

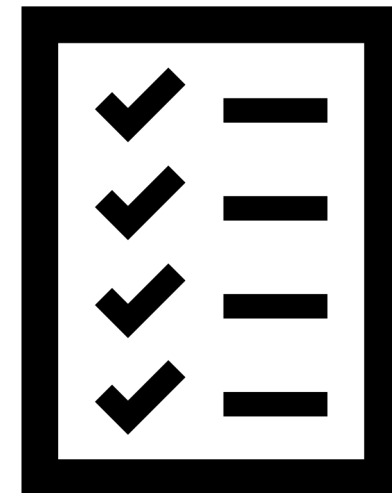
# Above the Clouds: Performance Analysis of Airline Operations

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# I. Project Introduction

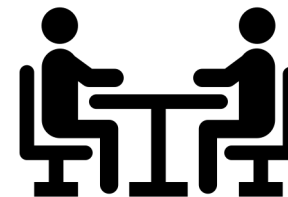
## Problem Statement

- Challenges in airline industry: Volatile fuel prices, fluctuating demand, and evolving consumer preferences.
- Intense competition: Airlines must strategically manage operational costs and revenue streams to sustain profitability.
- Making informed decisions is crucial: Assess the financial health and performance to understand industry dynamics.

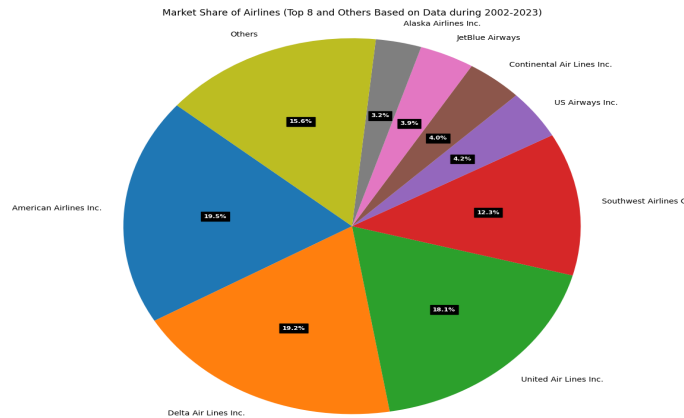


## Project Objective

- Evaluate the overall financial and revenue health of the top 4 airlines during 2002-2023.
- Investigate operating expenses to identify areas of shortness and opportunities for improvement for top 4 airlines.
- Combining big events, alliances and partnerships to generate comprehensive context analysis of top 4.



## II. Overview of Airline Industry



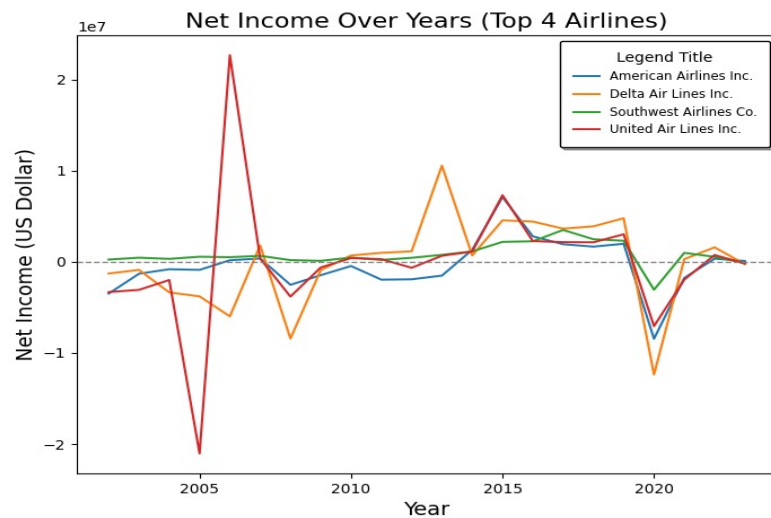
- American Airlines, Delta Air Lines, United Airlines, and Southwest Airlines are the undisputed leaders in the US market. The significant presence of other players with 30% market share include **Regional Airlines, Budget Airlines and Legacy Carriers**

