



Airline Safety

Current airline safety and airline travel analytics
DSC640 – Data Presentation & Visualization
Executive Summary
Sanjay Jaras

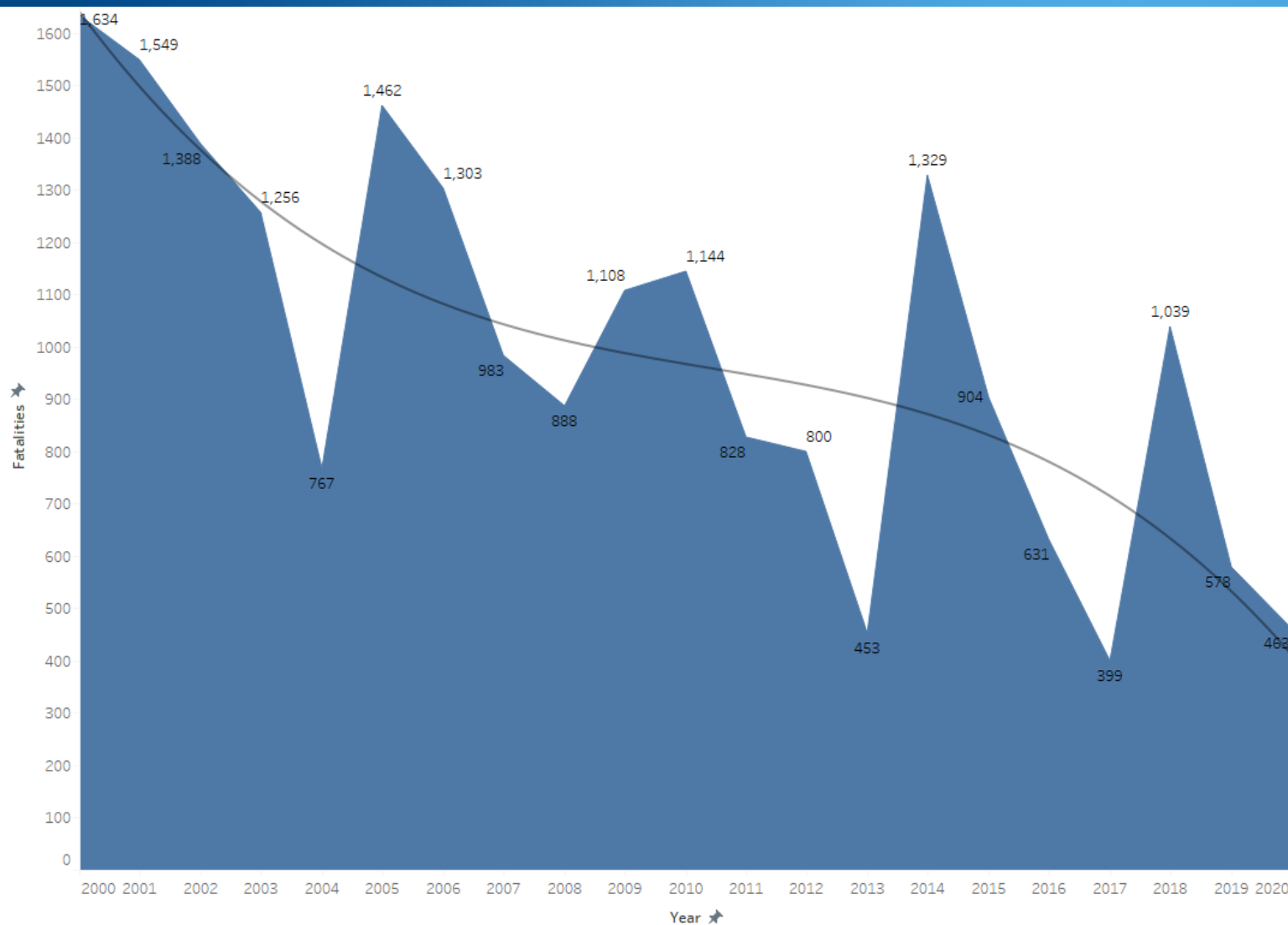


Overview

- Due to recent unfortunate airline crashes, the media has been promoting statistics stating air is no longer a safe way to travel.
- The news and media outlets have been bombarding the public with reports and figures about the trends of airline safety and that things are not looking good.
- Air travel was previously thought as the safest way to travel, especially when compared to automobiles, is now being presented as one of the most dangerous to the public.
- Based on data we tried to answer safety questions, and analytics about covid impact on profit/loss.



