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Operational Efficiency versus Financial Mobility in the Global Airline Industry: A Data Envelopment and Tobit Analysis

Carl A. Scheraga, Fairfield University

The events of September 11th 2001 precipitated an almost unprecedented financial crisis for the world airline industry. However, it is not clear that these events represent a discrete, industry disruption or whether, in fact, airlines were already entering a period of economic challenges that would demand new strategic orientations on their part. This study investigates the structural drivers of operational efficiency as well as the financial posture of airlines on the eve of September 11th.

A sample of 38 airlines from North America, Europe, Asia and the Middle East was utilized to investigate whether relative operational efficiency implied superior financial mobility (as defined by Donaldson). Data Envelopment Analysis was utilized to derive efficiency scores for individual airlines. The underlying structural drivers of efficiency were then investigated. It was found that the traditional framework developed in the literature still provided reasonable explanatory power for realized relative operational efficiency. However, the second stage of the analysis found that relative operational efficiency did not inherently imply superior financial mobility. As such, airlines that had chosen relatively efficient operational strategies found themselves in positions of vulnerability with regard to financial mobility and thus suffered the consequences in the post-September 11th environment.

The Relationship between Operational Efficiency and Customer Service: A Global Study of Thirty-Eight Large International Airlines

Carl A. Scheraga, Fairfield University

This study examined the relationship between the strategic focus of airline customer service activities and operational efficiency. The empirical investigation employed data for 38 airlines for fiscal year 2000 - the last full year before the events of September 11th 2001. This sample was global in nature and included large international carriers with 9 from North America, 10 from Europe, 6 from Latin America, 12 from Asia, and 1 from the Middle East.

Operational efficiency was measured by means of data envelopment analysis utilizing the input-oriented model specified by Ali and Seiford, an approach used in related studies and much akin to that of Charnes et al. Efficiency measures were related to strategically focused expenditures on passenger services and ticketing, promotion and sales by means of a tobit analysis.

The results of the tobit analysis suggested that these expenditures incorrectly addressed customer requirements as outlined in a framework developed from Kano's methodology. In fact, in some cases, they detracted from operational efficiency. The implications of these results are discussed as well as recommendations for a reorientation of airlines' customer service activities.