



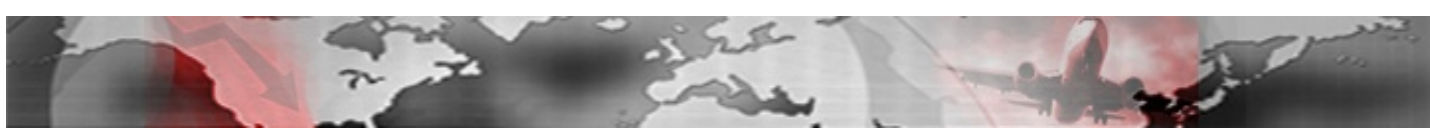
Massachusetts
Institute of
Technology



Prospects For Demand And Airline Recovery

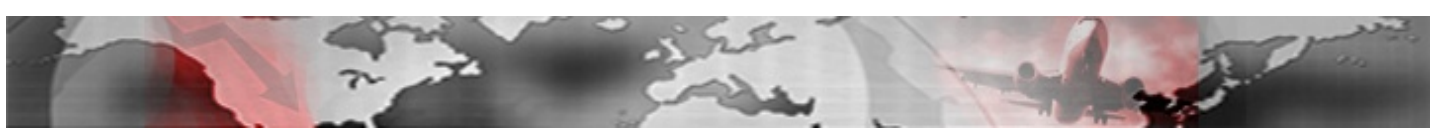
William Swelbar

November 2020



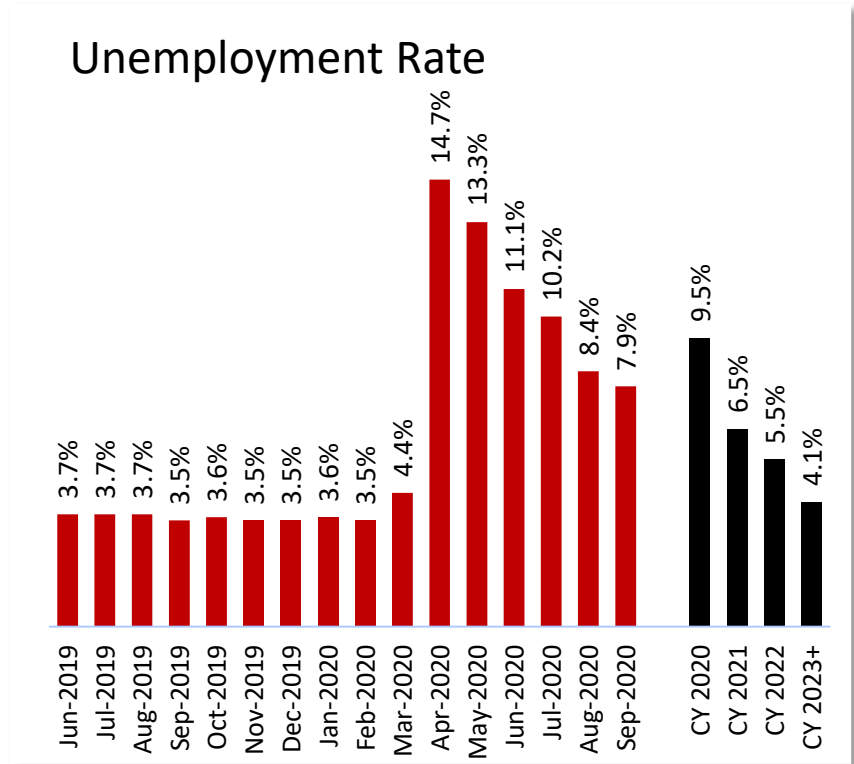
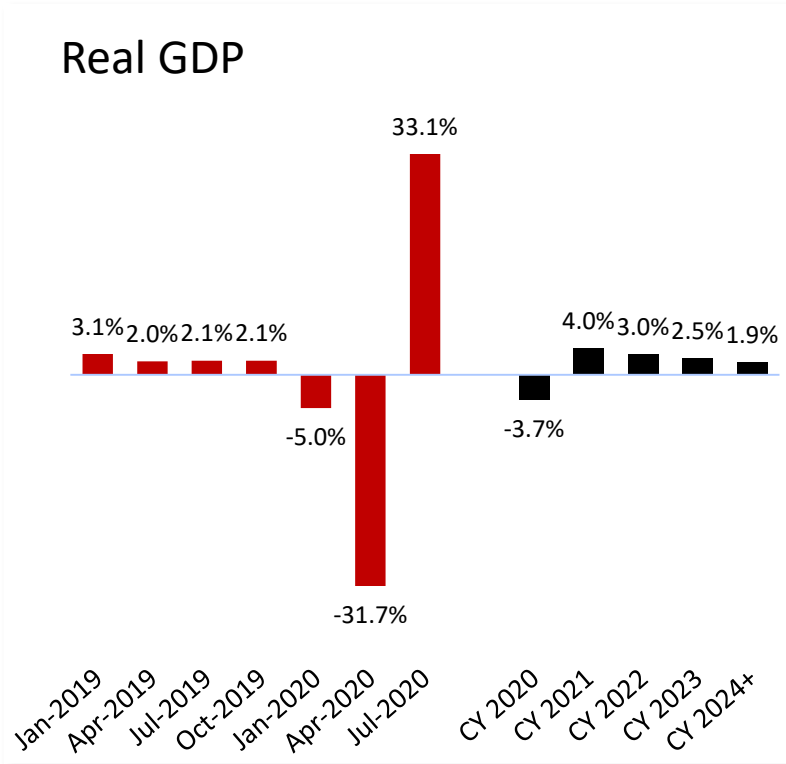
Altered Thinking

- In Europe and in Asia, as well as here in the U.S. second/third waves of COVID-19 are appearing. This work assumes the same and influences our initial forecast of a slower recovery trajectory.
- The use of macroeconomic inputs combines the 9/11 shock and the longer recovery timeline of the Great Recession.
- Capacity added back into the system will lead demand for most carriers.
 - The focus for all carriers, but particularly for the network carriers will first be on building a “cash positive” network – then worry about profitability.
- Airline hubs will be smaller as fleets will be smaller, as turn times increase due to cabin cleaning between flights (Southwest now reducing turn times) and longer boarding experiences can be expected. Thus, airport assets will not achieve pre-pandemic utilization.
 - The “Hassle Factor” again presents itself.
 - As a result of smaller hubs, connectivity will decrease impacting smaller markets first.
 - Not all hubs will come back online immediately due to geographic imbalances caused by the pervasiveness of COVID-19. Hubs require some geographic balance to be most efficient.