Air Travel Fatalities – U.S. & International Operators(2000-2020)

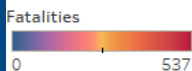
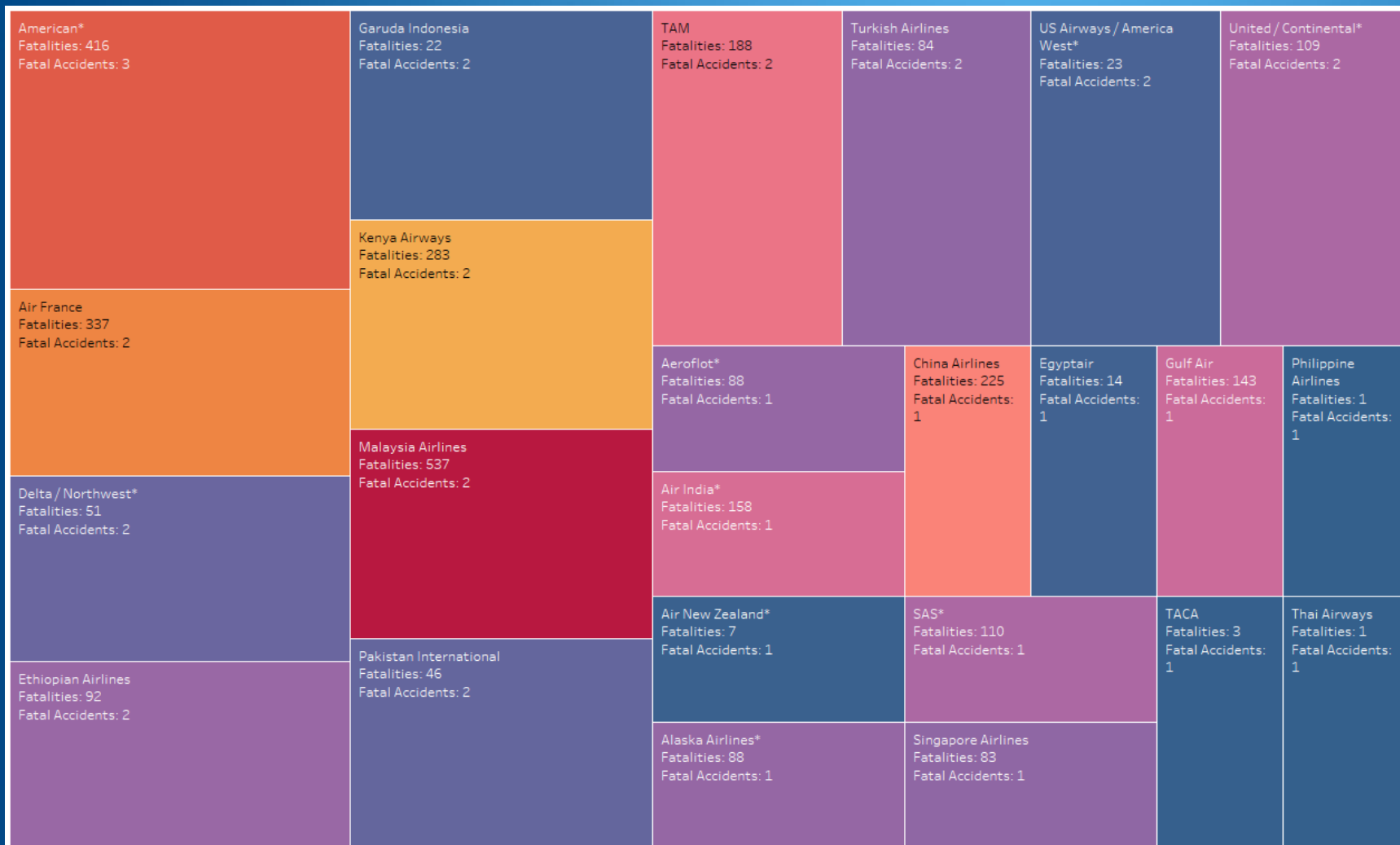


In the period 2000-2020, there are up-downs in fatalities with air travel.

However, overall it is showing a downward trend.



