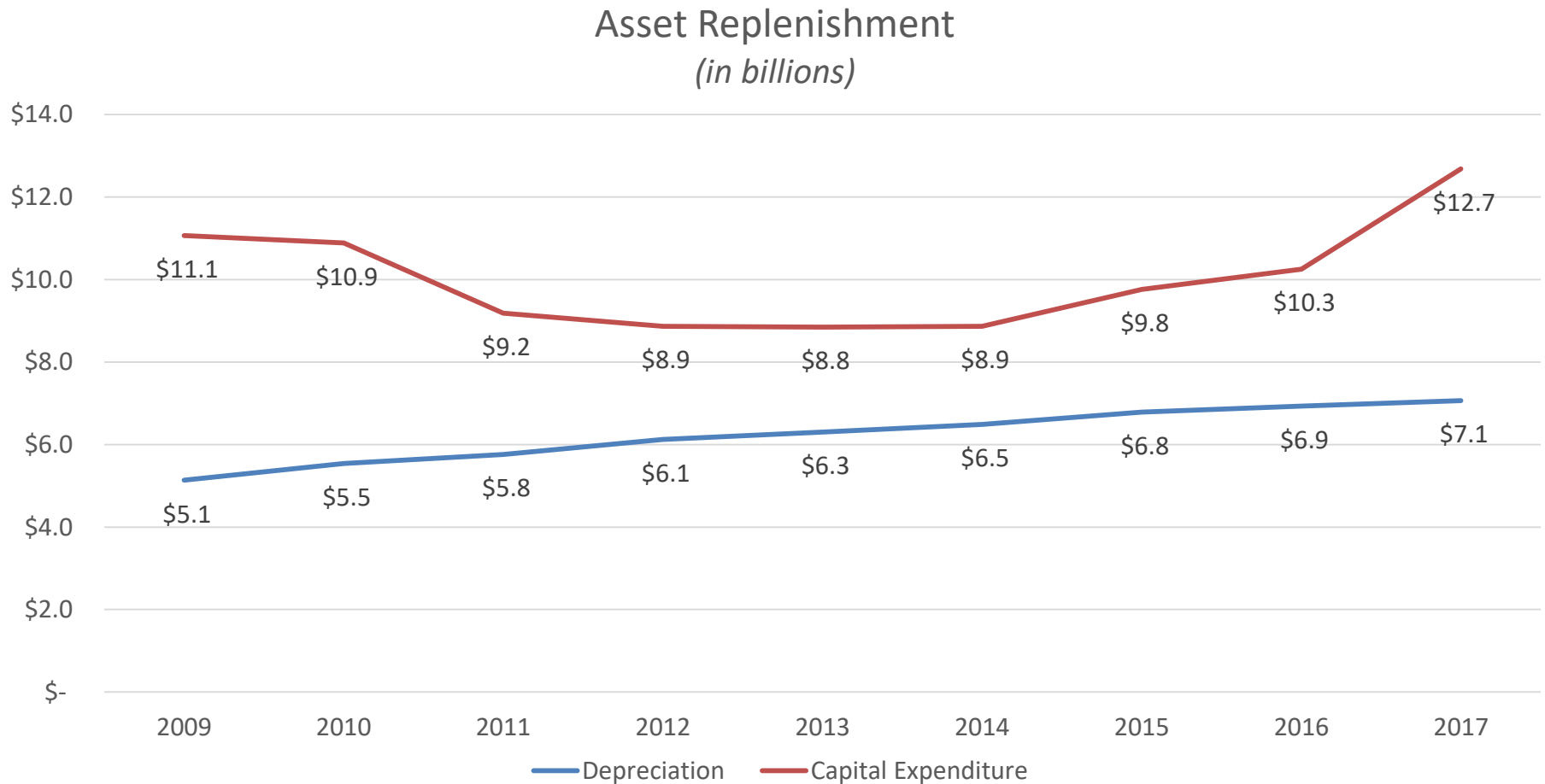
Source: U.S. DOT Form 41.

Financial evaluation of U.S. airport industry is different partly because airport revenues cannot be used outside the airport.



FY 2017 Overview

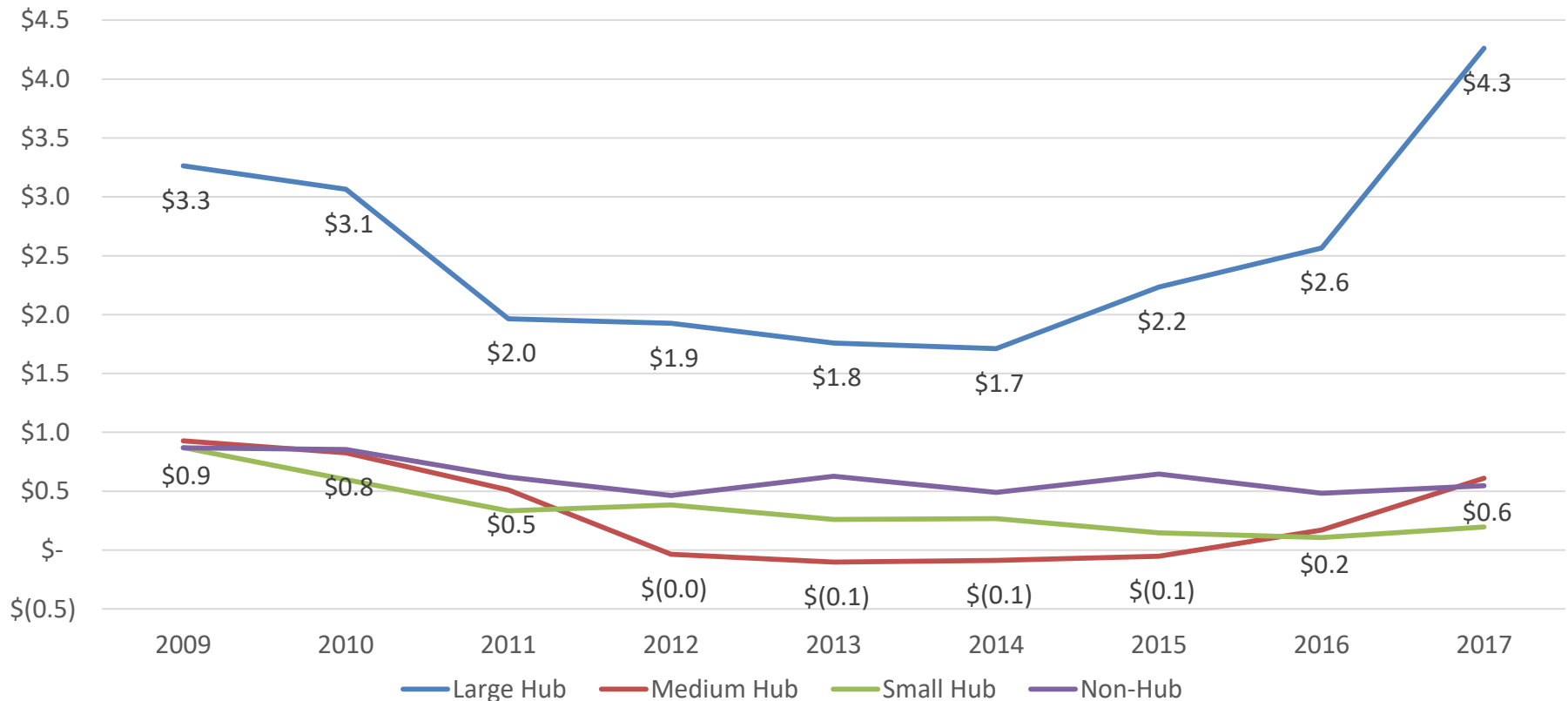
Capital investment was relatively low from 2011 to 2015 but increased in 2017.



Source: Respective fiscal year data from FAA Form 5100-127, adjusted for missing data.

At medium hubs, capital expenditure barely covers depreciation.