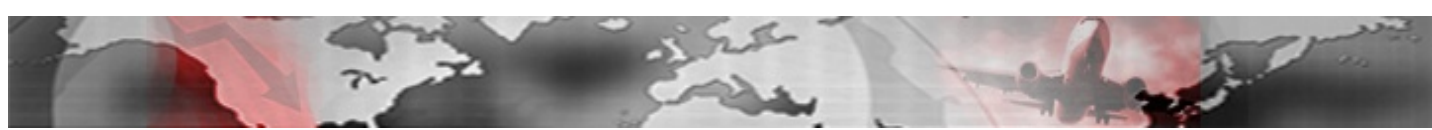


PRIMARY INPUTS: Real GDP and the Unemployment Rate

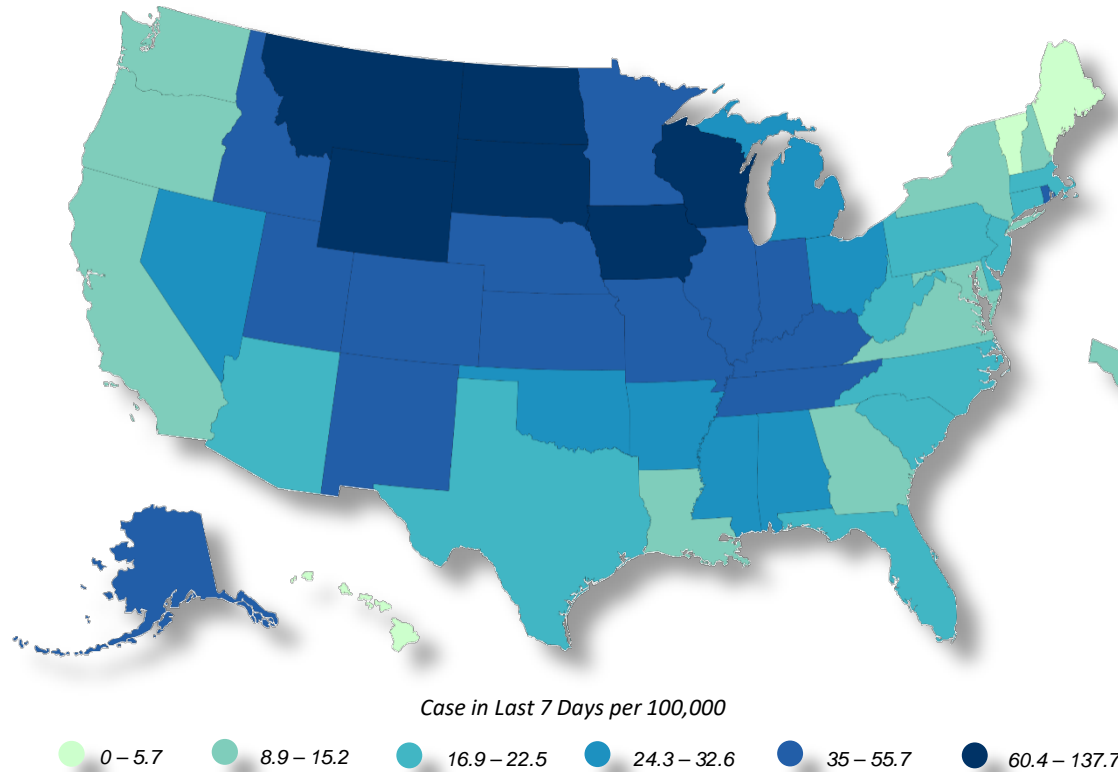
SECONDARY INPUTS: Confidence, Consumption, Manufacturing and Retail Sales



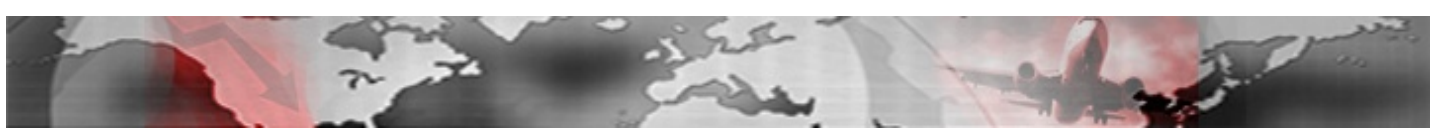
Note: Federal Reserve Bank of St. Louis. Forecast: Federal Reserve.



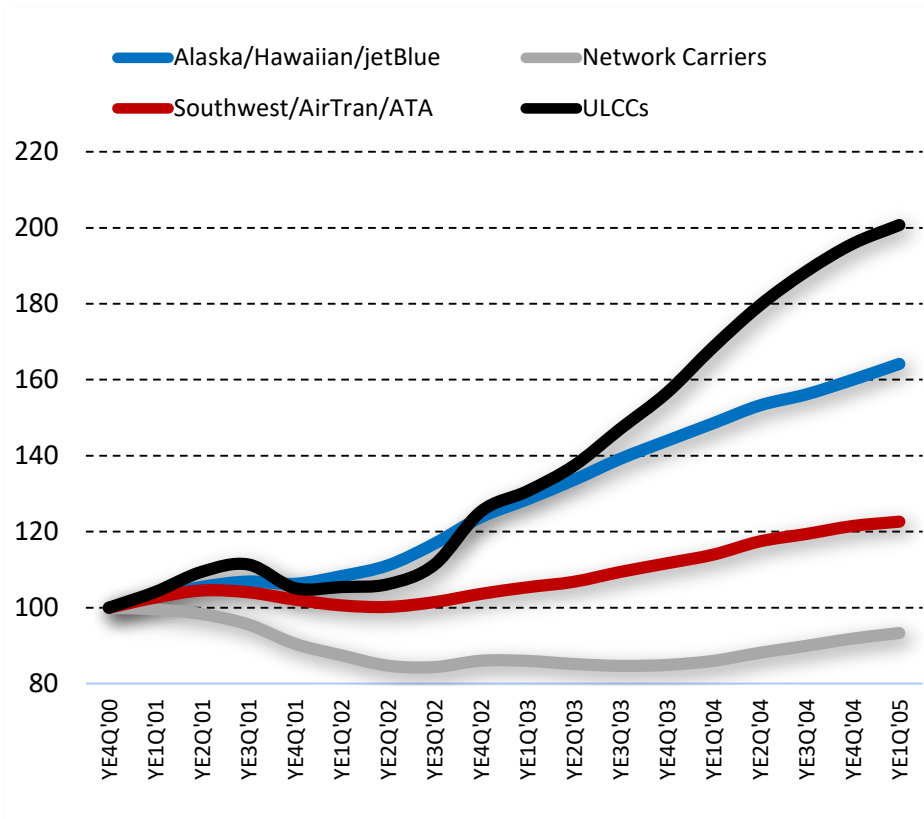
The Recovery Will Be Uneven – All Geographies Are Not The Same And Will Impact Hub Redevelopment