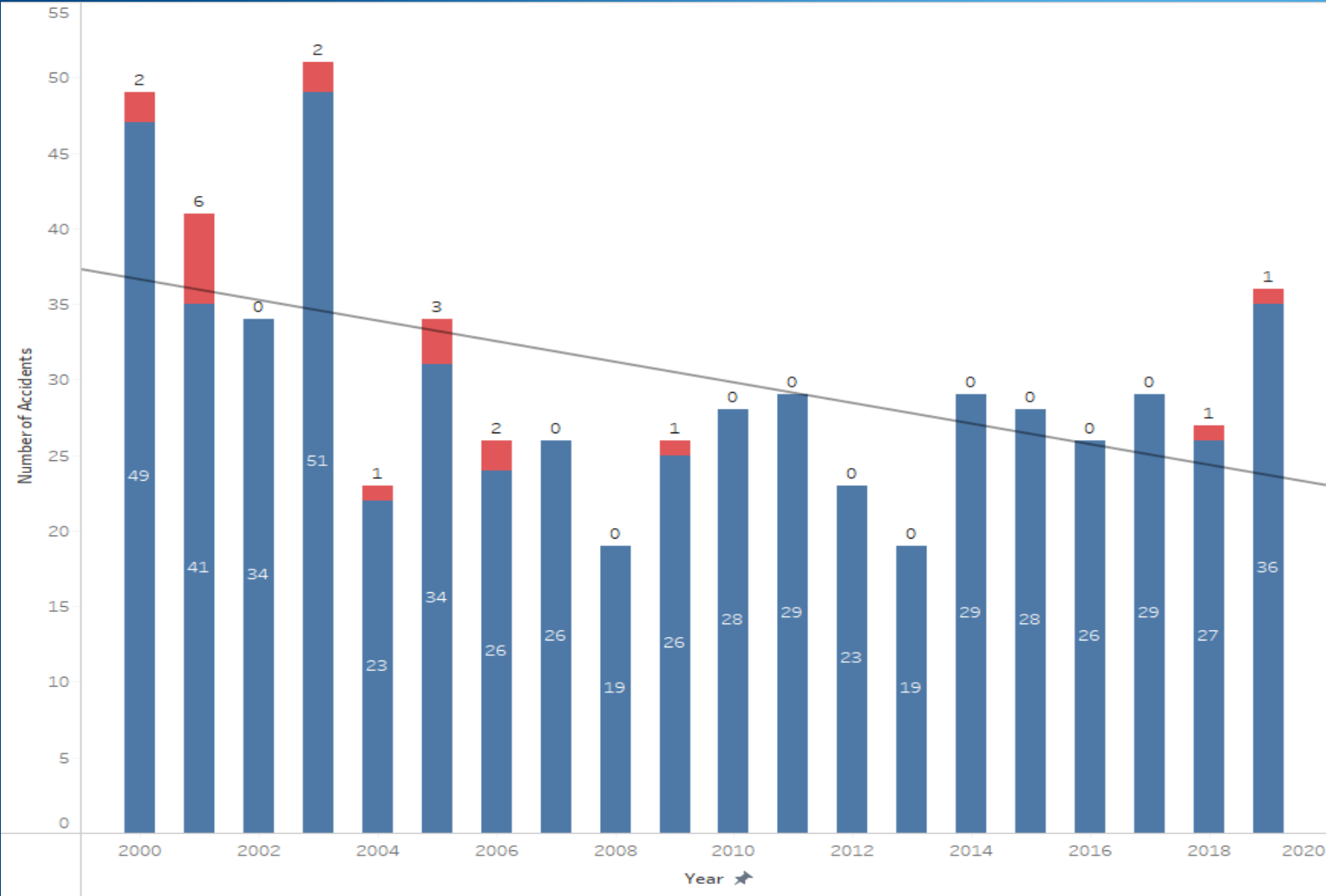
Fatalities and Fatal Accidents U.S. & International Operators (2000-2014)



Source: Aviation Safety Network



Accidents & Fatal Accidents by U.S. Operators(2000-2019)



The year 2003 has the most number of accidents 51.