Top 4 US Airlines Introduction

Name of Airlines	Founded Date	Founded Location	Headquarter Now	Acquisition & Merger	Alliances & Partnerships
American Airlines	1926-04-15	United States	Fort Worth, TX	1971: Acquired Trans Air Caribbean 1978: Acquired Air California 1997: Acquired Reno Air 2013: Merged with US Airways	Oneworld (13 members flying 490 M in 2019)
Delta Air Lines	1928-12-03	Macon, GA	Atlanta, GA	1987: Merged with Western Airlines 2010: Merged with Northwest Airlines	SkyTeam (19 members flying 676 M in 2019)
United Airlines	1926-04-06	Boise, ID	Chicago, IL	1961: Merged with Capital Airlines 2012: Acquired Continental Airlines	Star Alliance (26 members flying 762 M in 2019)
Southwest Airlines	1967-03-15	San Antonio, TX	Dallas, TX	1993: Acquired Morris Air 2010: Acquired AirTran Airways	None

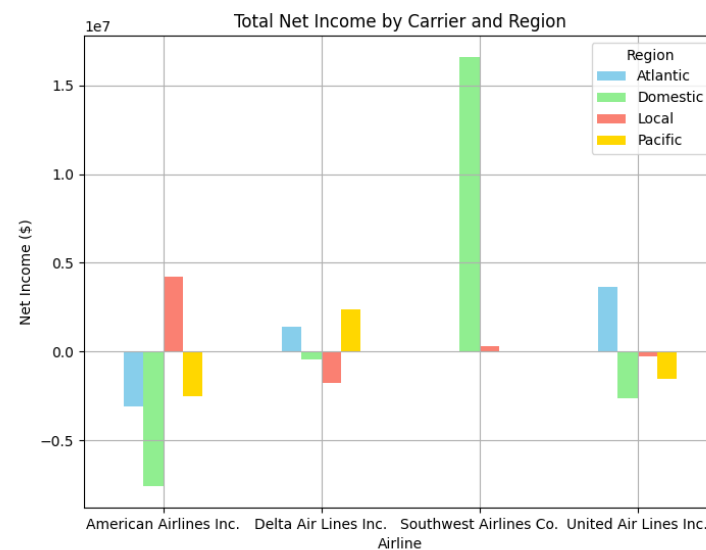
- The historical progression of mergers and acquisitions that led to the establishment of the four largest airlines in the U.S. They boast extensive route networks, large fleets, and brand recognition.
- Each has a distinct niche: American focuses on a global network, Delta prioritizes customer service, United emphasizes efficiency, and Southwest is known for its low-cost model.

### III. Assessment of Financial Performance of Top 4 Airlines



#### Net Income Over Years by Airline:

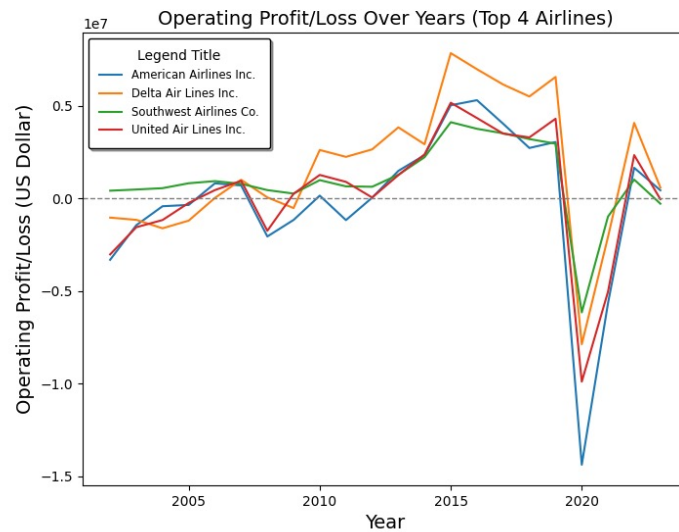
- American Airlines' Financial Challenges: Negative net income till 2014.
- Delta Air Lines' Strategic Shift: Positive net income since 2010 and a notable increase in 2013.
- United Airlines' Volatility: significant loss in 2005 but recovered in 2006.
- Southwest Airlines' Stability: the most stable net income trend among top 4.



