

THE ASIAN INCOMING TOURISM DEMAND AND UNCERTAINTY

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Abstract- This research studies the effect of the uncertainty factors in Thailand on the demand for traveling of the tourists who came from 19 Asian countries during 2003 - 2014. The econometric model is used to analyze the factors which are the panel data and result that weather, distance, disaster, and disease has the impact on the tourism demand while the amount of rainfall, the political instability, and terrorism do not affect the tourism demand.

Index Terms- Demand, Disaster, Disease, Distance, Politic, Season, Tourism, Thailand, Uncertainty

I. INTRODUCTION

Thailand is a famous tourism place, because of the beautiful places, the delicious foods, and the friendly people who represent the slogan “Land of Smile”. The very nice Thai people who always welcome the tourists will make their heart are warm and expect to come visit again. Even the weather is generally hot throughout the year, it is complementary for the trip at the beach or the island. In addition, the fairly low cost of living in Thailand also attracts the numbers of tourists. Not only the natural tourism places, the places where reflect the Thai culture such as the temples and the palaces are alsomamous.

The gorgeous architecture and the design that identify the culture of Thailand can surprise the tourists and make them impress with it.

The tourism plays the very important role on the Thai economy. According to the Gross Domestic Product (GDP), Thailand earns a lot of revenue from the international tourists and this revenue tends to have the higher share in GDP continuously as shown on the figure1.

Source: Office of the National Economic and Social Development Board and Department of Tourism

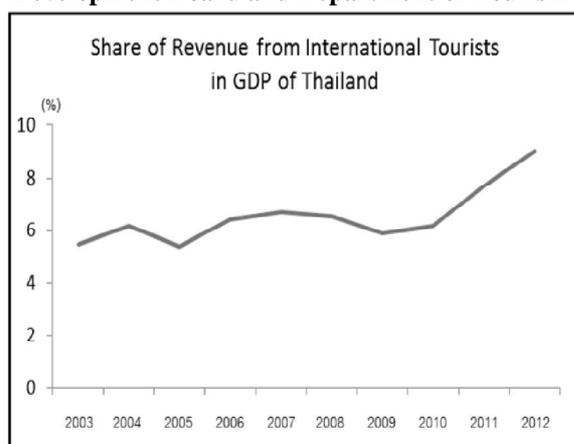


Figure1: Share of Revenue from International Tourists in GDP

Source: Bank of Thailand and Fiscal Policy Office

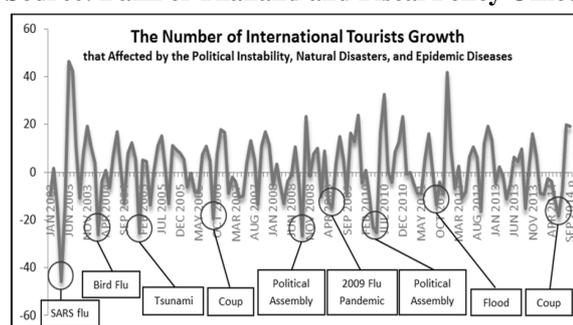


Figure2: Number of International Tourists Growth that Affected by the Political Instability, Natural Disasters, and Epidemic Diseases

Unfortunately, there are many unstable situations which are out of control. These instabilities cause an inconvenience for the tourists and make them less likely to travel Thailand. Thus, the number of the international tourists is affected. As shown on figure2, The unstable situations; political instability, natural disasters, and epidemic diseases, reduced the amount of the international tourists severely. Hence, this research studies the uncertainty situation with the purpose to estimate and analyze how the uncertainty factors affect the tourism demand.

II. METHODOLOGY AND VARIABLES

Data and Variable selection

In this study, the panel data were used to analyze the main factors that impact to tourism demand through the econometrics model. The model constructed in this study is based on demand function, the classical economic theory which assumes the income and price factors are main determining the demand for international tourism. The several unstable factors which were studied the impact on the demand for tourism are distance, seasonal, political instability, natural disaster, epidemic diseases, and terrorism.

Monthly and annual data from the period of 2003 to 2014 were used. The data were collected from several sources. Data for the number of the Asian incoming

tourists were derived from Department of Tourism and were estimated by using aggregate visitor arrives as dependent variable and were measured by incoming foreign visitors (MA Ibrahim, 2011). Data of annual CPI at time t of each country from World Bank were used as a proxy for price variable due to the difficulty of collecting (Yu-Shan Wang, 2009). Income variables can be represented by GDP as a proxy (JrDeluna and NaraeJeon, 2014) derived from Trading Economics. Distance variables usually measured a country’s center to another country’s center (MohdHanafiah and Mohd Harun, 2010) and this paper uses distance data between each country’s capital and Bangkok defined as kilometers which were derived from World atlas. Monthly mean maximum temperature (degree Celsius) data in Thailand were used to represent seasonal variables because its effects on the number of the Asian incoming tourists is interested and mean monthly rainfall in Thailand is concerned about as well. Both data are from Thai Meteorological Department. This paper focuses on the uncertainty that is political instability, natural disasters, epidemic diseases, and terrorism which were counted based on the weekly hot news of Manager Newspaper.