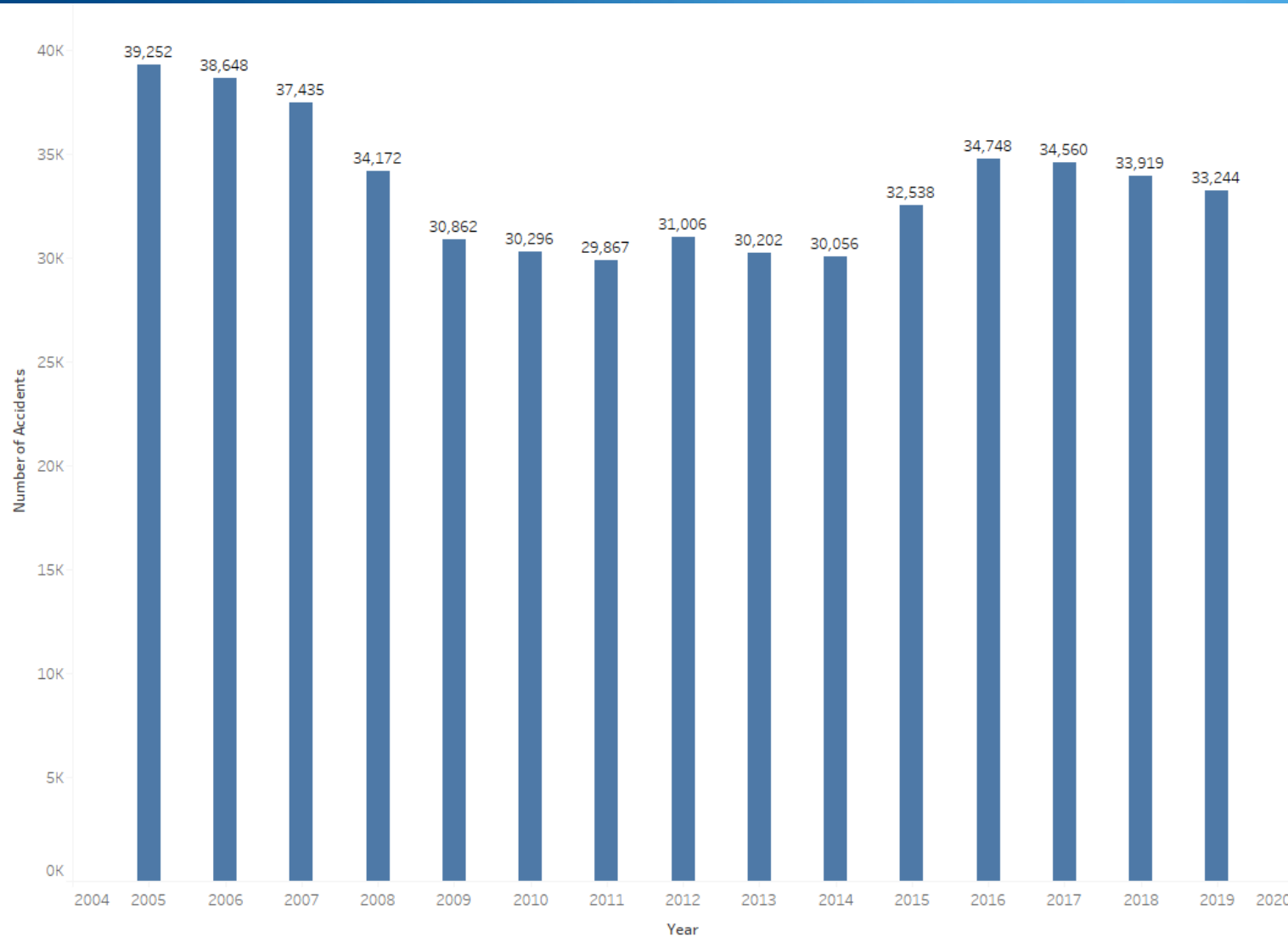
The year 2001 has more fatal accidents(6).

The year 2019 shows a slight increase in the number of accidents but the overall trend is downward

Total Accidents
Accidents: Total
Total Accidents



Fatal Road Accidents in U.S.(2005-2019)



On an average 33,387 fatal road accidents happened in U.S. in the period 2005-2019 per year.

While Air-travel has only 0.95 fatal accidents per year with U.S. operators.