#### Total Net Income by Airline and Region:

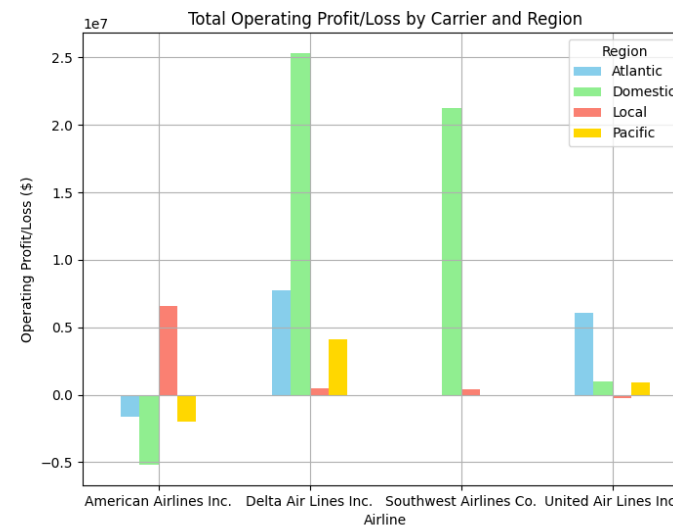
- Southwest Airlines: focus on domestic routes and net income is the highest.
- American Airlines: huge net loss, particularly in domestic operations.
- Delta Airline: net loss in local flight and domestic operations.
- United Airlines: earn the most from its across-Atlantic Ocean flights, but face losses in domestic, local, and Pacific operations.

### III. Assessment of Financial Performance of Top 4 Airlines



#### Operating Profit/Loss Over Years by Airline:

- The trends for US top 4 airlines are similar.
- Among the top 4 airlines, Delta Air Lines is the most profitable airline:
  - (1) Fuel Hedging
  - (2) Fleet Modernization
  - (3) Operational Excellence
  - (4) Customer Service and Brand Loyalty
  - (5) Strategic Partnerships
  - (6) Cost Discipline
  - (7) Economic Recovery Leverage

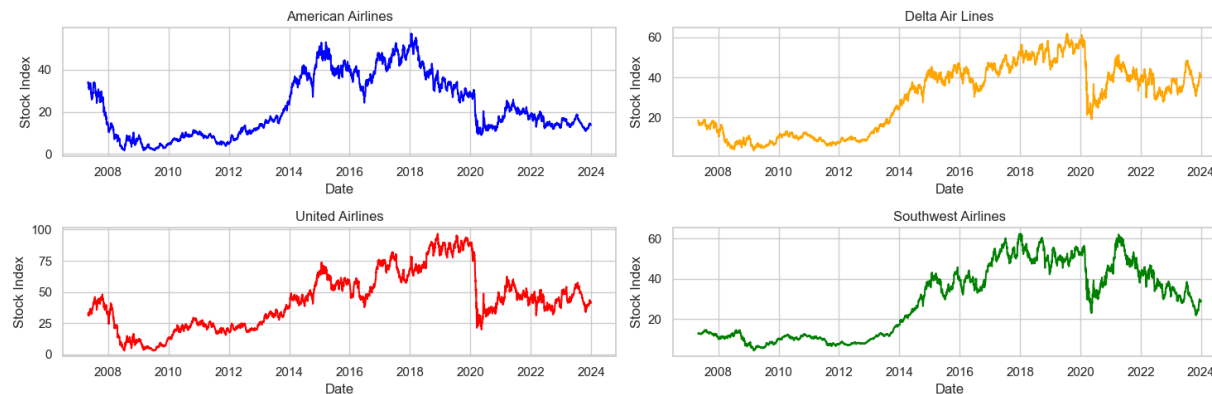


#### Total Operating Profit/Loss Income by Airline and Region:

- Delta Airlines: earnings in all four regions, domestic operation most.
- Southwest: 2nd place, operating solely in domestic and local markets.
- United: 3rd place, the most substantial earnings from Atlantic routes.
- American: least profitable, overall negative profit, especially in domestic operations.

### III. Assessment of Financial Performance of Top 4 Airlines

Top 4 US Airlines Stock Index (2007-2024)