Capital Expenditure Less Depreciation
(in billions)



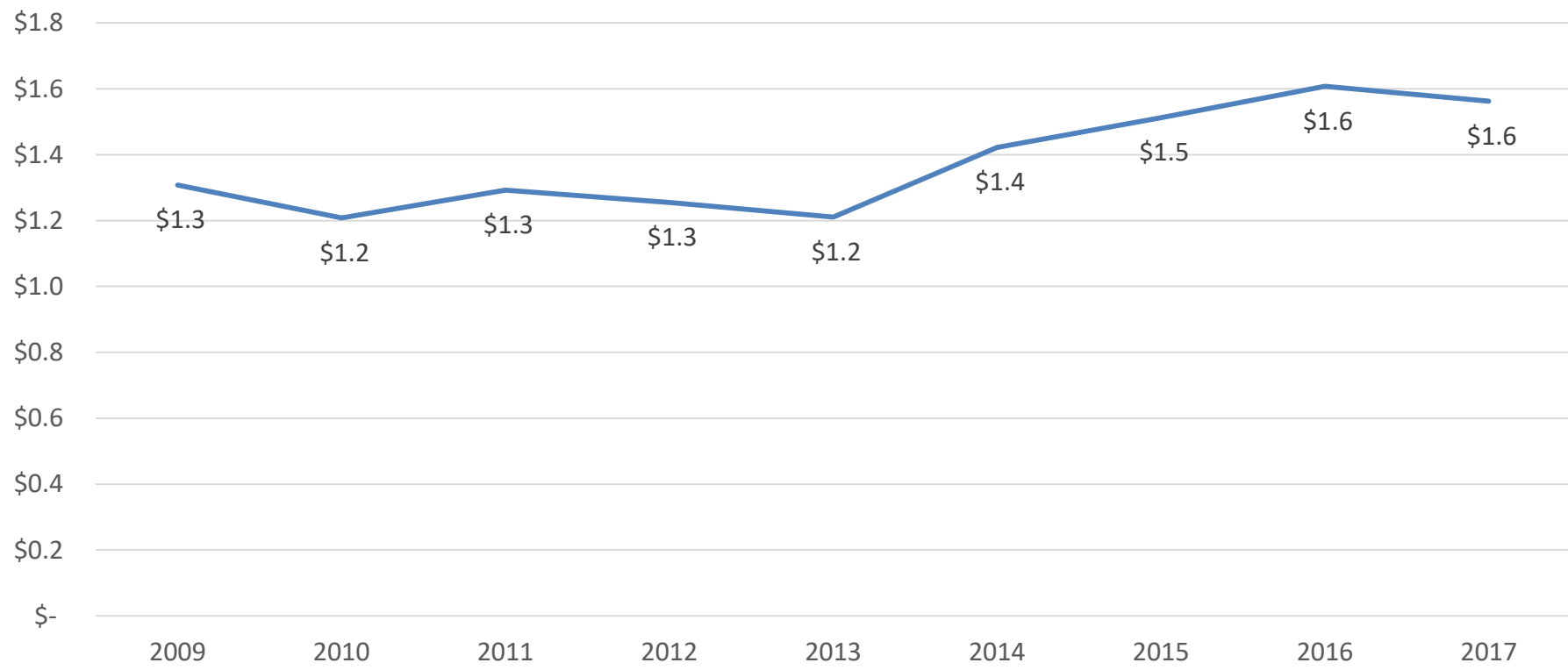
Source: Respective fiscal year data from FAA Form 5100-127, adjusted for missing data.

Note: Hub classification in FY 2017 is applied to all historical years in this presentation.

CY 2017 revenue enplanements: large hub (72.1%), medium hub (16.2%), small hub (8.3%), and non-hub (3.3%).

Despite higher debt service, U.S. airports were able to improve the coverage ratio.

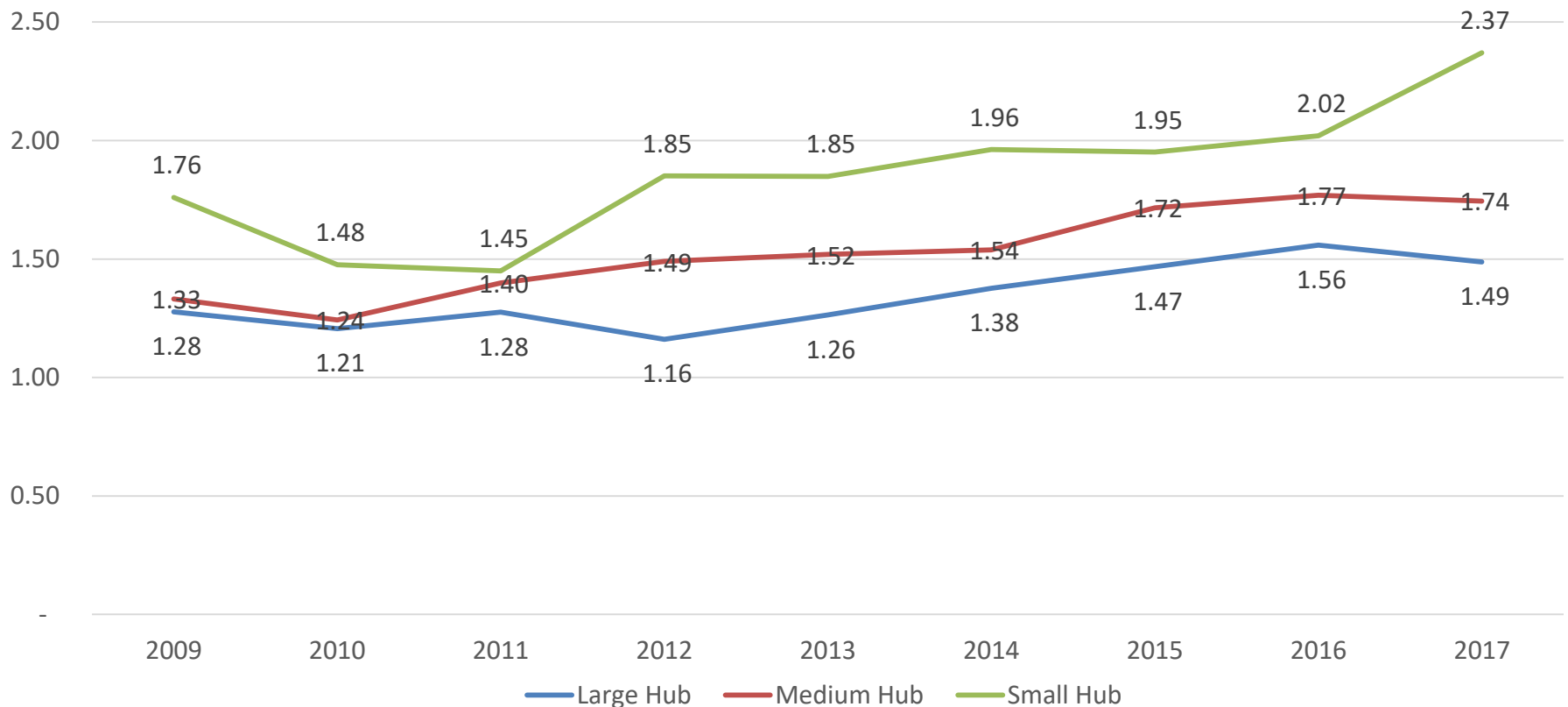
Operating Income/Net Debt Service



Source: Respective fiscal year data from FAA Form 5100-127, excluding HNL/OGG, MDW/ORD, and EWR/JFK/LGA.

Coverage ratios were higher for small hubs, probably because otherwise they may not have had access to the bond market.