Source: Airlines for America



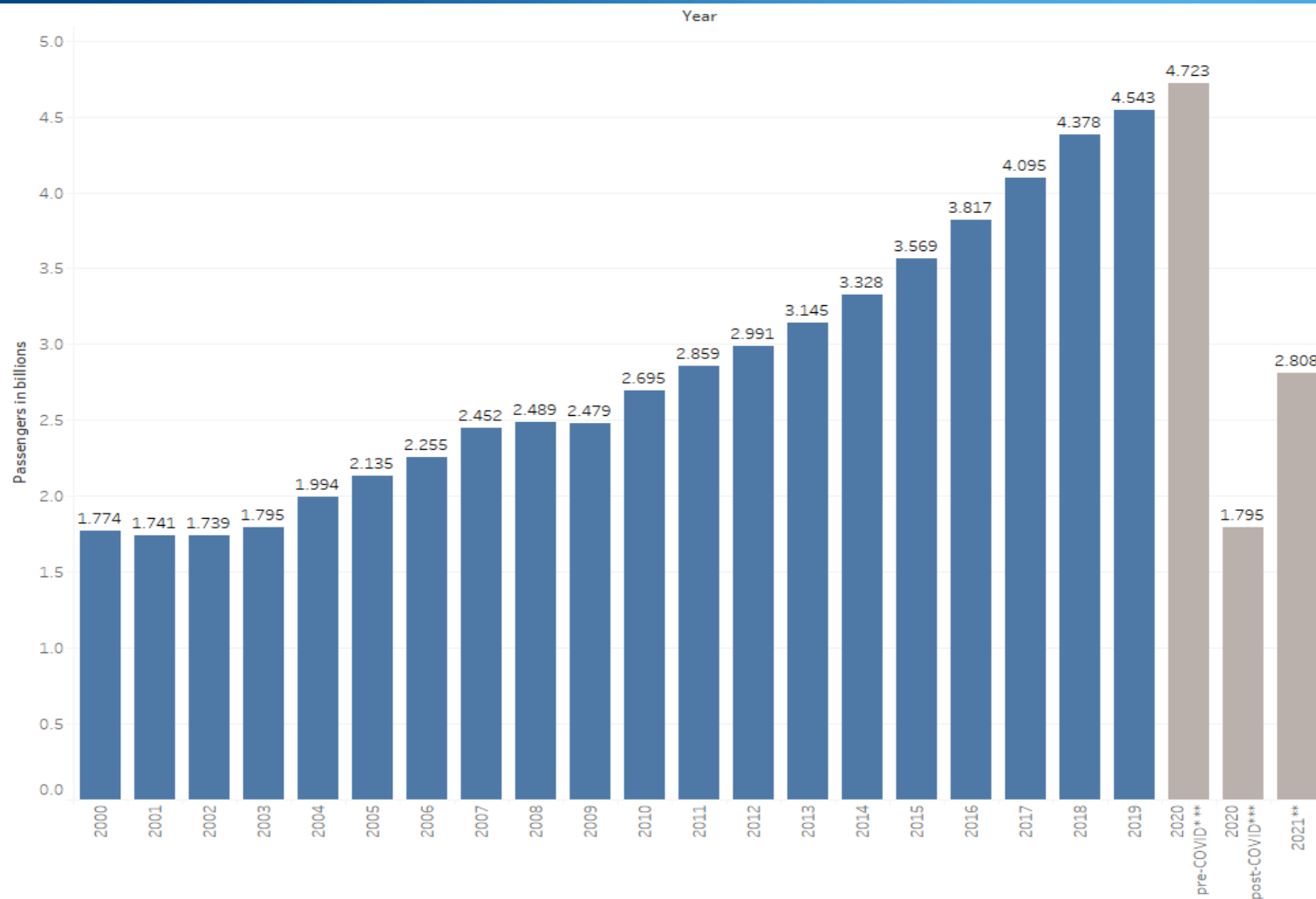
Air travel is still a reliable travel medium involved in very few fatalities compared to road travel and. The trust is also shown with the increasing number of passengers.

Passengers and Profit/Loss Analysis

- 4.543 billion passengers used air travel in the year 2019.
- The number of passengers increased from 1.77 billion to 4.72 billion with a growth of 166% since the year 2000.
- U.S. operators' revenue increased to \$247.6 billion in the year 2019 compared to \$155.1 billion in 2009.
- Before covid disaster the net profit for global operators was \$26.3 billion in the year 2019.
- There is a loss of \$89 billion due to covid crises in year the 2020.



Worldwide Air passengers(2000-2020)



The number of passengers increased from 1.77 billion to 4.723 billion with a growth of 166% since the year 2000.