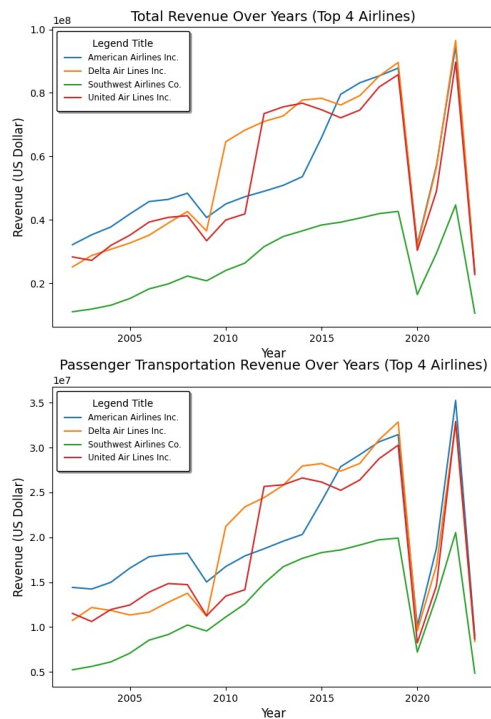


#### Insights:

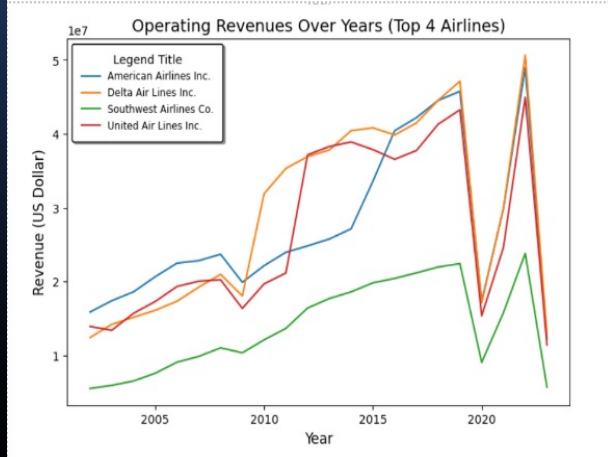
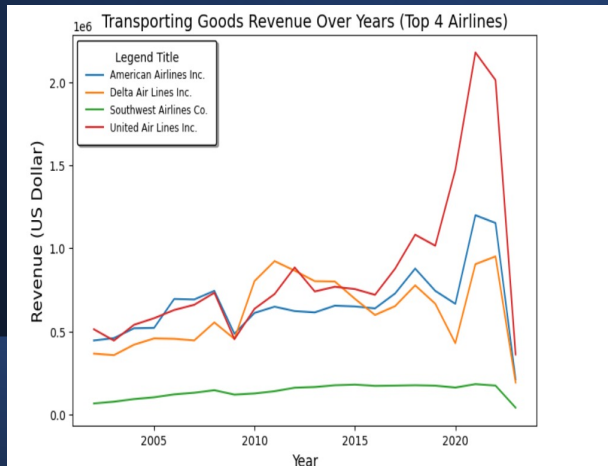
- American's stock data maintain low since 2019.
- Delta's stock data is the most robust one.
- United Airline's stock data is still during recovery.
- Southwest's stock data recovered to pre-pandemic level in 2021 but decreased a lot recently.