Source: CDC. Reported COVID-19 Cases by State as of November 2, 2020

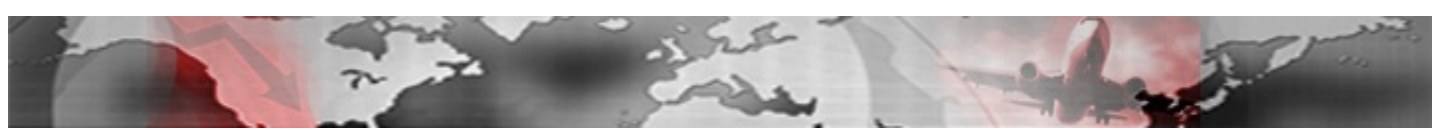


9/11 Recession: How Traffic Recovered By Carrier Type

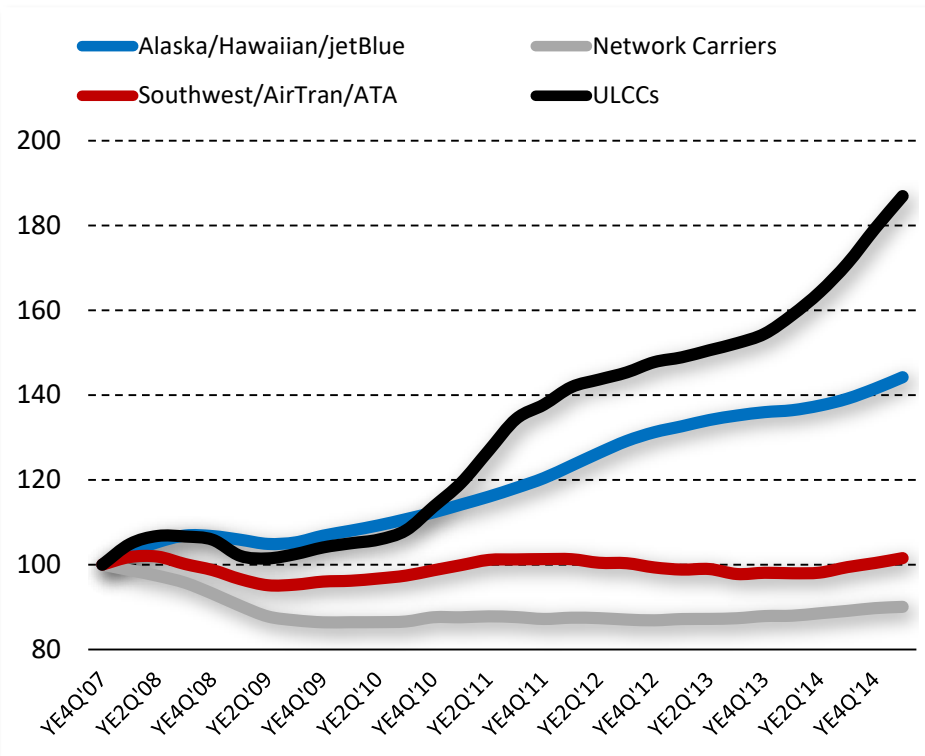


Note: Network Carriers include Delta/Northwest, American/US Airways/America West/TWA, and United/Continental; ULCCs include Frontier, Spirit, and Allegiant.

- **Network Carriers:** The network carriers were the group that was hobbled the most by 9/11. Not only were domestic markets impacted, but international markets were as well. Weak balance sheets and high cost structures were prevalent.
- **Southwest:** Southwest took full advantage of the network carrier's weakness and grew aggressively. Whereas transcon markets were critical to the network carriers, Southwest and others added significant new flying in those markets.
- **Hybrids:** Much of the growth can be attributed to Alaska and jetBlue. jetBlue was an upstart at the time and Alaska was in the early stages of increasing the scope of its Seattle hub and building presence in the California Corridor.
- **ULCCs:** The ULCCs were also in their infancy and took full advantage of the environment to grow aggressively.

