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The analysis of the relationships of Korean outbound tourism demand: Jeju Island and three international destinations

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ABSTRACT

This paper investigates the determinants of the relationship among Korean outbound tourism demand for Jeju Island and three other Asian island countries using the multivariate generalized autoregressive conditional heteroskedasticity (MGARCH) and Vector Error Correction (VEC) models. It is found that pairwise conditional correlations among tourism demand for Jeju, Thailand, Singapore and the Philippines are not constant but time-varying. Estimated conditional correlations among Jeju and the three Asian countries are negative over some time periods. This implies that the three Asian countries are substitutes for Jeju in certain specific time horizons. The VEC model is used to investigate the short-run and long-run dynamic relationships and the results reveal that Industrial Production Index and real exchange rates had the positive or negative impact on conditional correlations of tourism demand for these destinations. Tourism policy implications are discussed for managing tourism demand for these destinations.

1. Introduction

The purpose of this study is to investigate the significance of South Korean outbound tourism to Jeju Island and three other Asian destinations by examining the determinants of the relationship among tourism demand and factors influencing the demand. It attempts to use the Dynamic Conditional Correlations (DCC) model to analyze the dynamic structure of conditional correlations among Korean outbound tourism demand for one domestic destination and three similar international destinations over time. It focuses on the applications of the research findings to demand analysis in destination management and government policy development.

Over the past several decades, the tourism industry in South Korea has increasingly become a significant segment of the national economy. Tourism expenditures accounted for 3.2% of the total final demand and value-added revenue induced from tourism-related businesses made up 3.5% of the Gross Domestic Product (GDP) in South Korea in 1988 (Oh, 2005). Twenty years later, the contribution of travel and tourism to the Korean GDP is estimated to reach 6.6% in 2008 by the World Travel and Tourism Council (2008). Before 1988, the Korean government restricted outbound travel by Korean citizens to control the outflow of foreign currency while promoting rigorously inbound tourism through mega events such as the 1986 Asian Games and 1988 Olympic Games. As a result, inbound tourism grew rapidly and South Korea enjoyed a surplus in its balance of payment in travel account. However, the Korean government lifted the restriction on outbound travel by Korean citizens as well as the spending limit on credit card use during overseas travel by passing the Liberalization of Travel Code in late 1988 (Mak, 1992; Singh, 1997). After the removal of the outbound travel restriction by the government, outbound travel by Korean tourists gradually increased and the trend continued markedly throughout the 1990s and the first part of 2000s. Consequently, South Korea experienced seven consecutive years of deficits in the national balance of payments in travel account from 2000 to 2006. For example, the number of inbound tourists to Korea was recorded at 6.16 million while the number of Korean outbound tourists reached 11.61 million in 2006, resulting in a staggering deficit of $8.49 billion in the balance of payments in travel account (Korean Tourism Organization, 2007).

The Korean outbound tourism demand is primarily for leisure, business, conference, and government travel (Korean Tourism Organization, 2007). Particularly, Korean leisure tourism demand for Asian countries, such as Thailand, Japan, China, Singapore and the Philippines, has markedly increased since 1992, except during the Asia Financial Crisis in 1997 and the outbreak of SARS in 2003.[1]

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[1] Overall, Korean outbound tourism demand of leisure purpose for Thailand, Japan, China, Singapore and the Philippines was 70%, 58%, 55%, 85% and 81%, respectively in 2006 (Korean Tourism Organization, 2007). The demand of Korean outbound tourism for China has been significantly increased since 2000 due to improved political relations, open sky agreement (2006), geographic proximity and vigorous promotions by both the Chinese and Korean tourism industry.

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The outbound tourism gradually affected Korean domestic tourism. Jeju Island, located to the southeast of Korea and recently designated as a World Natural Heritage site by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in June 2007, has been a leisure and honeymoon destination for Koreans.[2] The number of Korean and international tourists to Jeju Island was approximately 4.7 and 0.38 million in 2005 respectively, according to Jeju Special Self-Governing Provincial Tourism Association.[3] Despite Jeju's pristine island landscapes and beach resorts - in comparison to other popular destinations on the Korean peninsula - Korean tourists have been influenced to overseas vacations by many push and pull factors. The push factors include increased discretionary income, relaxed policy on outbound travel and spending, available leisure time, and strong motivations for overseas travel. The pull factors are demonstrated in aggressive marketing by overseas tourism destinations, favorable foreign exchange rates, and convenient and competitive tour packages. The Korean tourism authority is now faced with the challenges of promoting Korean destinations to domestic tourists.