## IV. Top 4 Airlines Revenue Analysis



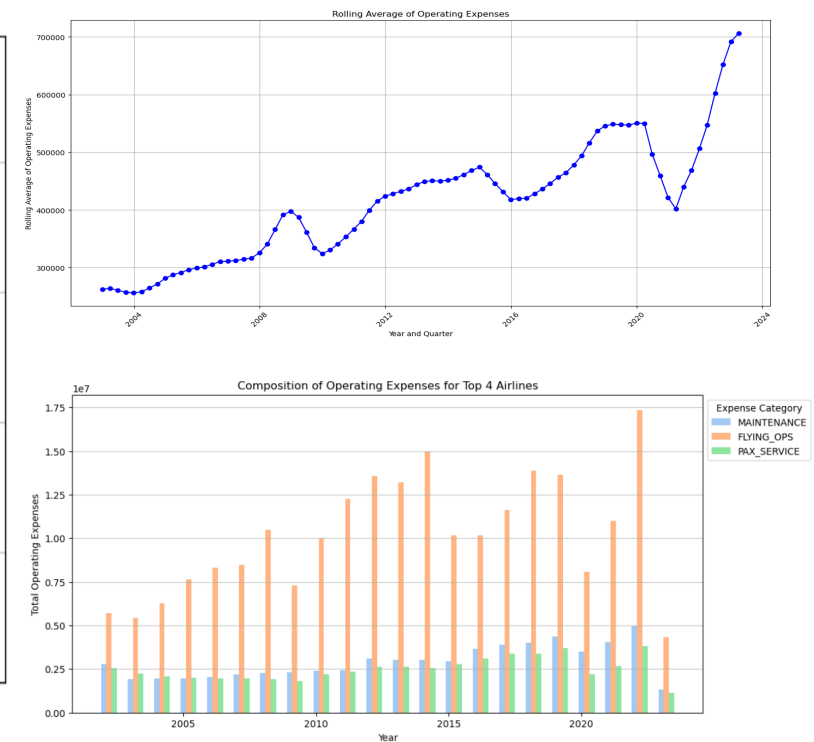
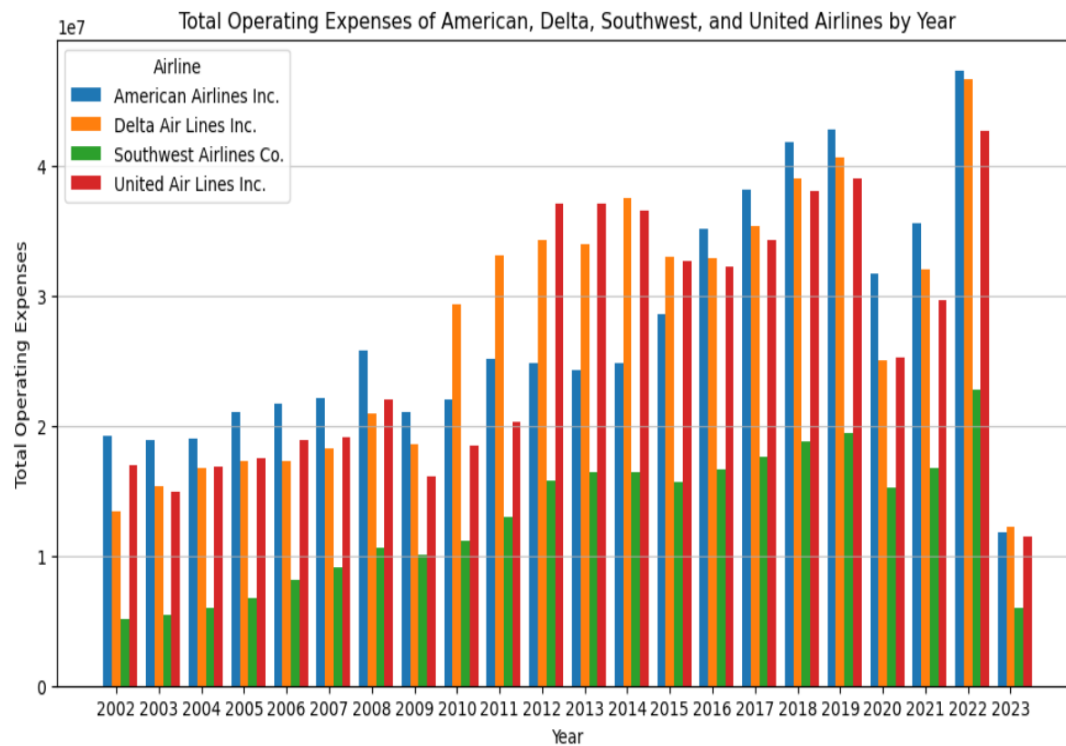
- Total revenue appears to be increasing over the years for all four major US airlines
- Delta Airlines has the highest total revenue among the four airlines throughout the provided timeframe.
- There were two major dips in total revenue coinciding with the 2008 financial crisis and the COVID-19 pandemic.
- American Airlines experienced slower revenue growth compared to competitors from 2008 to 2013. Following their merger with US Airways, they implemented a turnaround strategy that improved their performance.