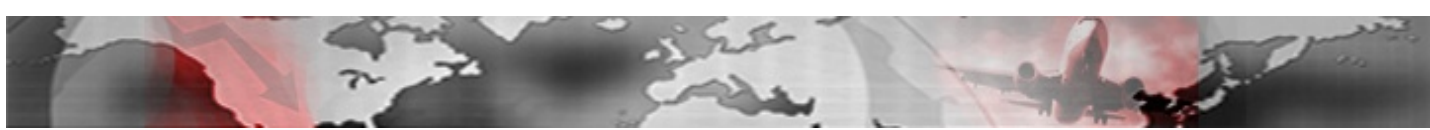


Great Recession: How Traffic Recovered By Carrier Type

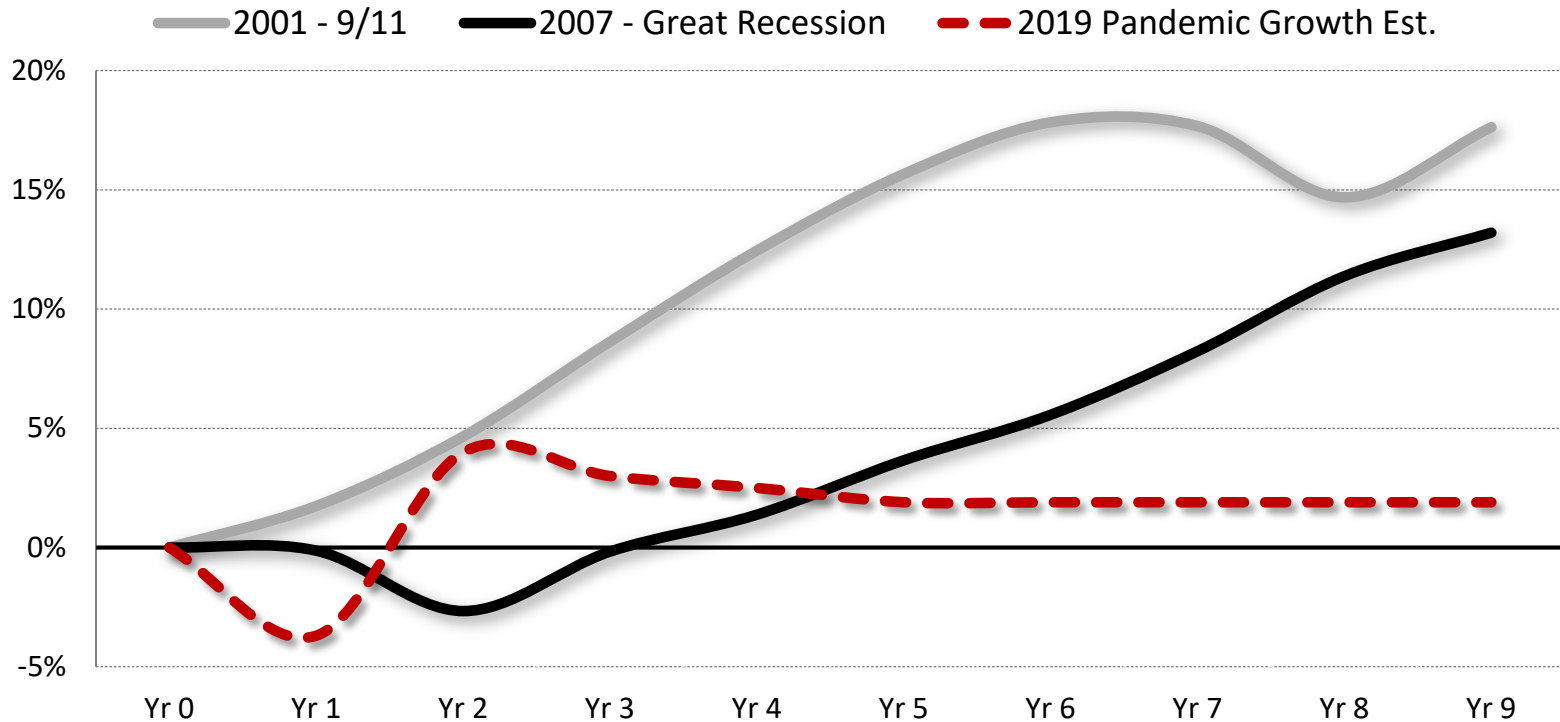


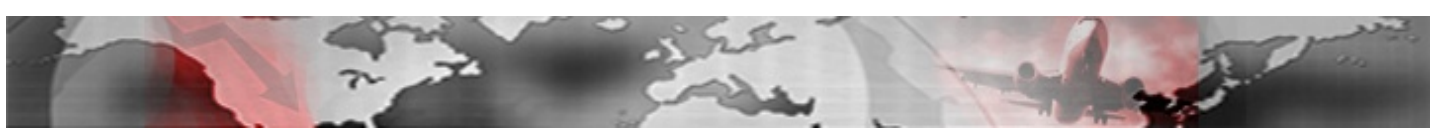
Note: Network Carriers include Delta/Northwest, American/US Airways/America West/TWA, and United/Continental; ULCCs include Frontier, Spirit, and Allegiant.

- **Network Carriers:** Two significant factors caused the network carriers to grow slowly following the Great Recession: 1) the group was growing their international operations at the expense of domestic service; and 2) Capacity Discipline became the strategy between 2010 – 2014 whereby the group grew capacity at rates less than the economy.
- **Southwest:** Unlike the 9/11 recession, Southwest also adhered to the capacity discipline strategy over the period.
- **Hybrids:** The group continued to take advantage of the Big 4 carriers and build presence in markets important to their network focus.
- **ULCCs:** Spirit and Frontier continued to grow aggressively at the expense of the Big 4. Secondary leisure destinations were being established by Allegiant.



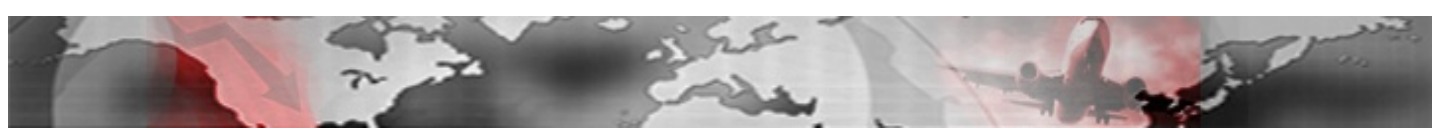
Historic Event Percent Changes in U.S. Real GDP: 9/11, The Great Recession and the Pandemic From Point Zero



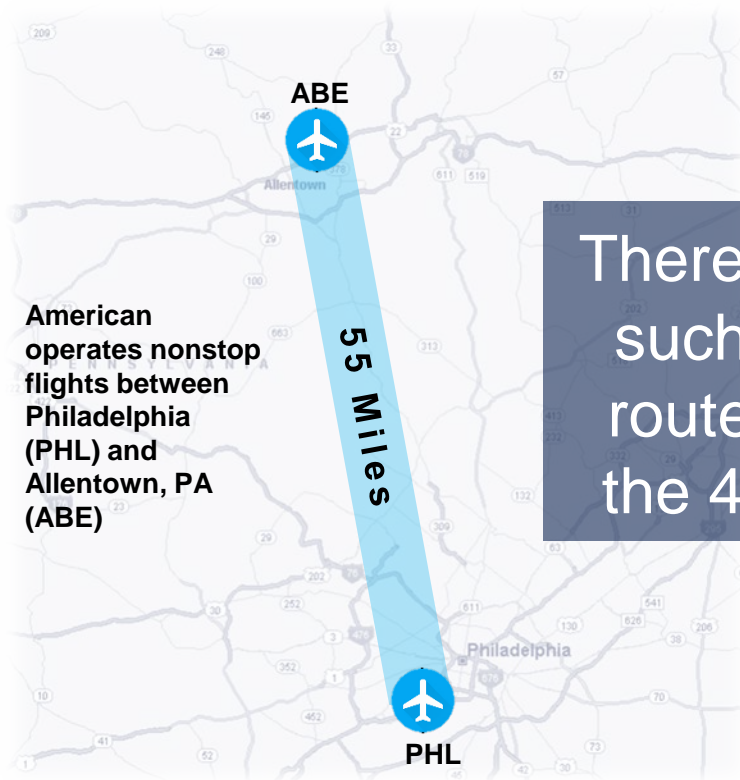


The Pandemic Will Potentially Cause Airlines To Make Decisions About Operating Shorter-Haul Flights...