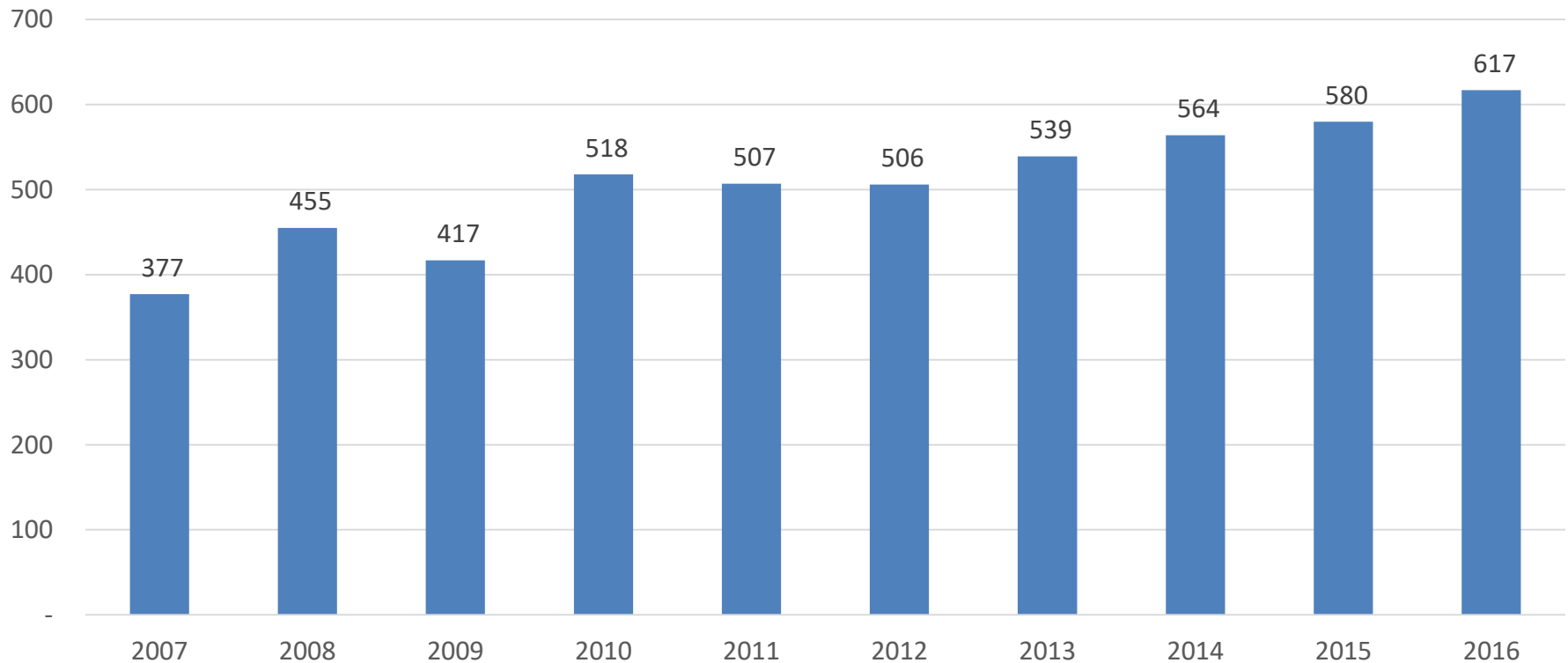
Operating Income/Net Debt Service



Source: Respective fiscal year data from FAA Form 5100-127, excluding HNL/OGG, MDW/ORD, and EWR/JFK/LGA.

Days cash on hand is improving, although many airports may spend on capital projects in the next 5 years.

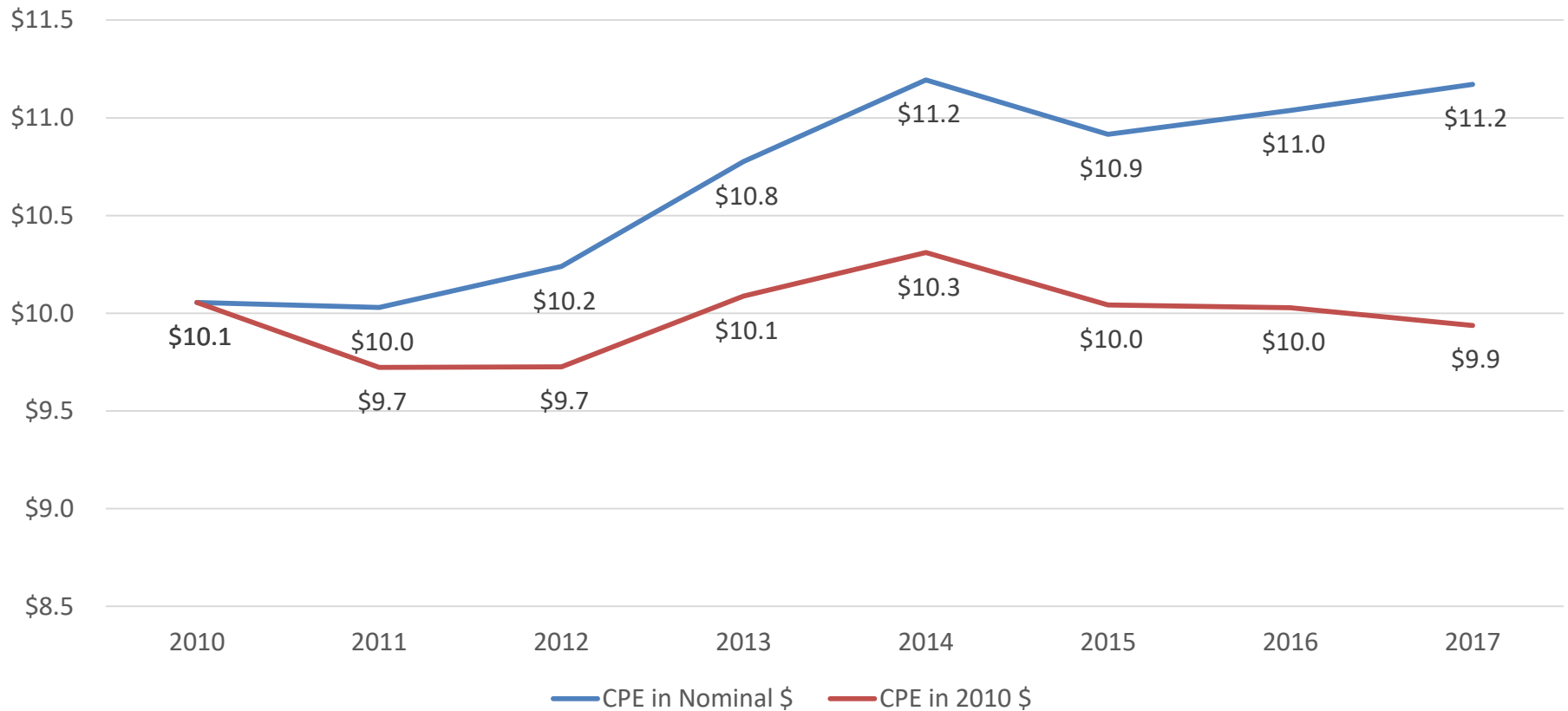
Median of Days Cash on Hand
Moody's Rated U.S. Airports



Source: Moody's, October 2017.

Average CPEs have not changed in constant dollars, although airlines claim otherwise.

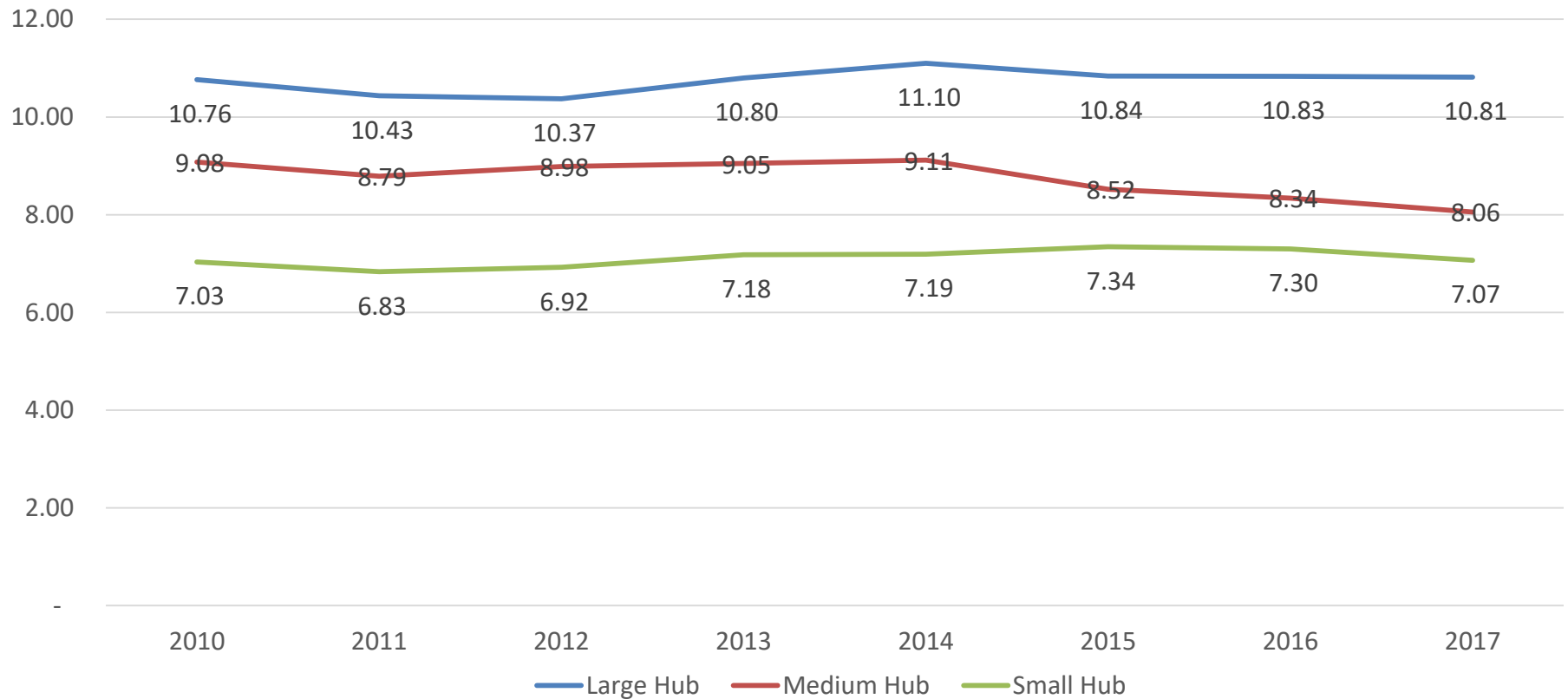
Passenger Airline Payments per Enplaned Passenger
U.S. Airports



Source: Respective fiscal year data from FAA Form 5100-127, excluding 2009 due to data issues.