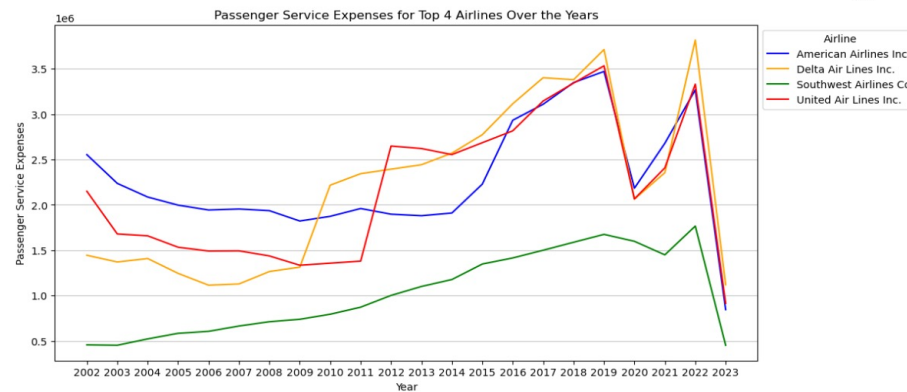
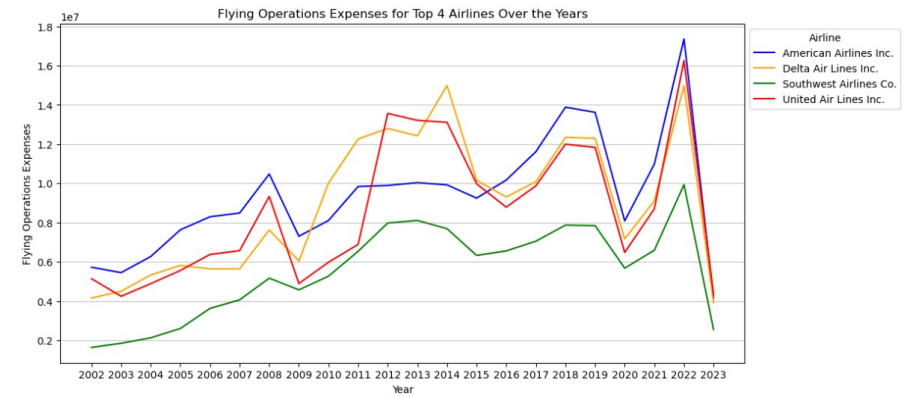
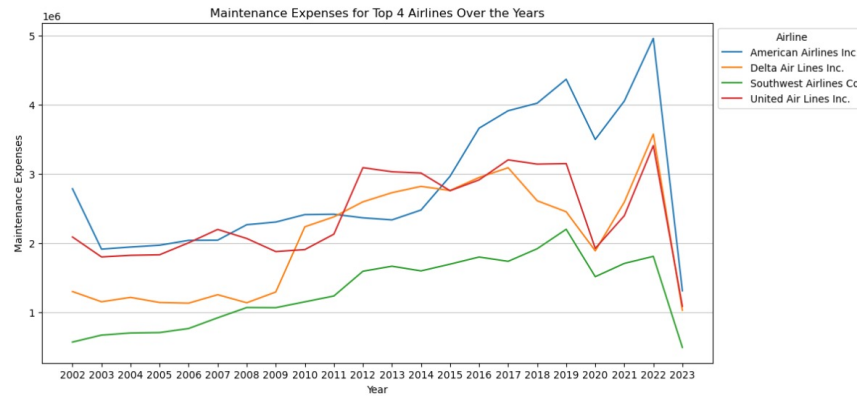
## IV. Top 4 Airlines Revenue Analysis

- With passenger demand plummeting, airlines needed alternative revenue streams. Cargo transportation boomed during the pandemic due to continued demand for goods
- United Airlines' transportation goods revenue has grown significantly over the past few years in compare to others
- Delta Airlines appears to have the highest operating revenue throughout the years shown in the chart, followed by American Airlines, United Airlines and Southwest Airlines.
- Delta merged with Northwest Airlines in 2008 created a larger, more competitive airline with a wider route network and increased operational efficiency.