It is therefore interesting to examine the determinants of the time-varying relationships among Korean tourism demand for Jeju Island and other popular Asian island destinations. These determinants can reveal how selected major Korean macroeconomic variables affect Korean tourists' demand for Jeju and the other popular Asian destinations. As a competitive analysis, three Asian countries, the Philippines, Singapore, and Thailand, were selected for this study because these three countries also feature beautiful islands and have been popular with Korean tourists since the 1990s. Thailand, the Philippines, and Singapore were ranked the 4th, 5th and 8th outbound tourist destinations for the Koreans in 2005, respectively. Eighty-six percept of Korean visitors to Thailand, 81.4% to the Philippines and 70.2% to Singapore were reported as leisure tourists by the Korea Tourism Organization in 2005. In addition, Table 1 illustrates that 63.5% of Korean outbound tourists visited Jeju Island as FIT, but 75.9%, 80.3%, and 83.4%, respectively, of Korean outbound tourists took package tours to the Philippines, Singapore, and Thailand.

Three research questions were formulated for this study: (i) Is the relationship among tourism demand for Jeju and the three Asian destinations constant over the time horizon under study? (ii) Are the three Asian destinations substitute or complement for Jeju Island in regard to Korean outbound tourism? (iii) What are the determinants of conditional correlations among Jeju Island and the three Asian destinations? The findings of these questions can be used to help policy formulation, forecast visitor flow, and enable Korean tourism authority and destination management to understand demand patterns and promote domestic tourism.

In this study, the multivariate generalized autoregressive heteroskedasticity (MGARCH) model with dynamic conditional correlation (DCC) specification and the vector error correction model (VECM) is applied to investigate the above research questions. The relationship of Korean outbound tourism demand for Jeju and the three Asian destinations can be measured by correlation coefficient. Usually, correlation coefficient is given by a constant which is not time-varying. However, in reality, correlation coefficient of tourism demand between two destinations may not be a constant since it can fluctuate over time. The MGARCH model with DCC specification, proposed by Engle (2002), provides a useful way to estimate conditional (time-varying) variance–covariance matrix. Thus, the dynamic structure of conditional correlations among Korean outbound tourism demand for Jeju Island and the three Asian destinations can be analyzed by estimating DCC–MGARCH model. Once the time-varying correlation series are determined, the effects of major macroeconomic variables can be analyzed by the usual regression setup. It is well known that many macroeconomic variables are non-stationary (Nelson & Plosser, 1982). It is therefore very useful to apply VECM to evaluating such non-stationary behavior of time-series variables (Engle & Granger, 1987). Thus, VECM is applied to determining the effects of major economic variables to the time-varying correlation among Korean outbound tourism demand for Jeju Island and the three Asian destinations.

Table 1
Travel mode of Korean outbound tourists.

Travel mode	Jeju Island	Philippines	Singapore	Thailand
Individual (%)	63.54	24.1	19.7	16.6
Package (%)	36.45	75.9	80.3	81.3

Source: Jeju Special Self-Governing Provincial Tourism Association (2007) and Korean Tourism Organization (2007). Data for Jeju show the percentage of total tourists and data for the other three destinations show the percentage of sample populations.

2. Literature review of tourism demand

Scholars have been studying tourism demand by applying various econometric and statistical models to understand tourism decisions and behaviors influenced by macroeconomic factors. Webber (2001) investigated exchange rate volatility as macroeconomic variable and cointegration in the long-run demand of Australian outbound leisure tourism for nine major tourism destination from 1983 to 1997. This study found that exchange rate was significant in determining the long-run tourism demand by 50% in some estimates. Another study applied the consumer theory of choice to Australian international tourism demand from the US, UK, Japan and New Zealand and discovered cross-demand effects due to diverse tourist motivations (Divisekera, 2003).

Several studies have been conducted to investigate the volatility of tourism demand (Chan, Lim, & McAleer, 2005; Kim & Wong, 2006; Shareef & McAleer, 2007). Kim and Wong (2006), and Song, Romilly, and Liu (2000) used the univariate autoregressive conditional heteroskedasticity (GARCH) model to analyze the volatility of tourism demand.[4] However, the univariate GARCH model cannot determine an interdependent effect among variables. Chan et al. (2005), and Shareef and McAleer (2007) later extended the univariate GARCH model to the multivariate GARCH (MGARCH) model for studying international tourism demand.

Hoti, McAleer, and Shareef (2007) applied the ARCH and VARMA-GARCH models to compare tourism demand, country risk return and associated volatility for Cyprus and Malta, and identified the spillover patterns in tourism growth and country risk returns in the two small island tourism economies. They used the MGARCH model with a constant conditional correlation specification by Bollerslev (1990) to analyze the interdependencies of international tourism demand among destinations.

However, they assumed that the conditional correlation is constant over time, which could be an especially strong assumption in the real world. This study applies the multivariate generalized

[2] Jeju Island was recently recognized as UNESCO World Natural Heritage site for its spectacular volcanoes and lava tubes. It is the first UNESCO World Natural Heritage site in Korea.

[3] Jeju Special Self-Governing Provincial Tourism Association is an industry association charged to promote the destination to both domestic and international tourism. More information can be obtained from: http://www.hijeju.or.kr/.

[4] GARCH model is a generalized autoregressive conditional heteroskedasticity (ARCH) model. It uses the variance of the current error term as a function of the variances of the previous time period's error term. The model relates the error variance to the square of a previous period's error.