CPEs at medium hubs were actually declining when measured in 2010 constant dollars.

Passenger Airline Payments per Enplaned Passenger
U.S. Airports, in 2010 Dollars



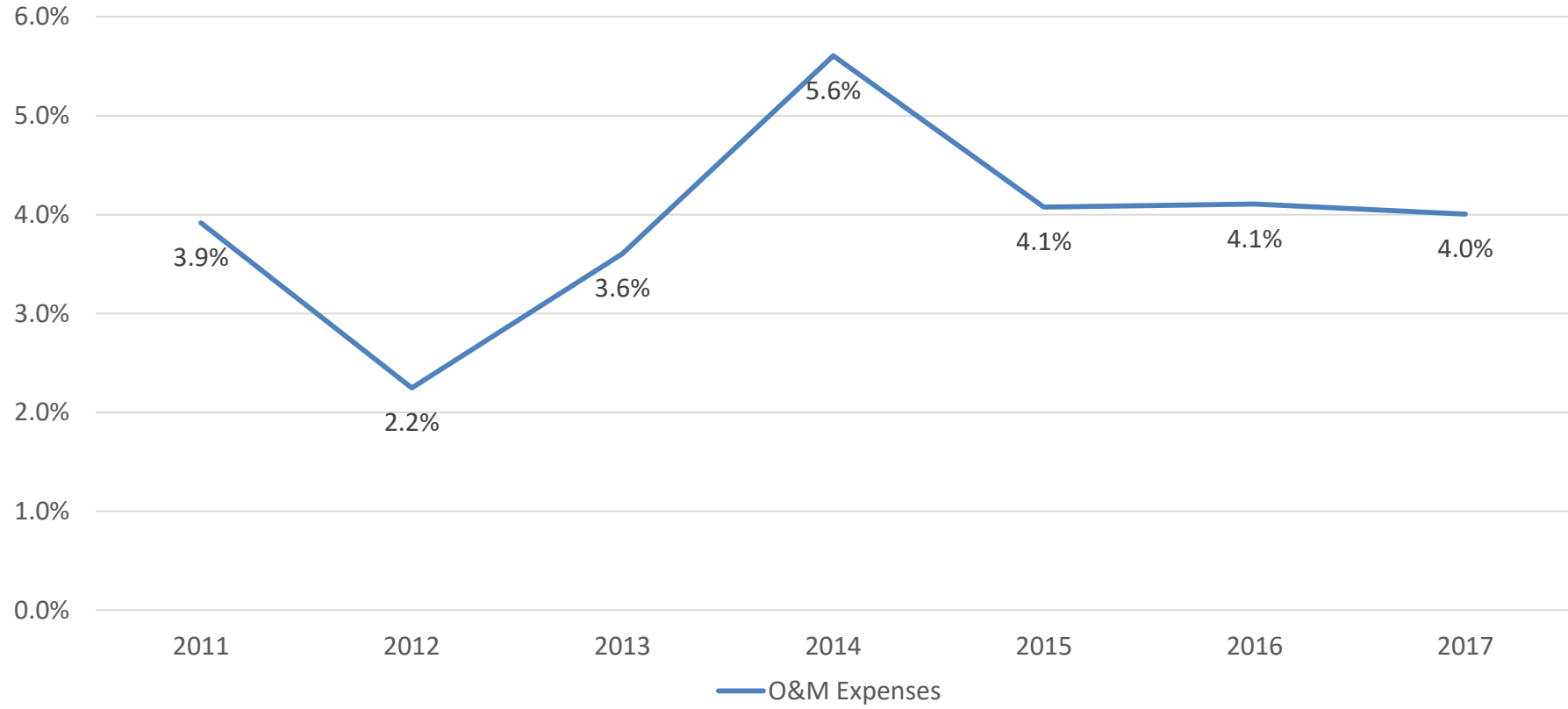
Source: Respective fiscal year data from FAA Form 5100-127, excluding HNL/OGG, MDW/ORD, and EWR/JFK/LGA.

Components of Financial Performance

Driven by Inflation and Passenger Growth

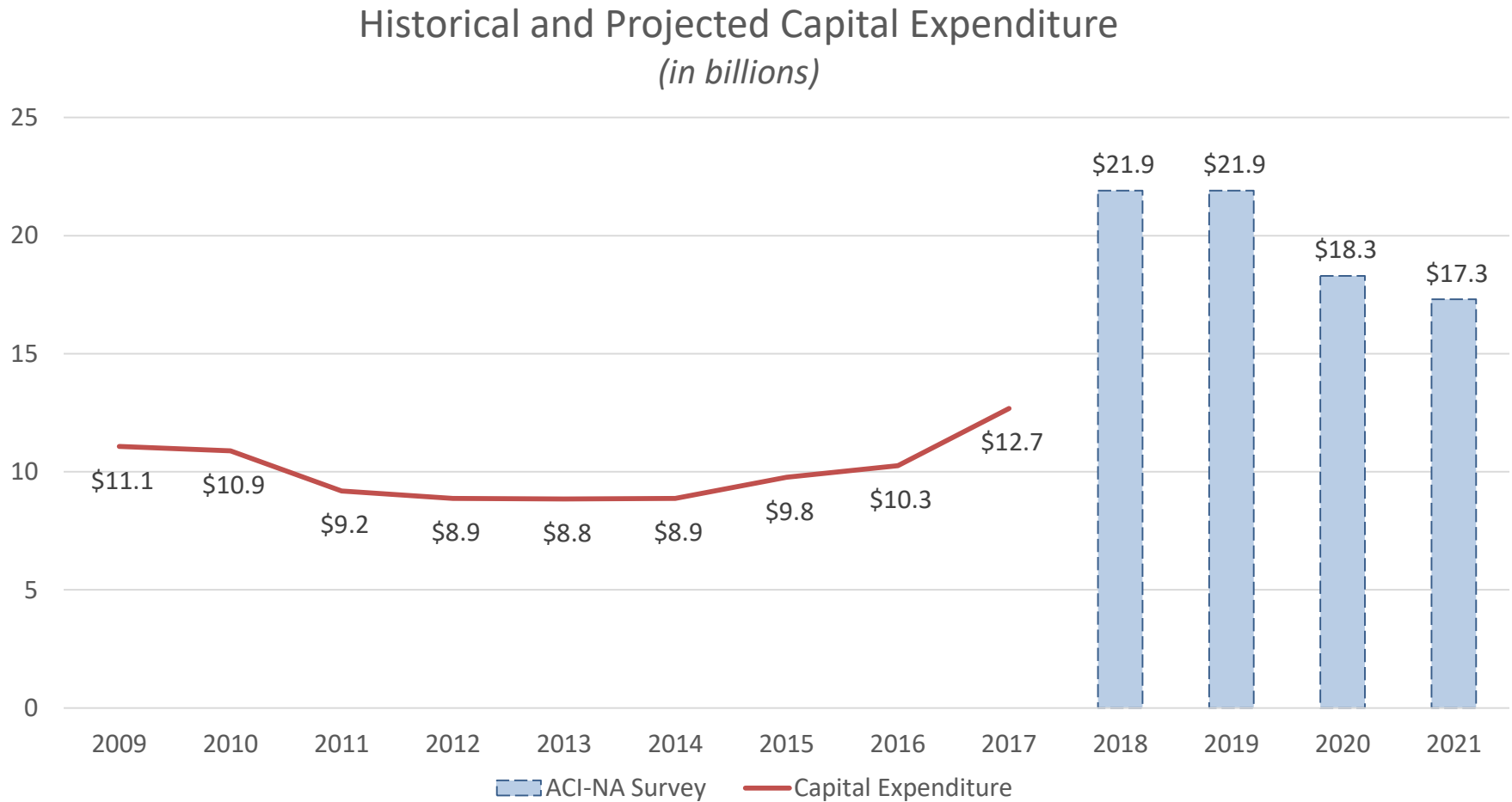
O&M expenses increased, on average, 2-3% above inflation.