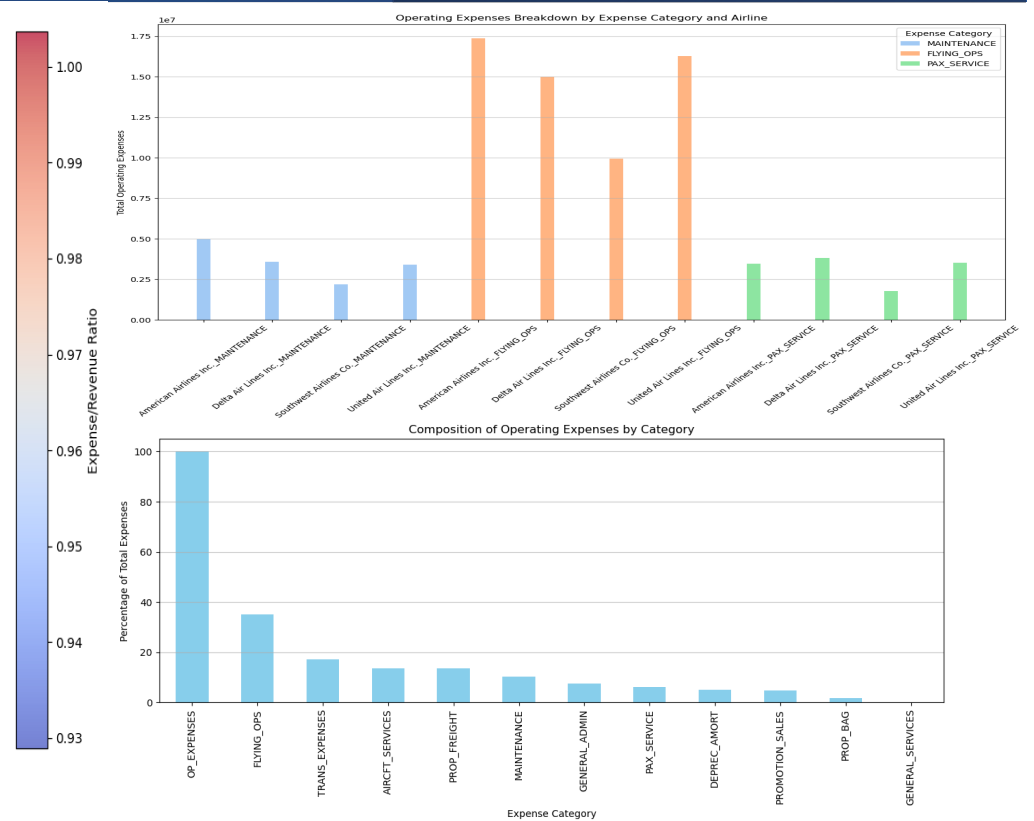
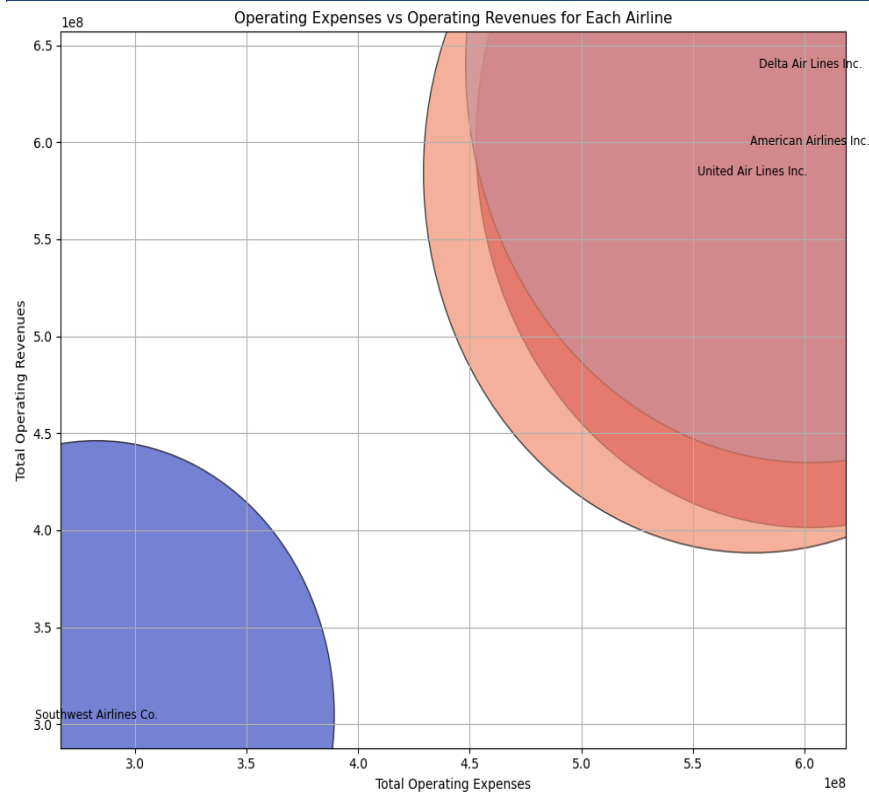
# V. Top 4 Airlines Operating Expense Analysis