Covid reduced number of passengers to 1.8 billion as opposed to scheduled 4.7 billion in the year 2020

Covid Impact

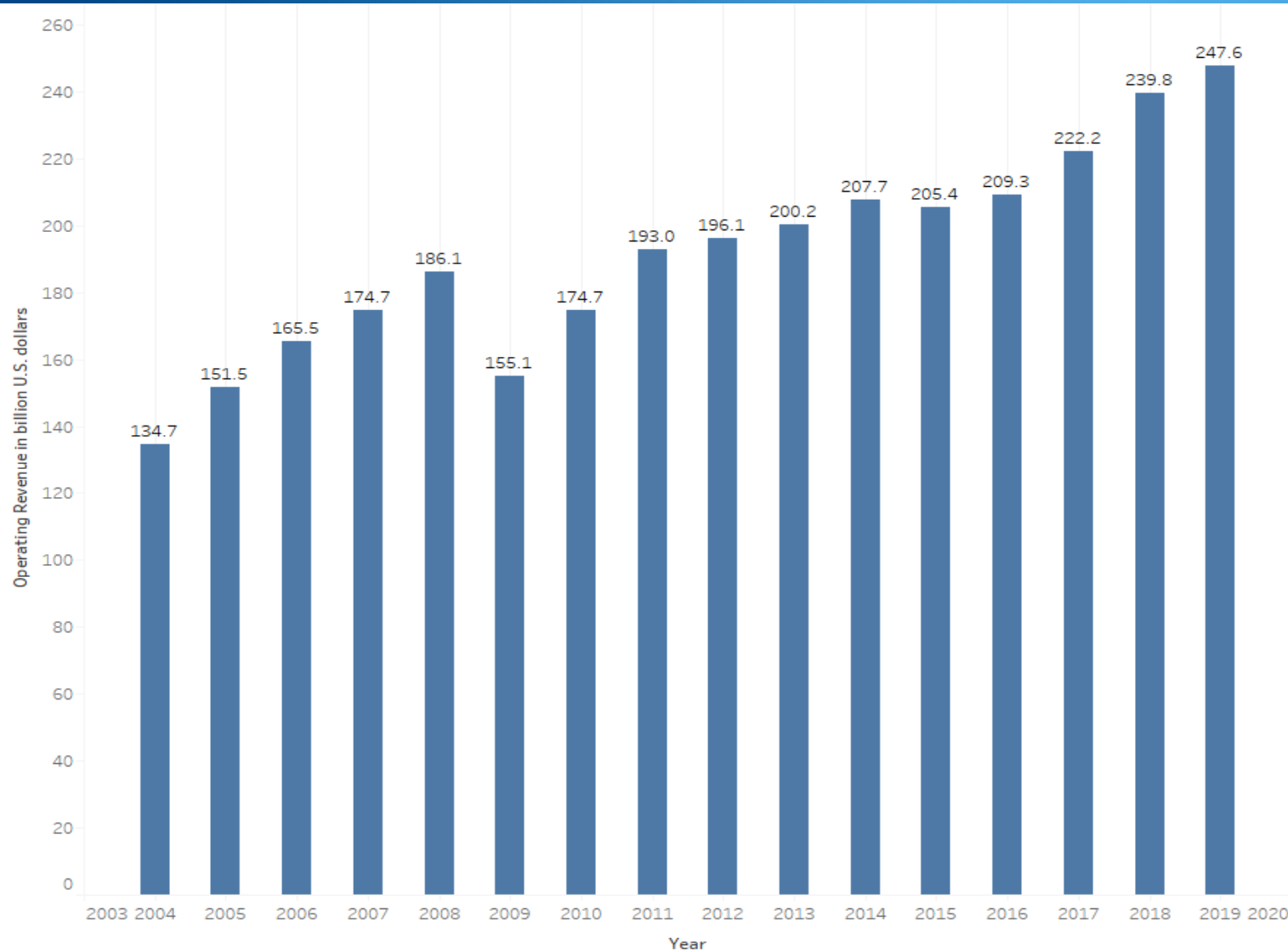
■ Covid Impact

■ Before Covid

Source: Industry Statistics



U.S. Airline operators Revenue(2004-2019)

