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

A thesis presented in partial fulfilment of the requirements for the degree of

Doctorate of Philosophy

In

Aviation

At Massey University, Palmerston North,

New Zealand

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2013

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.

Acknowledgments

I dedicate this thesis to my parents, my father Lin Guangji and my mother Chen Xiaohua, for their generous support throughout my very long PhD journey.

I give my deepest thanks to my main supervisor, Dr. James Obben, for giving me the opportunity to continue my research, and also for his unfailing encouragement, support and advice throughout this period. His knowledge of the economic literature and his willingness to exchange and shape ideas has provided new directions for this study. His guidance and support have definitely influenced my life. I cannot describe my gratitude for his sincere dedication, encouragement and generosity. He has become a true friend and respected mentor. I owe him my deepest thanks and appreciation for all that I have accomplished.

I also express thanks to my co-supervisor, Dr. Andrew Gilbey, who has been very kind in helping me during the supervisor change, as well as providing useful comments on my research.

My special thanks and appreciation go to my best friend, Qiu Yifan, and his wife, Liu Jia, who let me realise that ‘He that travels far knows much.’ I am grateful for how they encouraged and supported me in following my dreams.

I must also express thanks to the following people and organisations who have accompanied me and provided great support during such a long period, especially the people from the School of Aviation: Captain Ashok Poduval, Carolyn Gibson, Frank Sharp, Linda Haddon, Anke Smith, Sherryn Irvine, Dr Jose Perez-Gonzalez, Professor Nigel Long and Dr Ross St George. To the people from Palmerston North Surf Life Saving Club, thanks for accepting me as be one of the team. Thanks also to the friends I love and appreciate: Dr Robert Yaansah, who brought me into the academic world and gave me useful guidance through my early PhD study; Donald Crawford and Xin Yan for lending me a room to stay in Palmerston North; Xie Qun, Chen Lulu and their family; Xu Feng, Xu Shuping and their family; Ma Fei; Guo Hengjia and his wife, Shi Yipu; Zhu Xiaoli; Miao Jia; Li Chunchen; ToTo Gao; Cao Ao; Cao Wenqian; Su Liu and Miao Ruyi – the great friends I made in my PhD life.

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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 Carriers

FTK = Freight Tonne Kilometres

GDP = Gross Domestic Product

GPE = Ground Property and Equipment
IATA = International Air Transport Association
IB = Iberia Lines
ICAO = International Civil Aviation Organisation
irs = increasing returns to scale
KA = Korean Airlines
LCCs = Low – Cost Carriers
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