

# The Relationship Between Terrorism, Oil Prices, and Airline Profitability

Ubirathan Miranda, DBA

## Abstract

Increase in the price of petroleum and terrorism negatively affect airline profitability. This quantitative study was an exploration of the relationship between terrorism, fuel price, and airline profitability. Airline financial and security archives were the data for this study. Results indicate that terrorism and fuel cost significantly predict profitability.

## Problem

### Facts supporting the research

- The increase in petroleum prices affects airlines in a negative manner (Bazargan, Lange, Tran, & Zhou, 2013).
- As of 2015, the forecast of the price of fuel is to account for 26.1% of operating costs for the airline industry. In 2003, cost of fuel totaled only 14% (The International Air Transport Association, 2014).
- Terrorism added a financial burden of over \$3 trillion to the United States economy since 2001 (Mueller & Stewart, 2011).

### The business problem

The business problem is the negative influence of the high cost of oil and terrorism on airline profitability.

## Purpose

The purpose of this quantitative correlation study was to examine the relationship between the price of petroleum, terrorism, and airline profitability.

Increased airline profitability could translate into improved socioeconomic conditions through increased employment and additional funds for the research and development of green technologies in the aircraft manufacturing industry.

## Relevant Literature

### Theoretical framework

- Systems Theory was authored by biologist Ludwig von Bertalanffy to explain the interaction between biological systems (Bar-Yam, 2011).
- Systems theory formed the conceptual framework of my study to explore the *interactivity* between the predictor and response variables, and to arrive at a comprehensive understanding of airline profitability.

### Scholastic review

The professional and academic literature review included peer reviewed articles, papers, theses, and books on the themes of terrorism, airline profitability, the petroleum industry, and systems theory.

### Data sources

- The dataset for global terrorism incidents came from the GTD of the National Consortium for the Study of Terrorism and Responses to Terrorism at the University of Maryland.
- The security information on hijacking of American airlines was from the Flight Safety Foundation.
- The airline financial data was from the U.S. Bureau of Transportation Statistics.

## Procedures

### Quantitative correlational approach

A nonrandom sampling technique called convenience sampling was used (Gemayel, Stasny, Tackett, & Wolfe, 2012).

### Samples

84 points of data for each variable (Terrorism, Cost of Fuel, and Airline Profitability) was used.

## Data Analysis

Analysis of the archived data occurred using Statistical Package for the Social Sciences (SPSS) software.

The hypotheses were tested using a statistic test called multiple linear regression.

The multiple linear regression statistical test models the relationship between predictor variables and multiple response variables, and is a way to predict the effect predictor variables have on response variables (Jadhav & Kashid, 2012).

## Findings

The results of the multiple linear regression analysis indicate the model was able to significantly predict airline profitability,  $F(2,81) = 5.447, p = .006, R^2 = .12$

Both terrorism and cost of fuel were statistically significant, with the cost of fuel ( $\beta = -.511, p = .002$ ) accounting for a higher contribution to the model than terrorism ( $\beta = .452, p = .005$ ).

The results of the study validated the negative effect of the price of oil and terrorism on airline profitability found in the professional literature.

The results of the study indicated an alignment between systems theory and professional practice.

## Limitations

Any inaccuracy in the archived data reported by these civilian, academic, and United States government sources would negatively affect the accuracy of the study.

By excluding foreign carriers from the research, the study of the effects of oil price and terrorism on airline profitability was limited to a regional perspective. Other types of terrorist activities such as attacks on financial targets or assassination of a head of state or senior government officials could have had an adverse effect on the petroleum and airline industry.

## Conclusions

The airline industry must concentrate on operational efficiency to minimize fuel costs.

The airline industry must invest on new, more fuel-efficient aircraft as the means of reducing fuel liability.

Airlines must implement comprehensive business continuity programs that address the disruptive nature of terrorism.

## Research Questions

Does a linear combination of terrorism and price of petroleum significantly predict airline profitability?



### Doctoral Study Committee

Kevin Davies  
Judith Blando  
Lisa Kangas

## Social Change Implications

Enhanced socio economic conditions through increased employment in the airline, travel, service, and airline manufacturing industries.

Lesser carbon footprint from the airline industry.

Research and Development of fuel-saving and green technologies by aircraft manufacturers to address pollution and aircraft performance issues.