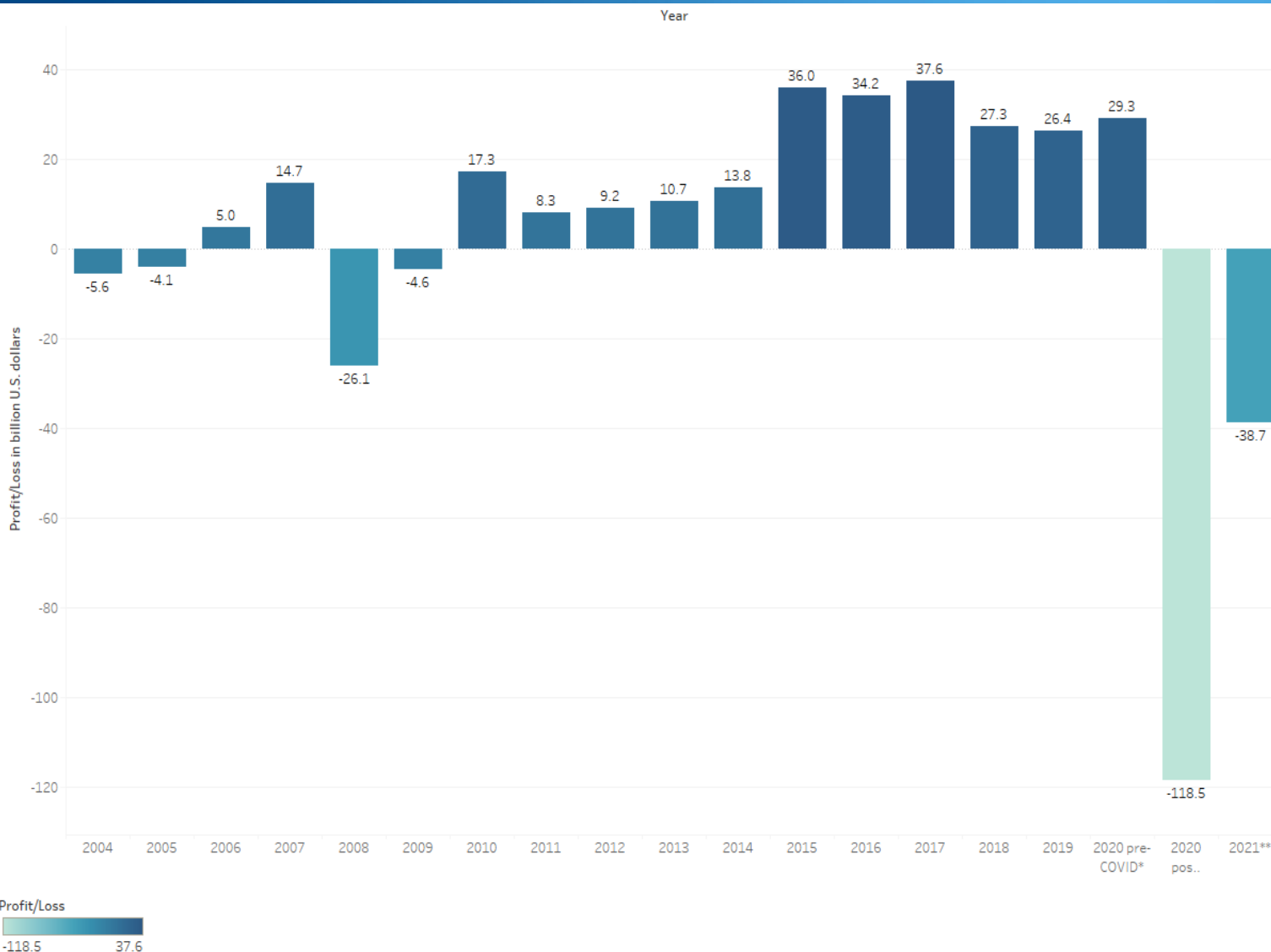


The operating revenue of U.S. operators increasing with study pace.

It was \$134 billion in the year 2004 and increased to \$247 billion in the year 2019.



Worldwide Airline Operators Profit/Loss (2004-2020)



From the year 2010 through 2019 global operators saw consistent growth and profit around \$30 billion.

In the year 2020 global airline industry saw loss of \$89 billions due to covid.

Source: Industry Statistics



Sources

- Airline Safety: <https://github.com/fivethirtyeight/data/tree/master/airline-safety>
- Aviation Safety: <https://aviation-safety.net/database/>
- Bureau of Aircraft Accident Archives: <https://www.baaa-acro.com/statistics/death-rate-per-year>
- Airline of America: <https://www.airlines.org/dataset/safety-record-of-u-s-air-carriers/#>
- Industry Statistics: <https://www.iata.org/en/iata-repository/publications/economic-reports/>
- National Highway Traffic Safety Administration Industry Statistics: <https://cdan.dot.gov/>



Thank You !