**... Measuring The Impact If Carriers Stop Operating
Shorter-haul Flights If A Small Community Airport Is 180
Miles Or Less From A Large Or Medium Hub Airport**

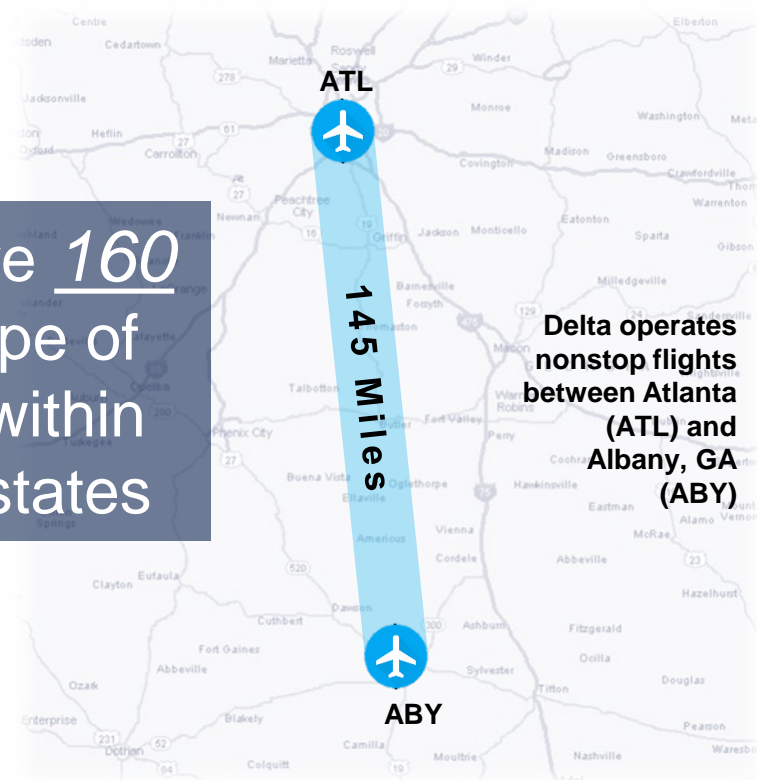


Shorter-Haul Route Examples: Examples of Routes That Could Be Considered For Elimination

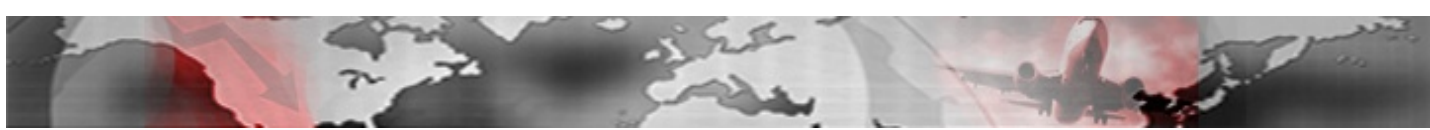


American operates nonstop flights between Philadelphia (PHL) and Allentown, PA (ABE)

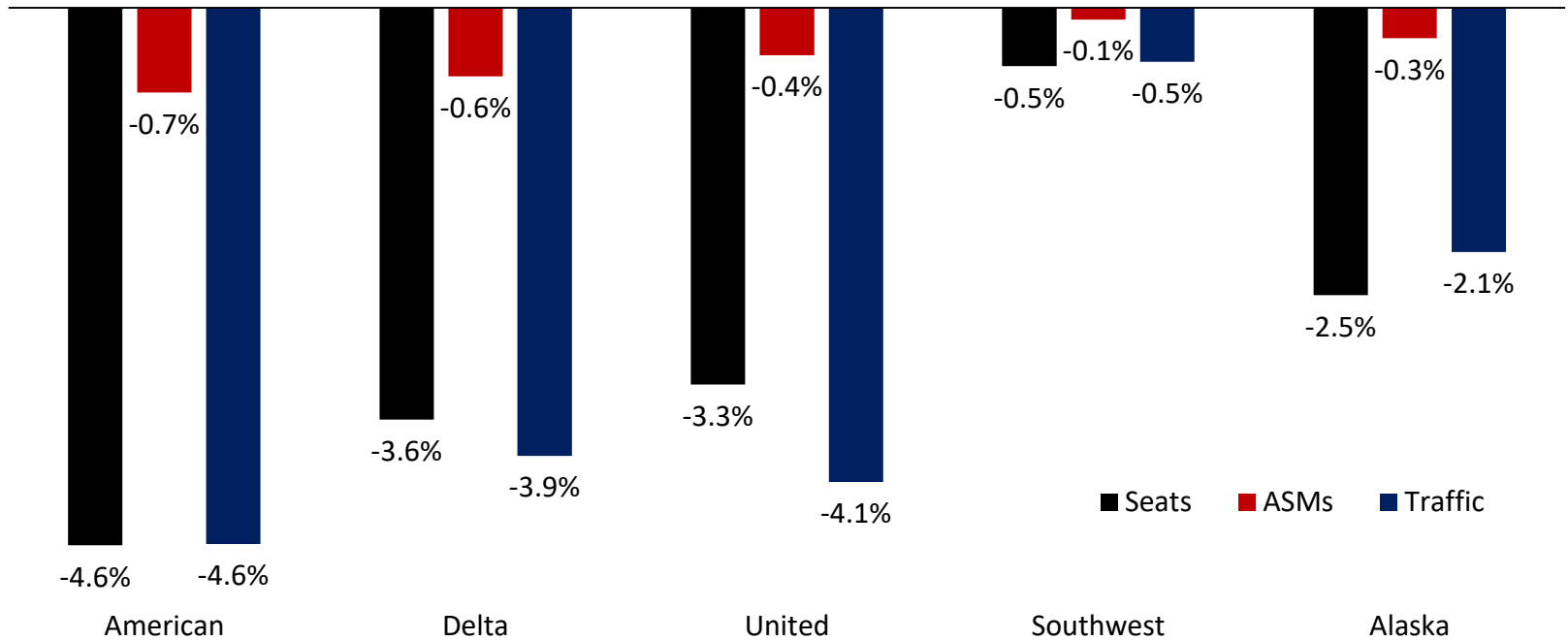
There are 160 such type of routes within the 48-states



Delta operates nonstop flights between Atlanta (ATL) and Albany, GA (ABY)



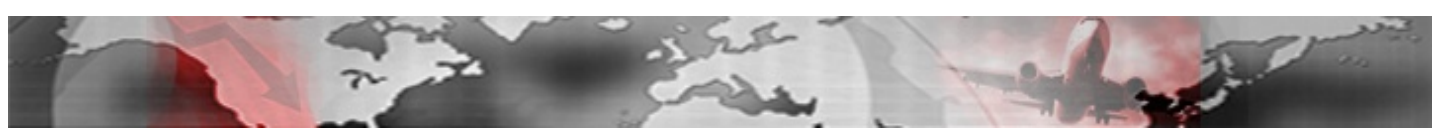
Impact on Carrier's Domestic Operations and Traffic* Should Short-Haul Flying as Defined Be Considered Redundant



* Include Domestic Portion of International Journey (DPIJ) Traffic.