% Change in Operating Expenses
U.S. Airports



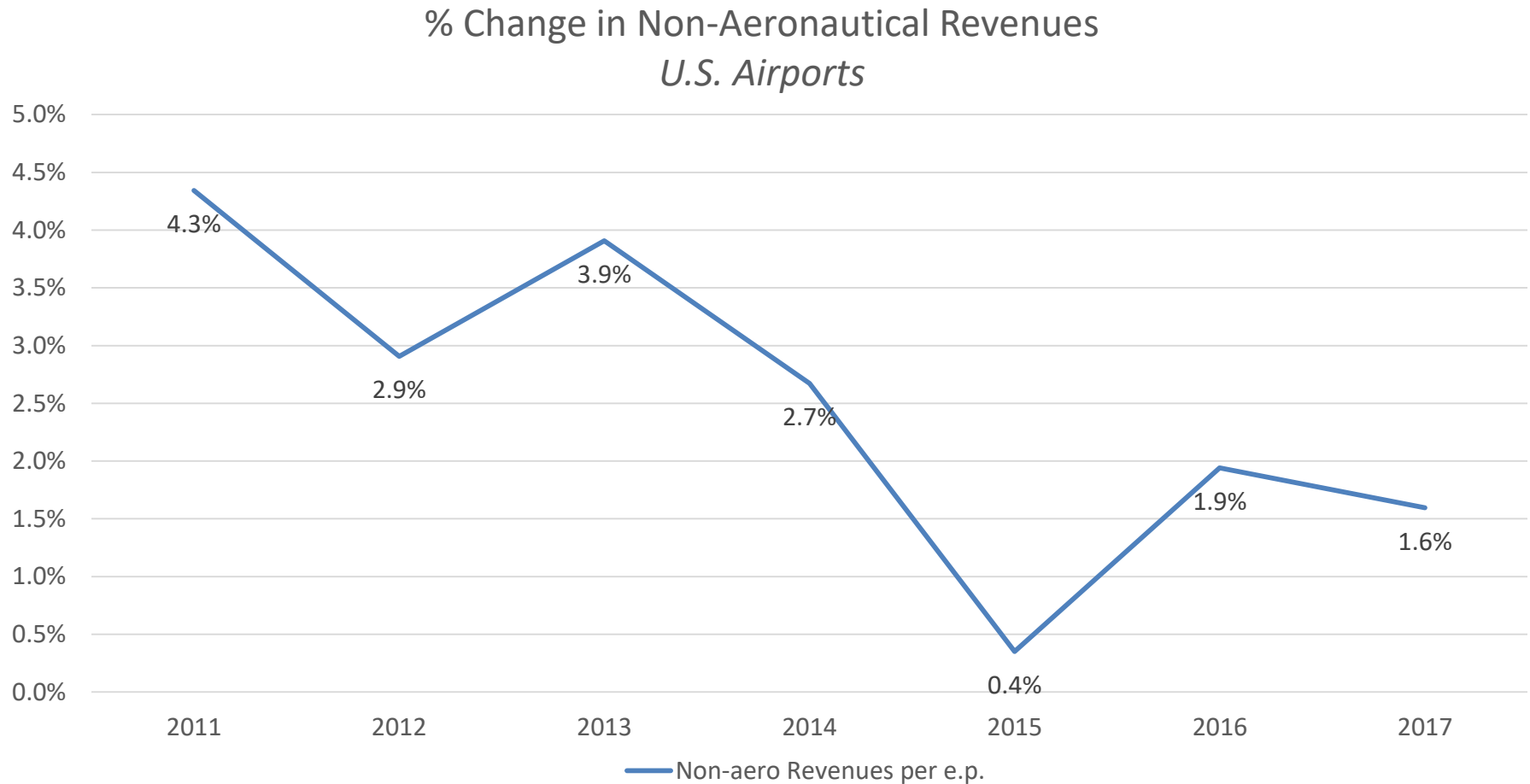
Source: Respective fiscal year data from FAA Form 5100-127.

Airport capital needs are increasing but external funding sources like PFC are not increasing.



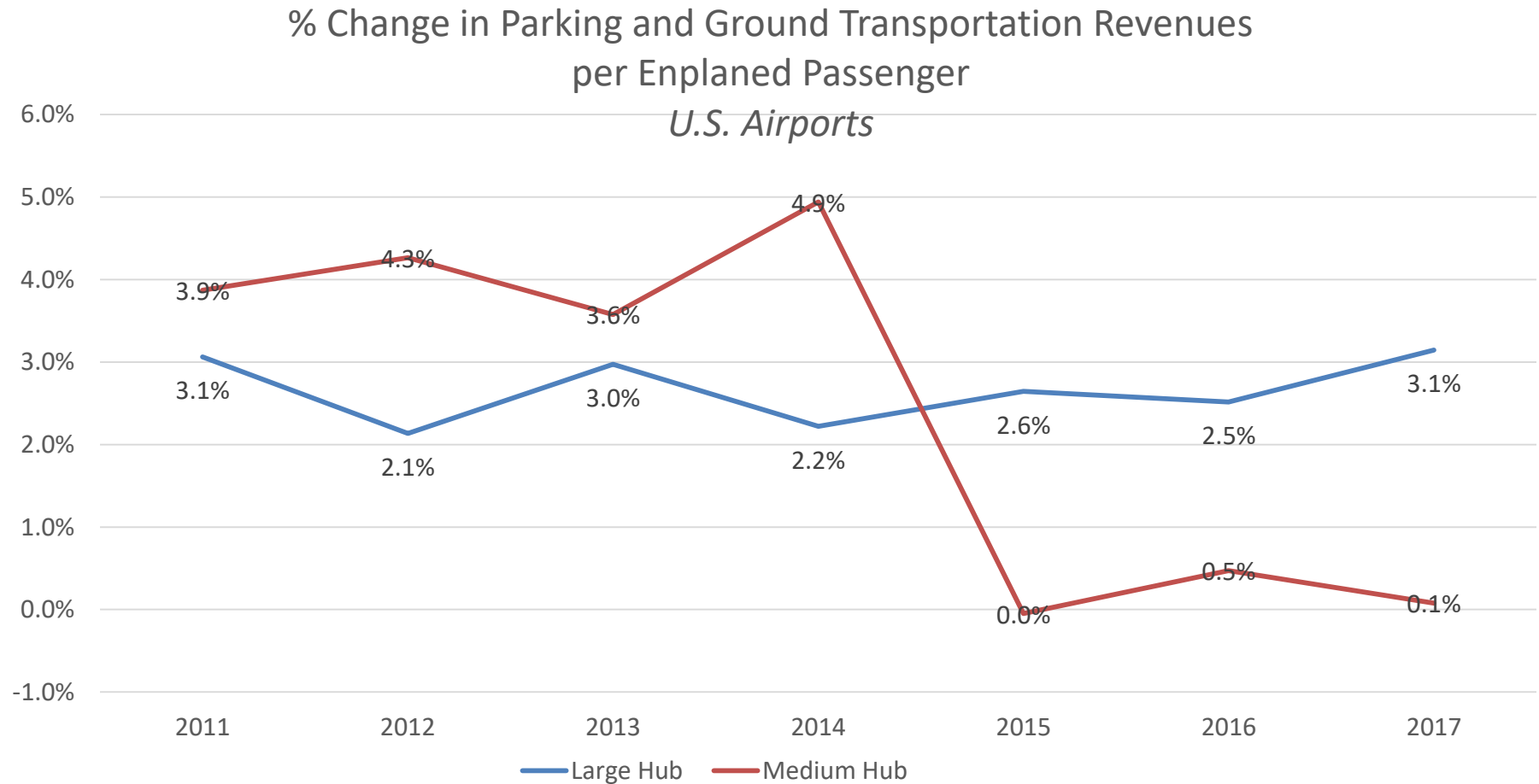
Source: Historical – FAA Form 5100-127; future estimates compiled by ACI-NA.

Non-aeronautical revenues per enplaned passenger barely exceed inflation.



Source: Respective fiscal year data from FAA Form 5100-127.

