The Effects of Joining a Strategic Alliance Group on Airline Efficiency, Productivity and Profitability

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Abstract

A global airline strategic alliance group is a larger cooperation formed by several airlines in order to obtain strategic advantages in their business operations. Nowadays, airline strategic alliance groups have become an important sector of the airline industry and also tend to have dominance in airline business. Airlines want join a strategic alliance group in order expand their business and reduce their costs – and expect to. However, the true benefits of the effects of a strategic alliance group still remain unclear. Little research has been done on how airline alliance strategic groups affect changes in airline performance. This study adopts three different empirical quantitative analyses to reveal the effects of a strategic alliance group on airline performance. The performance indicators included airline technical efficiency, productivity and profitability. The research focuses on 20 international airlines during the 1995–2005 periods from two major categories: allied airlines, which included three global airline strategic alliance groups, and non-allied airlines. The research used data envelopment analysis and stochastic frontier analysis to assess the airlines’ technical efficiency, while panel regression analysis for airline productivity and profitability.

The results suggest that joining an airline strategic alliance group generally will have positive effects on its member airlines’ technical efficiency, productivity and profitability. However, the results are not statistically significant. This implies that the effects of an airline alliance group are practically unimportant to the airline performance, particularly during the study period. Thus this research reveals that airlines joining the alliance group may not necessarily achieve significant improvements in their performance. During the pre-maturity stage of the alliance group, joining an alliance does not necessary bring positive effects to the airlines’ performance. Secondly, the research suggests that alliance group membership numbers do not always have a positive impact on the airline performance, so alliance groups should consider their size. For newly entering airlines, choosing a relatively smaller alliance group can reduce the entry cost. Moreover, the research also shows that there is a minimum membership duration before an airline can receive alliance group membership benefits. It implies that airlines who seek to join the alliance group as a quick solution will not have their expectations met. Further, the research has confirmed the strong year effect existing in the airline industry, which further suggested that alliance group effects are limited and should not be considered as a universal solution.
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Glossary of Abbreviations / Acronyms

AA = American Airlines
AC = Air Canada
AF = Air France
AI = Air India
ATAG = Air Transport Action Group
BA = British Airways
BC = Before Christ
BCC = Banker – Charnes – Cooper
BMI = British Midland International
CCR = Charnes – Cooper – Rhodes
CD = Cobb – Douglas
CP = Cathay Pacific
CRS = Constant Returns to Scale
CZ = Czech Airlines
DE = Delta Air Lines
DEA = Data Envelopment Analysis
DMU = Decision Making Unit
drs = decreasing returns to scale
EQA = European Quality Alliance
FA = Finnair
FFP = Frequent Flyer Programme
FSCs = Full – Service Carries
FTK = Freight Tonne Kilometres
GDP = Gross Domestic Product
GPE = Ground Property and Equipment
IATA = International Air Transport Association
IB = Iberia Lineas
ICAO = International Civil Aviation Organisation
irs = increasing returns to scale
KA = Korean Airlines
LCCs = Low – Cost Carries
LF = Load Factors
LU = Lufthansa
MA = Malaysia Airlines
Mgteff = Airline’s Management Efficiency Change
MLE = Maximum Likelihood Estimation
MPI = Malmquist Productivity Index
MPSS = Most Productivity Scale Size
OAG = Official Airline Guide
OLS = Ordinary Least Squares
PP = Proportion of Passenger Business
PRA = Panel Regression Analysis
Prod = Airline’s Productivity Change
PTE = Pure Technical Efficiency
RPK = Revenue Passenger Kilometres
RTK = Revenue tonne kilometres
SARS = Severe Acute Respiratory Syndrome
SAS = Scandinavian Airlines
Scaleff = Airline’s Scale Efficiency Change
SE = Scale Efficiency
SFA = Stochastic Frontier Analysis
SIA = Singapore Airlines
SL = Stage Length
TA = Thai Airways
TE = Technical efficiency
Techgl = Airline’s Technical Efficiency Change
THY = Turkish Airlines
TL = Trans – Log Production Function
U.S.A. = United States of American
UA = United Airlines
UK = United Kingdom
US = United State
VA = Virgin Atlantic Airways
VRS = Variable Returns to Scale
YR = Year