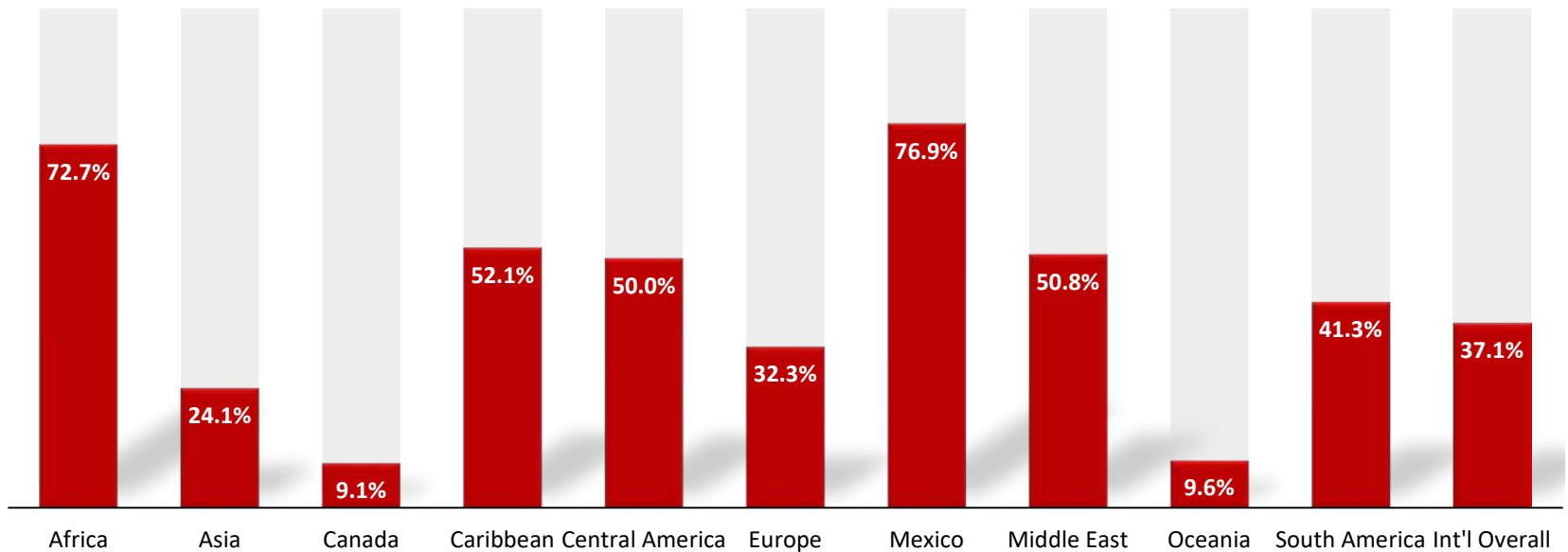


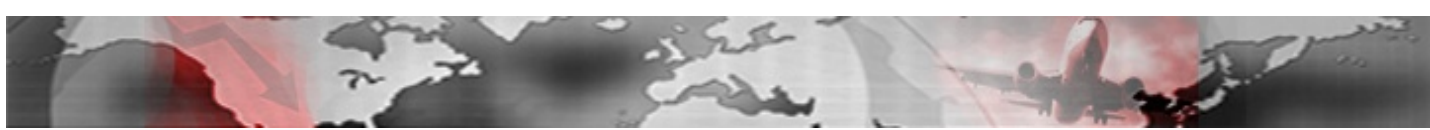
The Recovery of U.S. - International Travel



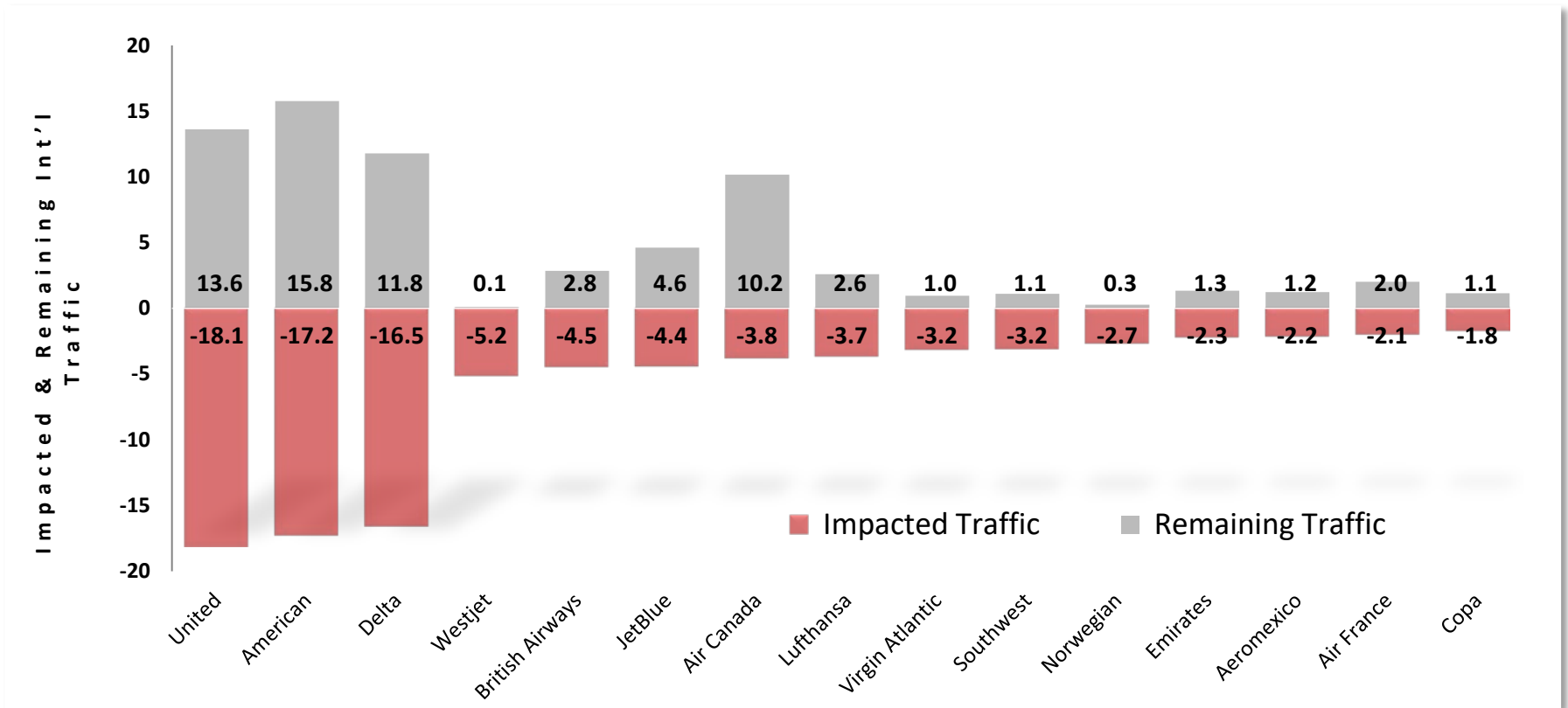
Carriers Start To Add More International Flights Back in the System