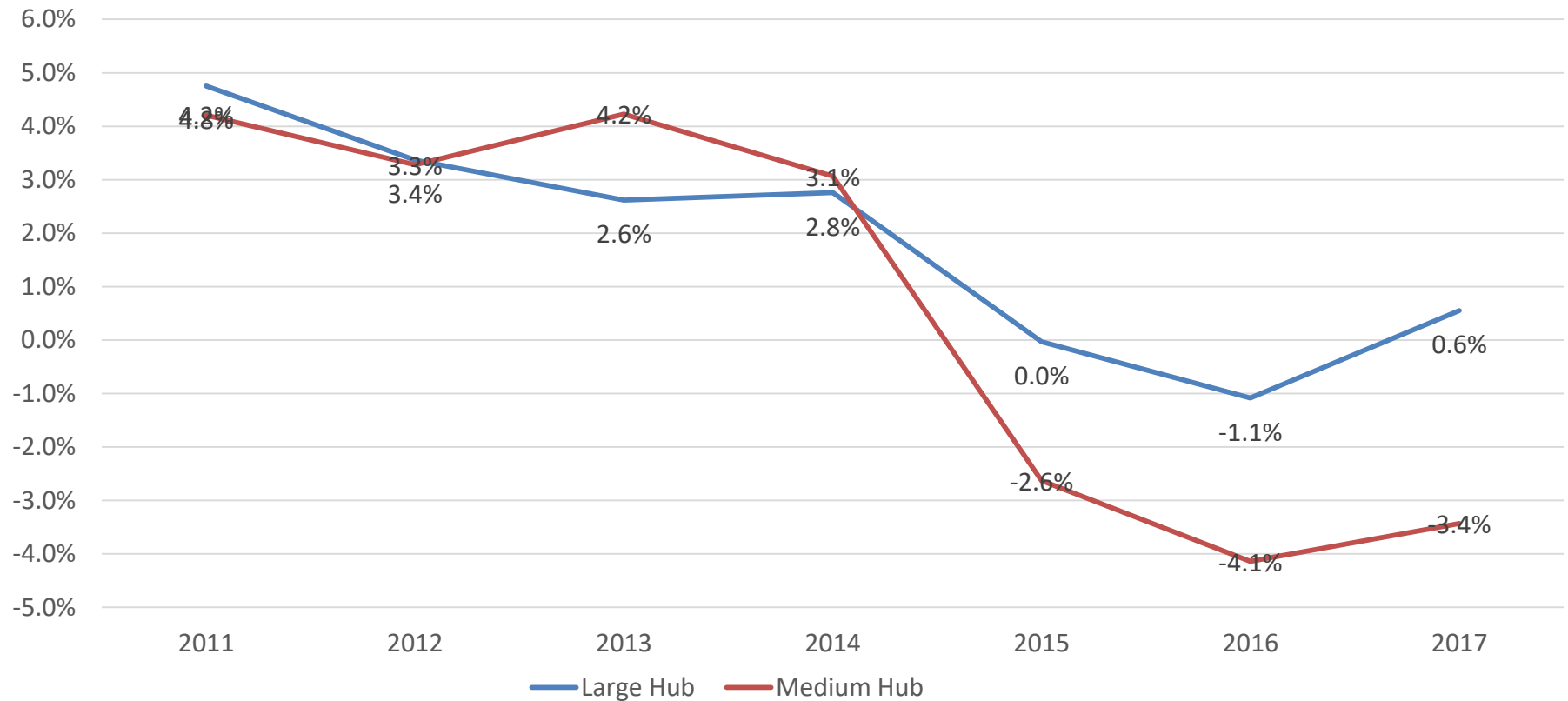
Parking and ground transportation revenues per e.p. did not decline, probably due to TNC fees implemented.



Source: Respective fiscal year data from FAA Form 5100-127.

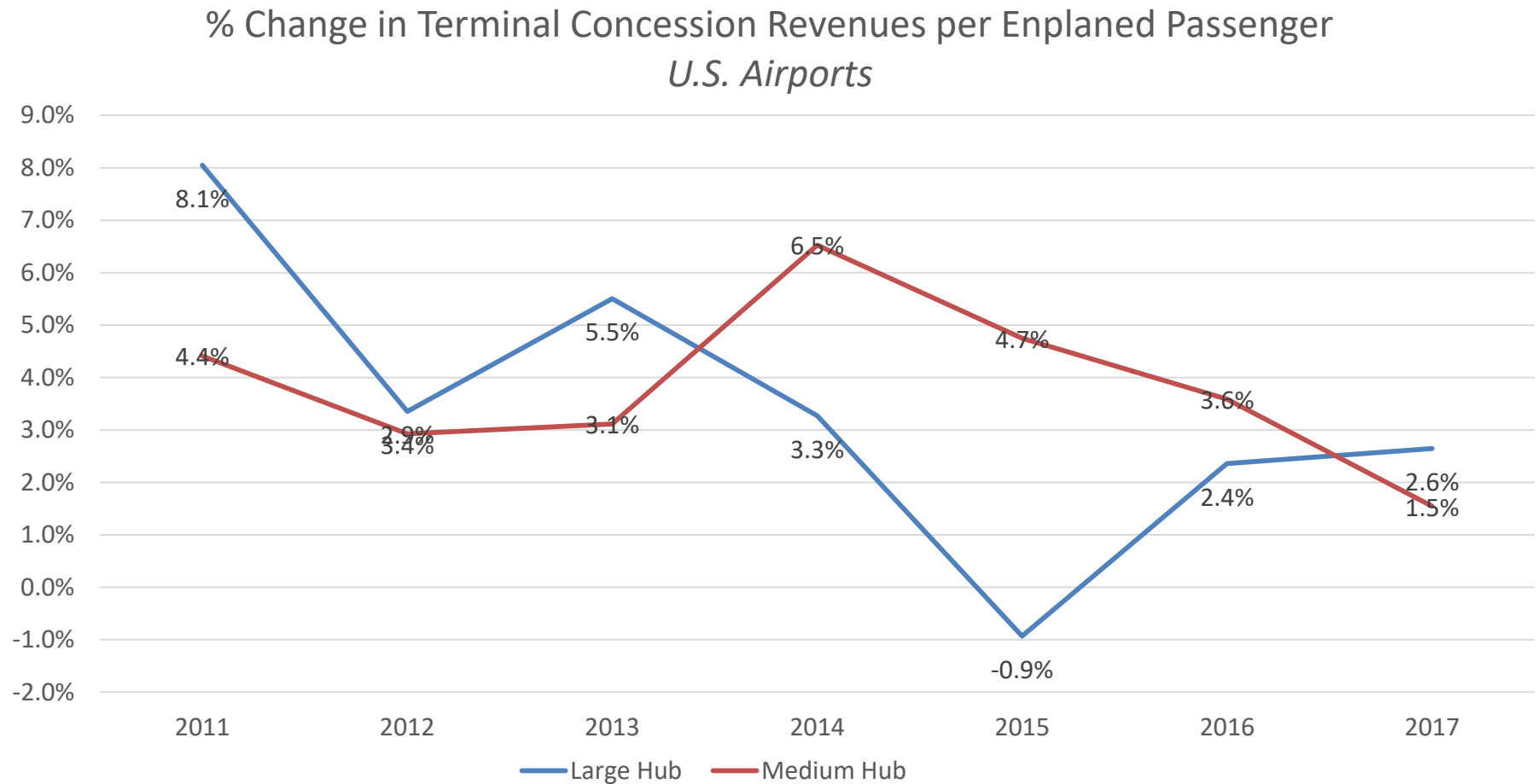
The decline in rental car revenues is concerning.

% Change in Rental Car Revenues per Enplaned Passenger
U.S. Airports



Source: Respective fiscal year data from FAA Form 5100-127.

Terminal concession revenues per enplaned passenger at large hubs were above inflation.

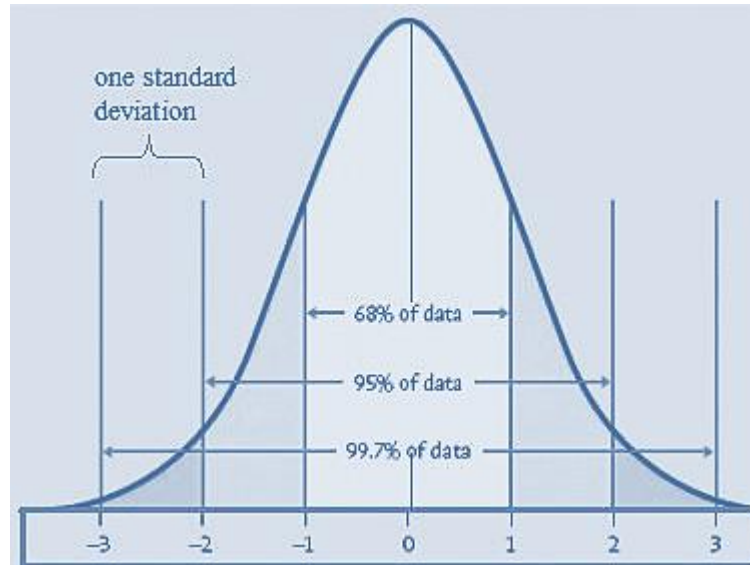


Source: Respective fiscal year data from FAA Form 5100-127.