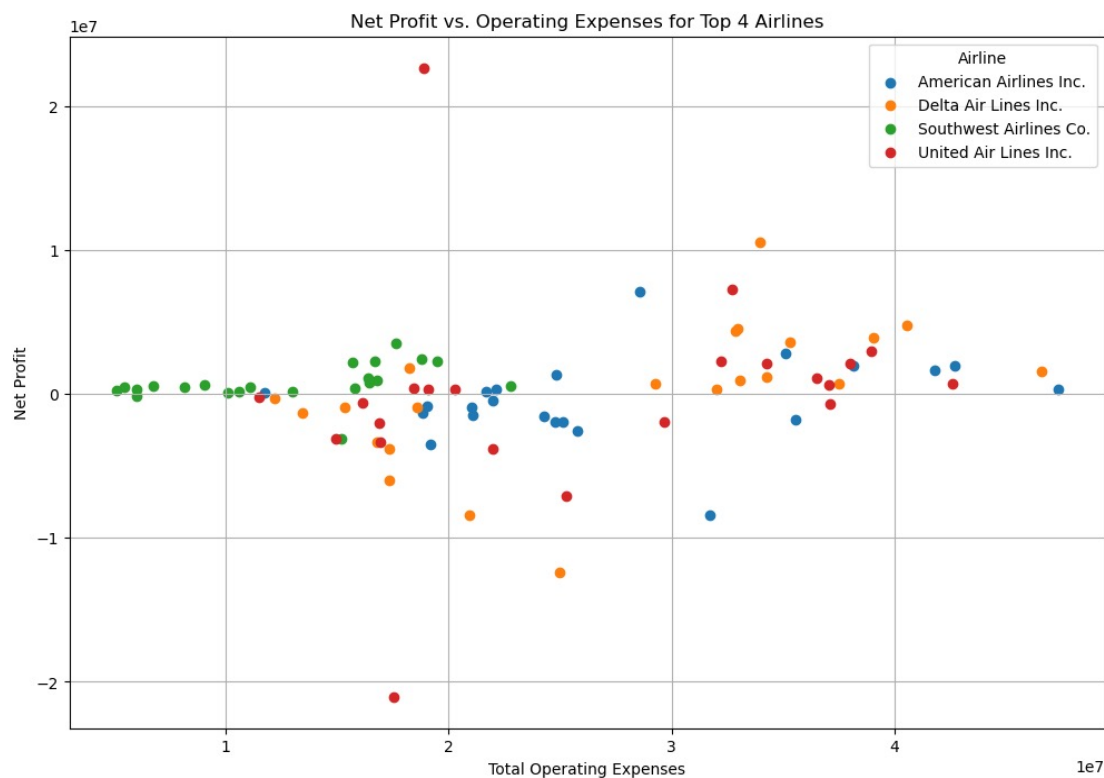
# V. Top 4 Airlines Operating Expense Analysis



# V. Top 4 Airlines Operating Expense Analysis



## V. Top 4 Airlines Operating Expense Analysis



### Insights:

- Southwest Airlines demonstrates the highest profitability margin, with lower operating expenses relative to its net profit compared to the other airlines. This indicates Southwest's ability to generate more profit from its operations, possibly due to efficient cost management.
- Delta Air Lines and American Airlines have similar net profit-to-operating expense ratios, suggesting comparable levels of operating efficiency. However, United Airlines lags behind, indicating potential inefficiencies or higher operating costs.
- Southwest's ability to achieve a higher net profit with lower operating expenses suggests effective cost management strategies. This could include efficient fleet management, route optimization, or other operational efficiencies.
- United Airlines' lower net profit-to-operating expense ratio indicates a lower level of profitability relative to its operating costs compared to the other airlines. This may indicate challenges in managing costs or generating sufficient revenue to offset expenses.

## VI. Alliance and Partnerships



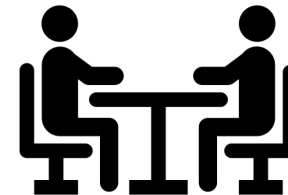
Strategic Focus on Cargo – United Airlines has successfully leveraged partnerships with leading cargo carriers to expand their global reach and increase revenue.



Delta's Rise Through Alliances – Delta's membership in the SkyTeam alliance and joint ventures have been instrumental in their impressive operating revenue growth.



The Importance of Mergers – The merger between Delta and Northwest gave them a dominant network and market share, playing a key role in their revenue growth.



## VII. Insights

- Southwest Airlines maintained the most stable financial performance among the top 4 airlines, attributed to its low-cost carrier model, focus on domestic routes, and strategic decisions around fuel hedging, fleet, and customer service.
- Delta Air Lines implemented strategic initiatives like fuel hedging, fleet modernization, and revenue diversification that helped it emerge as the most profitable of the top 4 airlines between 2011-2019.
- United Airlines experienced significant volatility in net income, partly due to its bankruptcy and restructuring in the early 2000s but was able to improve its financial performance through cost reductions and operational changes.
- American Airlines struggled with high labor costs, operational inefficiencies, and a burdensome cost structure, but saw improvements after its merger with US Airways in 2013.
- All airlines are highly sensitive to economic conditions, as seen during the 2008 financial crisis and the COVID-19 pandemic, which significantly impacted revenues



## VIII. Summary

- High fuel prices heavily impact airline profitability, necessitating strategic partnerships, route planning, pricing adjustments.
- Southwest faced increased low-cost carrier competition post-2011, challenging dominance. Responded with enhanced customer service, route expansion, marketing innovation.
- 2005-2006 fuel price surge greatly impacted airline profits, highlighting vulnerability to fuel cost fluctuations.
- Delta's revenue surged from 2010 driven by mergers, fleet optimization, revenue management strategies.
- Strategic alliances like Delta's SkyTeam, United's cargo partnerships expanded global reach, boosted revenue.