- 2020 International Departures As % of 2019 Based on
November Schedules at U.S. Gateways

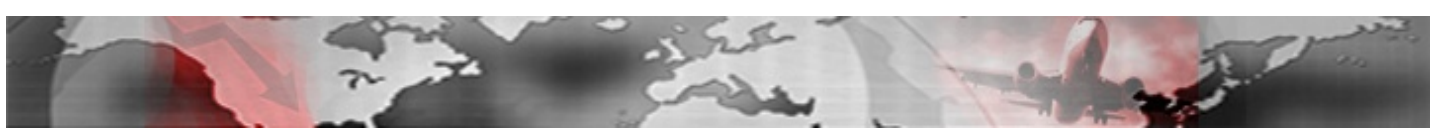




Top 15 Carriers Ranked by Overall International Traffic Impact at U.S. Gateway Airports *- Annualized in Millions*

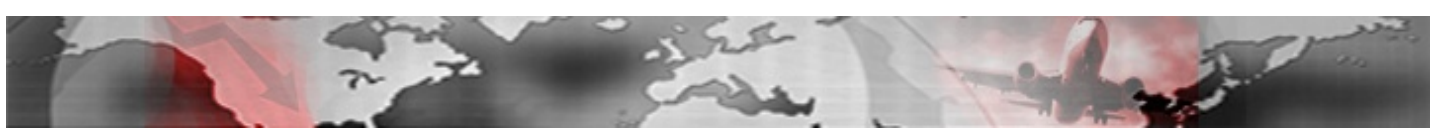


Reflects actual traffic for January - April 2020. May – December 2020 estimated based on November 2020 v. November 2019 published schedules.



A Prolonged Traffic/Revenue Drought Will Likely Not Sustain The Operations Of All Airlines Operating Today

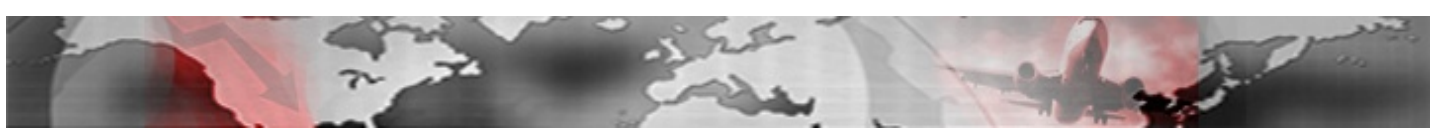
The Virus, Macroeconomy, Consumer Behaviors and Demand Will Profoundly Influence A System Re-Draw



Our View On the Trajectory of the Recovery

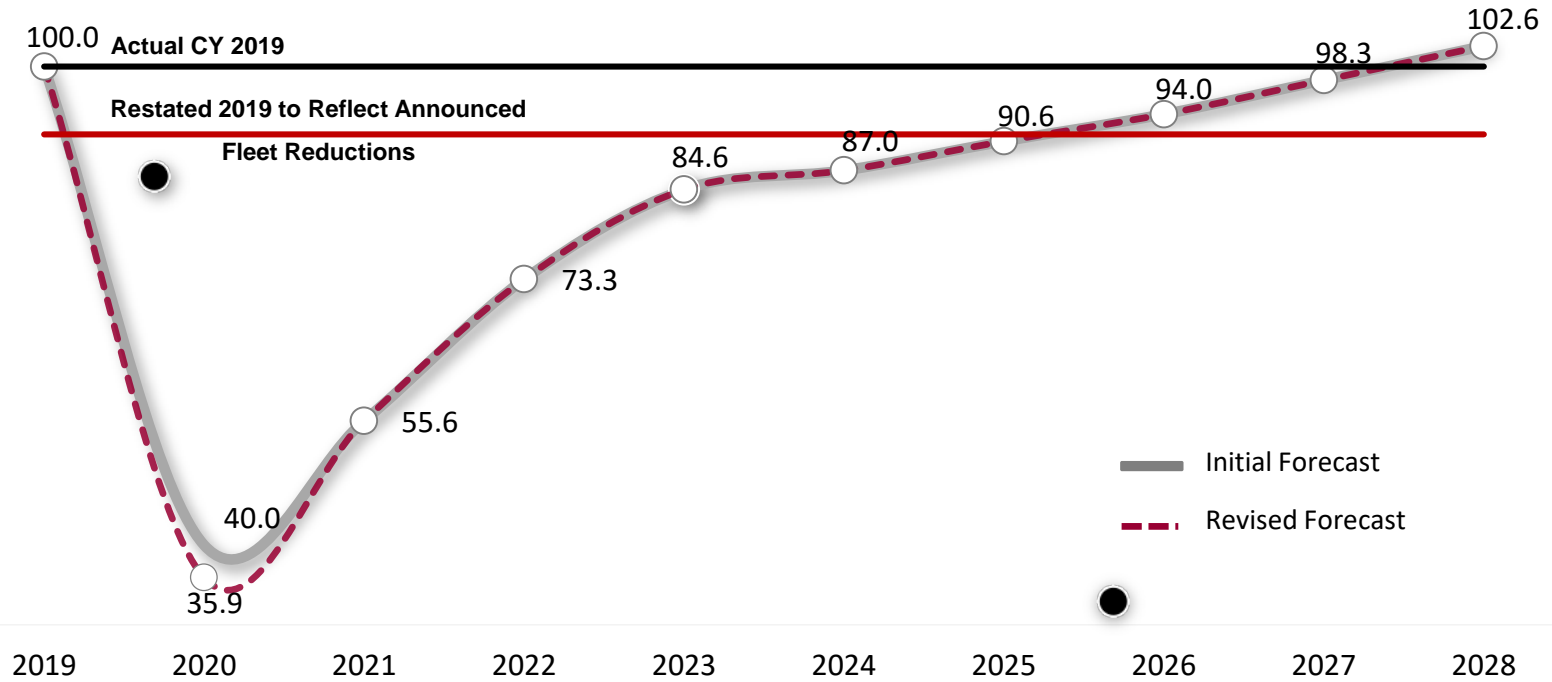
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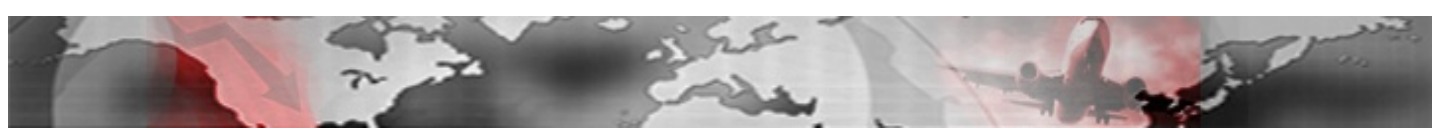
- We now forecast that 2020 domestic traffic will be less than our initial forecast of 40% of the 2019 level. The economy, consumer confidence in the system and a return of international travel will all be catalysts for the domestic industry to show meaningful growth in the immediate term.
- The square root symbol ($\sqrt{\quad}$), not a letter in the alphabet (V, U, L, W), defines the shape of our initial, and current, forecast of the recovery in U.S. domestic traffic. Note: our forecast has not changed since April 2020.
 - Going forward, given the fleets that are announced as being permanently parked, the traffic generating capacity in 2020 is 8.5% less than in 2019. If only the network carriers were considered, they will have 17% less traffic generating capacity than in 2019.
- The influence of international traffic supporting domestic network cannot be overstated.
 - Less than 40% of international service is being flown in November 2020 (page 133). In 2019, international traffic amounted to 15% of passengers flying on a domestic service. Simply combining the impacts of airline decisions to discontinue fleets and the dearth of international travel, the domestic industry is structurally 18% smaller.
- There will be much discussion of a vaccine and therapeutics. However, it is the depth of damage to the economy and international travel in 2020 that drives the 2021 result for now. A vaccine for most Americans is not assumed until the second half of 2021.