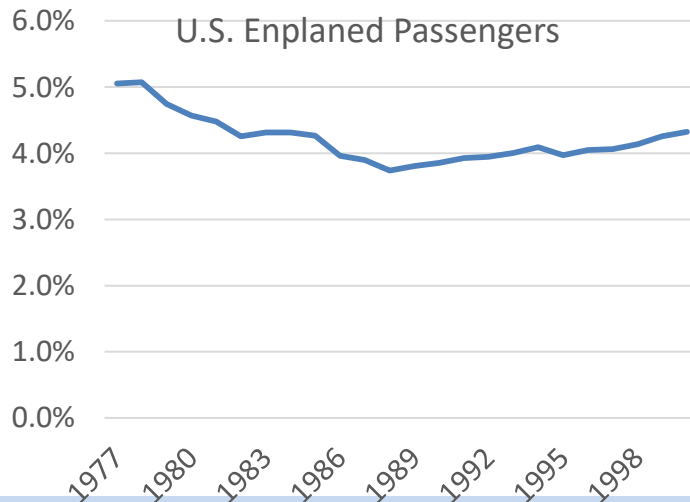
Measuring Traffic Volatility

Standard Deviation and Beta

Standard deviation can be used to measure the historical volatility of traffic changes

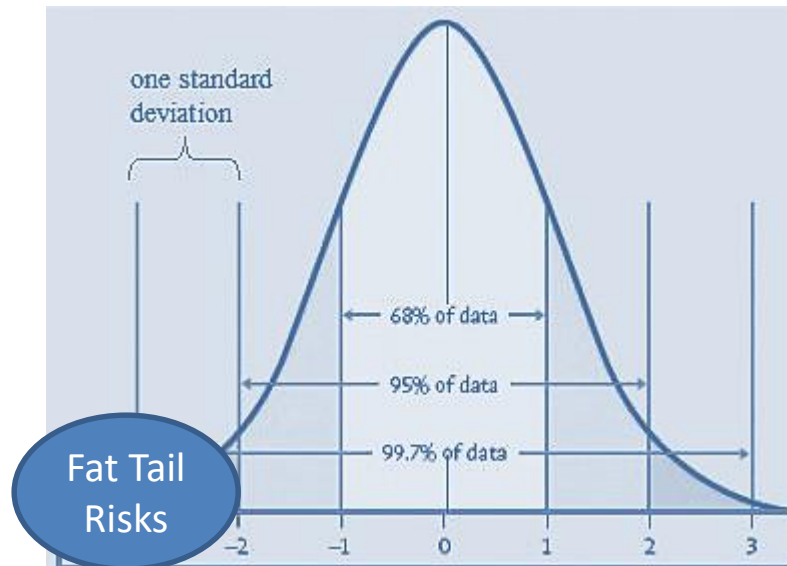


Standard Deviation



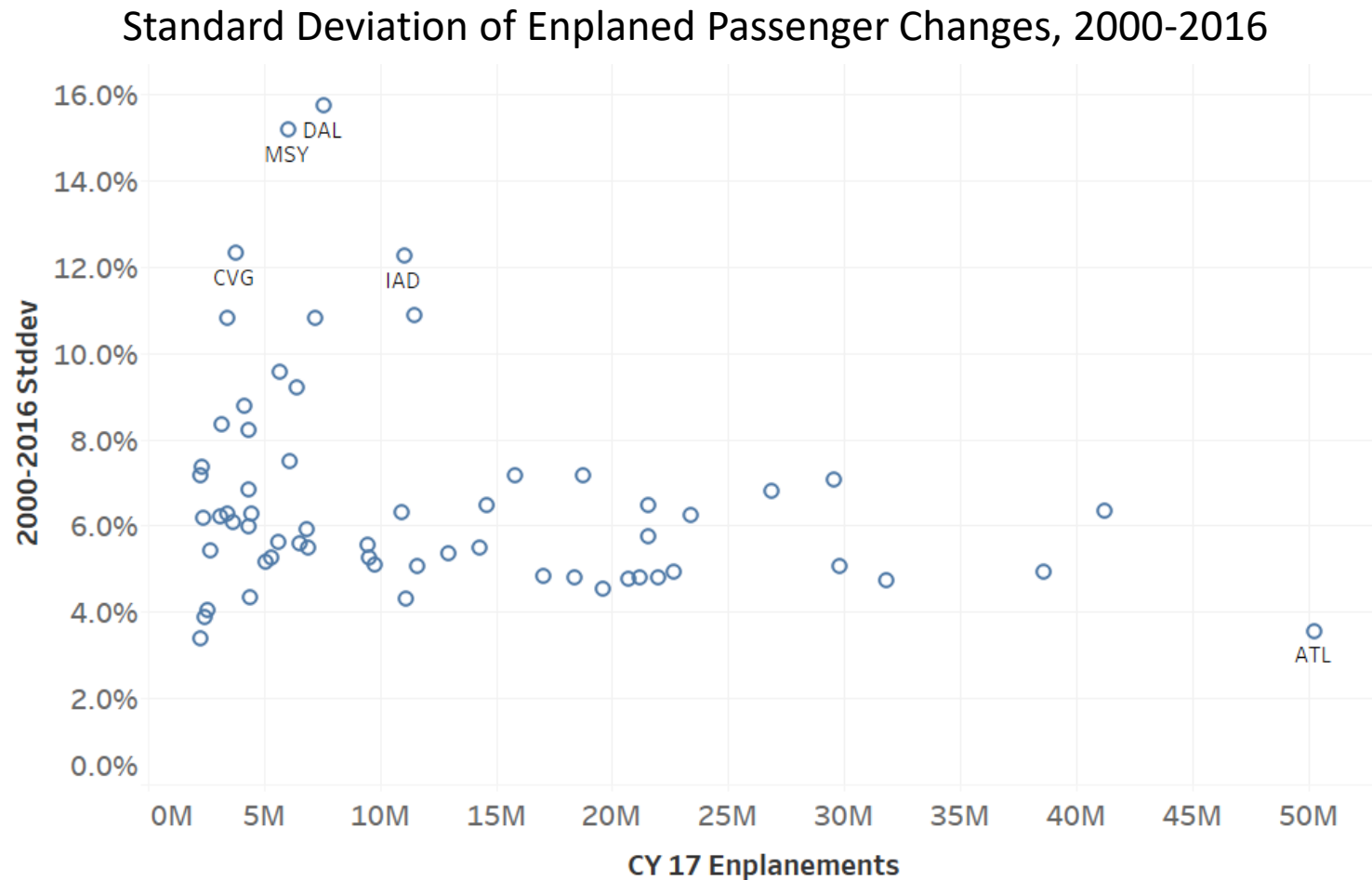
- For a normal distribution, 95% of potential results will fall within 2 times standard deviation.
- When measuring through FFY 2016, standard deviation for U.S. enplaned passenger changes was generally near 4%, with a mean of 1.3%.
- This implies a 95% probability for annual traffic changes to be between 9.9% and -7.4%.

Fat tail risks, a greater likelihood of extreme downside events, must be managed.



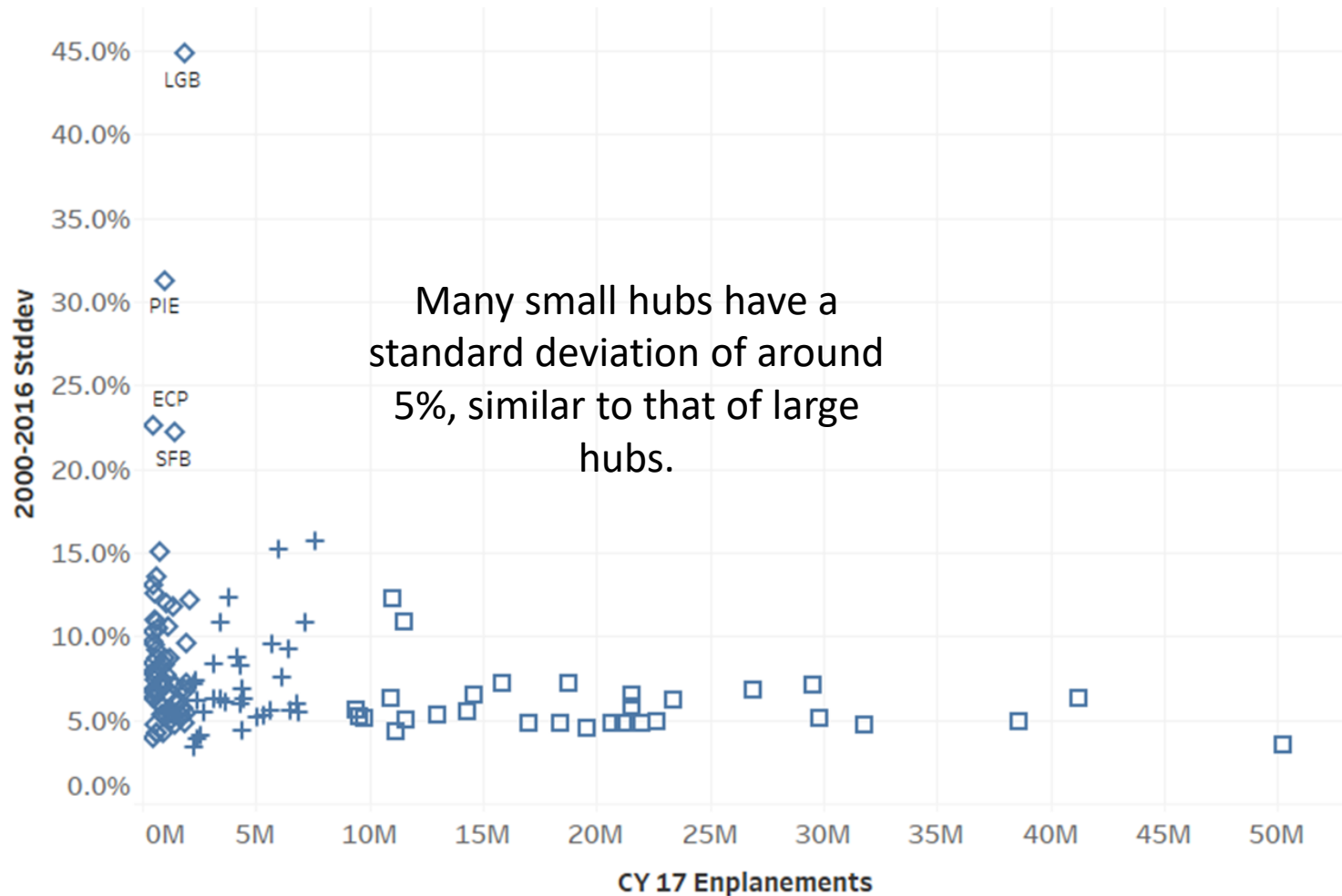
- The downside must be managed, and the upside will take care of itself.
- Traditional firms use hedging to eliminate fat tail risks, such as insurance and other hedging vehicles.
- For airport operators with compensatory ratemakings and a low safety margin:
 - Monthly monitoring and testing are recommended.
 - The ability to add any amount of cash as Revenues under the bond document can be a life saver.