Model Specification

The following Asian incoming tourist demand function assumes that the number of the Asian incoming tourists is affected by price, level of income, distance, seasonal, and uncertainty variables:

$$TA_t = f(\text{price}_t, \text{income}_t, \text{distance}_t, \text{season}_t, \text{political instability}_t, \text{natural disaster}_t, \text{epidemic disease}_t, \text{terrorism}_t) \quad (1)$$

In this study uses the multiple regression form to be estimated as following model:

$$TA_t = \beta_0 + \beta_1 CPI_t + \beta_2 GDP_t + \beta_3 distance_t + \beta_4 temperature_t + \beta_5 rainfall_t + \beta_6 political_t + \beta_7 disaster_t + \beta_8 disease_t + \beta_9 terrorism_t + u_i \quad (2)$$

Where TA_t refers to the number of Asian tourists arriving in Thailand in time t, CPI_t is the consumer price index (2010=100) refers to the price level in each Asian country in time t, GDP_t (\$billion) refers to income of Asian tourist arrivals to Thailand in time t, $distance_t$ is distance between each country’s capital and Bangkok defined as kilometers, $hotweather_t$ is monthly mean maximum temperature (degree Celsius) in Thailand in time t, $rainfall_t$ is mean monthly rainfall in Thailand in time t, $Political_t$ is political instability in Thailand including with Coup d’etat, protestors mobilization, leader announcement of assembly, and reporting for duty collecting based on the Manager weekly newspaper, $disaster_t$ is natural disaster in Thailand including with flood, Tsunami, landslide, earthquake, and storm collecting based on the Manager weekly newspaper, $disease_t$ is

epidemic disease including with 2009 flu, and Bird flu in Thailand collecting based on the Manager weekly newspaper, $terrorism_t$ is collecting based on the Manager weekly newspaper including with bombing, and shooting both in the assembly or not, u_i is random error term. $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8$, and β_9 are coefficient can be interpreted the effect from each parameter. The expected signs are $\beta_0, \beta_1, \beta_2 > 0$; $\beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8 < 0$.

III. RESULT

Table1: Full Information of the Number of Asian Tourists Incoming Demand’s Regression.

Variables	Coefficients	t-value
CPI	445.6461***	8.64
GDP	28.33135***	42.76
DISTANCE_KM	-15.83683***	-15.30
TEMPERATURE	-1,097.455*	-1.66
RAINFALL	5.739107	0.54
POLITICAL	-323.1546	-1.51
DISASTER	-1,321.494***	-2.72
DISEASE	-2,108.075**	-2.29
TERRORISM	-329.4489	-0.78
C	50,847.52**	2.29

Notes: (1) The adjust R^2 is 0.485 and Durbin-Watson test is 1.9516. (2) *,** and *** are significant at 10%, 5% and 1% level, respectively. (3) C is an intercept.

As the results from running regression which is shown on table 1, we can interpret the regression that the number of tourists will normally come to Thailand 50,847 persons. The positive coefficient of CPI means if the tourists’ home country's CPI increases by 1 unit, the number of the tourists coming to Thailand will increase by 445 persons. GDP coefficient is also positive means if GDP of tourists’ home country increases on average by \$1 billion, the number of tourist coming to Thailand will increase 28 by persons. The relationship between distance and the number of tourist arrivals to Thailand is negative will affect the number of tourist arrivals to Thailand to decrease by 15 persons if the distance is longer by one kilometer. Mean maximum temperature has the negative relationship with the number of tourist arrival to Thailand as well. It means the higher temperature, the lower tourist coming. If the temperature is higher 1 degree Celsius, the number of tourists will be dropped by 1,097 persons. There is no effect from mean monthly rainfall because it’s insignificant. Neither political instability nor terrorism is significant. Disasters have negative relationship with the number of tourist arrivals means if there is an increasing in disaster happening one additional time, the number of tourist arrivals will decrease by 1,321 persons. The relationship between epidemic disease and the number of tourist arrivals is negative means an additional epidemic disease happen in Thailand will cause the drop in the number

of tourist arrivals by 2,198 persons. Interestingly, the coefficient of political and terrorism are not significant but even if they were, the coefficient size would be smaller than others' size except the distance's. The R-square value of about 0.48 means that about almost 50 percent of the variation in the number of tourist arrivals to Thailand is explained by CPI, GDP, DISTANCE, HOTWEATHER, RAIN, POLITICAL, DISASTERS, DISEASE, and TERRORISM. According to the results we can see that epidemic disease plays the most important role for the number of tourist arrivals to Thailand.

IV. CONCLUSION

The demand of the Asian tourists for travel Thailand will increase if there is the rise in the tourists' home country's CPI, which reflects the price of travelling, or the rise in their income, which is reflected by GDP of tourists' home country. On the other hands, the longer distance from their home country to Thailand, the higher mean of maximum temperature which reflects the season, the frequent natural disasters, and the more epidemic diseases will reduce their tourism demand. The decision of these Asian tourists will be shown as the number of the Asian tourists which is the one of the tourism indicator of Thailand.

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