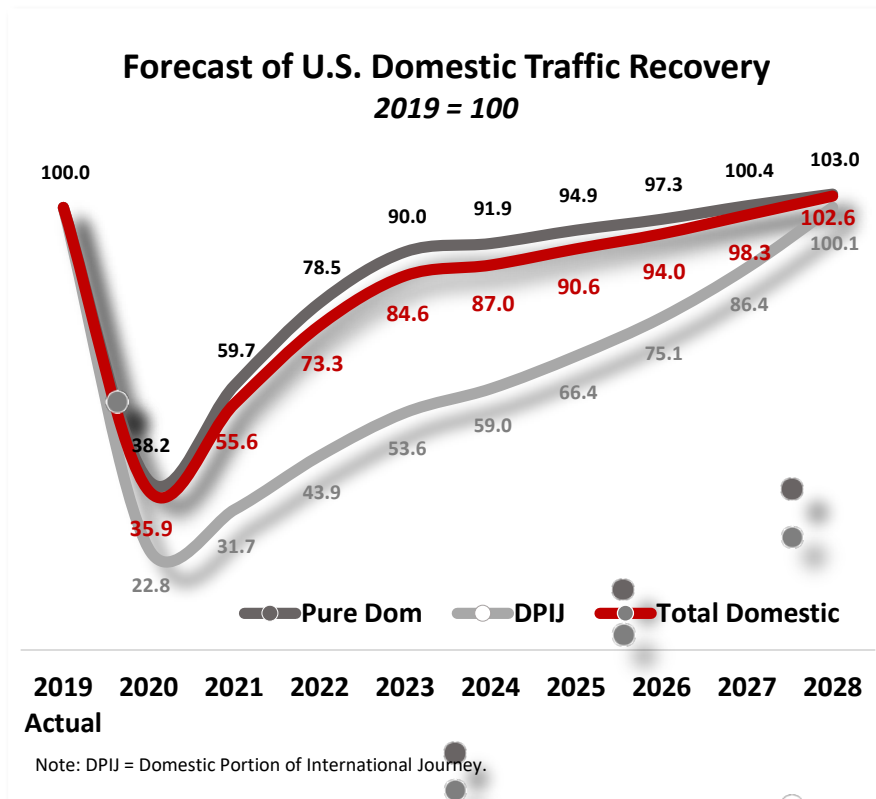
Forecast U.S. Domestic Air Traffic Recovery

2019 Actual = 100

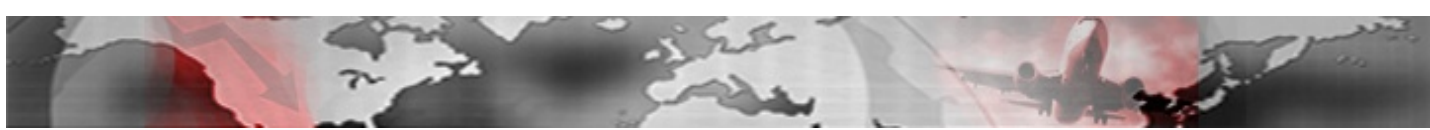




Key Assumption: Any Path To A Domestic Traffic Recovery Will Require International Travel To Return To A Semblance Of Historic Norms



- Two buckets of passengers make up passengers flying on a domestic flight. Passengers flying within the U.S. are considered pure domestic passengers. However, there are passengers connecting to an international flight traveling on a domestic flight as well.
- Passengers traveling on a domestic flight to connect to an international flight account for 15% of U.S. domestic airport throughput (enplaned and deplaned passengers).
- Two structural headwinds will slow the domestic recovery: 1) the sheer number of parked aircraft; and 2) the return of international travel.



Concluding Thoughts

- History can be a guide even if there is no historical precedent for a pandemic-induced recession. Combining the demand shock of 9/11, the length of the economic recovery from the Great Recession and the thought that the airlines will be judicious on deploying capacity until balance sheet repair has begun has been a guide.
- The interdependencies of international traffic and domestic service cannot be overstated. International passengers account for 15% of the passengers that fly on domestic flights to and from international gateways. Therefore, any significant buildout of the domestic system will require international service to return to some level of normalcy.
- While not all individual airlines will be significantly smaller, the network carriers (American, Delta and United) will be. Therefore, certain hubs will be smaller and not all hubs may return. Smaller hubs mean less connectivity. Less connectivity likely means less service to small communities.