Larger airports tend to have lower volatility, while changes at medium hubs were driven by specific events.



Source: 2000-2016 standard deviation calculated using FAA 2017 TAF. CY 2017 enplaned passenger – FAA passenger boarding data.

Small hubs do not necessarily have higher standard deviation.

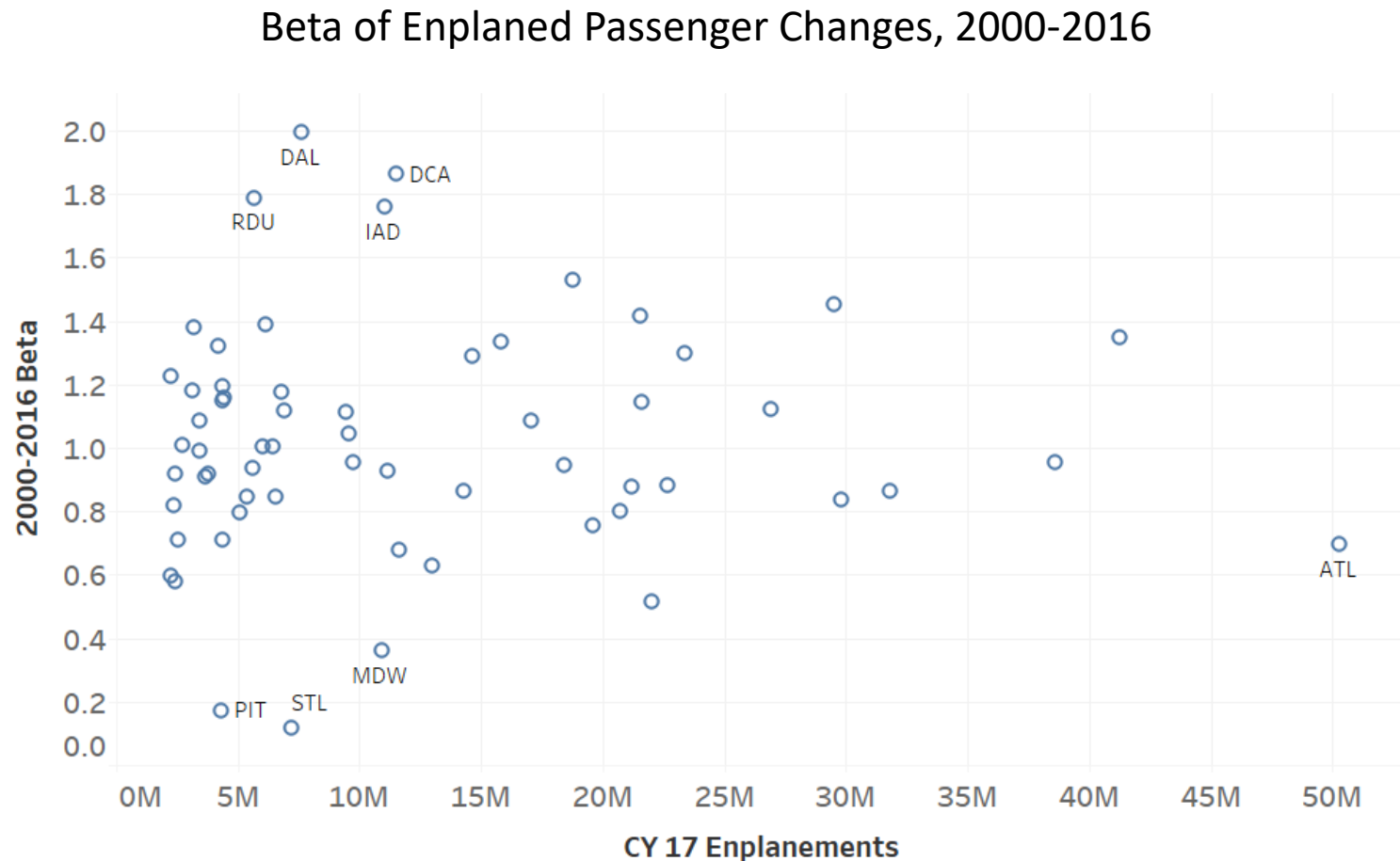


Source: 2000-2016 standard deviation calculated using FAA 2017 TAF. CY 2017 enplaned passenger – FAA passenger boarding data.

Beta measures correlation between an individual airport and the U.S. as a whole, using historical data.

- Mathematically, beta is calculated as covariance with changes in U.S. enplaned passengers, divided by system volatility.
- A beta of 1 implies that the airport has historically tracked the volatility of U.S. enplaned passengers and is moving in the same direction, while a beta higher than 1 implies higher volatility.
- A lower beta implies either low correlation or lower volatility
- Similar to standard deviation, beta changes depending on the historical time period selected.

Airports with high beta tend to see greater volatilities than the U.S. average.



Source: 2000-2016 beta calculated using FAA 2017 TAF. CY 2017 enplaned passenger – FAA passenger boarding data.

Conclusions and Additional Thoughts

Financial performance of the airport industry has improved over time, but the performance of individual airports varies.

- The average CPE level in constant dollars has not increased in recent years.
- With O&M increasing at 4% to 5%, and debt service driven by capital needs, U.S. airports must develop additional nonairline revenues or increase cost recovery from airlines.
- Traffic and inflation are two key drivers of revenues and expenses, but are largely outside management control.
- Understanding traffic volatility is the first step in the management of traffic risks.

Downside risks remain the focus, while upside potential will take care of itself.

- A potential economic downturn may reduce U.S. enplaned passengers.
 - For each airport, the impact of an economic downturn varies. Some airports may see much lower levels of enplaned passengers.
- Disruptive business models and technologies have emerged, affecting the industry's ability to generate nonairline revenues.
 - In addition to TNCs, Turo and blockchain-powered peer-to-peer rental car or parking platforms are threats.
 - Opportunities to meaningfully increase nonairline revenues are not apparent.
 - Properly recovering expenses or opportunity costs becomes an urgent task for the industry.
- High capital needs to accommodate incremental traffic may drive costs at a group of airports, bringing with them inflation risks, borrowing risks, and construction risks.

It is increasingly difficult to justify building parking garages.

- For most airports, building parking garages is difficult because the initial incremental cash flow may not cover the debt service.
- Facing threats from TNCs, an airport may reconsider decisions to build parking garages:
 - Is providing parking a necessity of airport operations when passengers have options for rental cars and TNCs?
 - Should parking rates be increased to reduce demand, thereby improving customer service but driving away a segment of parking passengers?
 - To a higher level, how could an airport optimize land use to achieve its priorities?

Higher terminal concession revenues come with costs.

- Increasing terminal concession revenues has become a priority of airport operators, but this effort may come with high financial costs.
- For compensatory airports, this cost is obvious – the airport recovers less from airlines because of the space that concessionaires occupy.
 - For a 10,000 in-terminal restaurant with an average terminal rental rate of \$200, an airport must see \$20M+ annual gross sales to justify the space.
 - Is there an optimal point at which to balance customer service and financial output?
 - Can the value of higher customer service be quantified?

Airports with compensatory ratemaking methodologies may face higher risks.

- The financial success of such airports relies on their ability to generate nonairline revenues that cover terminal deficit.
- While parking, rental car, and other concession revenues are threatened by TNCs and other trends, the long-term viability of compensatory ratemaking may be endangered.
- A higher level of risk management is prudent.
 - Building up cash amortization to weather the economic downturn
 - Shortening the airline agreement term, if any, to avoid long-term risks
 - Analyzing cost allocation to properly recover from all tenants and users
 - Maintaining flexibility in financial operations and financial framework

Thank you!

For questions and comments, please email
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