MODELLING CHINESE OUTBOUND TOURISM DEMAND TO OBOR COUNTRIES

[1]CHUANMEIXU, [2]CHUKIATCHAIBOONSRI

[1,2]Faculty of Economics, Chiang Mai university, Thailand
E-mail: [1]chuanmeixu1995@gmail.com, [2]chukiat1973@gmail.com

Abstract - With the development of "One Belt One Road" initiative, more and more Chinese tourists would like to travel OBOR countries. This study used panel-ARDL approach to show the impact determinants affecting Chinese outbound tourism demand to OBOR countries. Due to data limited, this study only analysis the top ten OBOR countries based on Chinese tourist arrivals. The evidence shows that income, relative price and FDI have positive effect on Chinese outbound tourism demand to OBOR countries in the long-run, however, FDI has a negative influence on Chinese outbound tourism demand in the short-run. And trade openness has no any influence for Chinese tourist arrivals.

Keywords - OBOR Countries, Chinese Outbound tourism, Panel-ARDL Model

I. INTRODUCTION

Tourism is becoming the most potential economic growth trend for many countries, for many destinations (particularly developing countries), this growth trend keeps rising and tourism becomes the most dynamic and longest growing sector of the economy. In order to develop infrastructure and investment in Europe, Asia and Africa, "One Belt One Road" initiative was proposed by President Xi Jinping in 2013, its construction has made a great progress in all aspects, and also include the tourism industry. Under the advocacy of this initiative, China has continuously strengthened tourism cooperation with countries participating in the "One Belt One Road" (OBOR countries). And these countries have become new destinations for Chinese outbound tourism, except traditional outbound destinations, like Japan, South Korea, Chinese people have more diversified choose for outbound destinations.
"One Belt One Road" covers dozens of countries, involving different civilizations, systems and religious beliefs, from Middle Asia to Europe, from Southeast Asia to South Asia even Africa. Along the "One Belt One Road", world cultural heritage accounts for 74%, nature reserves are 53%, and so on, there are adequate tourism resources, tourism provides this opportunity to experience them. Nowadays, in addition to the traditional outbound tourism destinations, more and more tourists would like to have some new cultural tourism with individuality, therefore, new tourism routes along OBOR countries have also emerged.

In the past five years, with the continuous development of the "One Belt One Road" initiative, it creates new opportunities for the establishment of international tourism cooperation between China and OBOR countries. China and these countries have established a series of "One Belt One Road" tourism cooperation and exchange mechanism. In 2015, China hosted the Silk Road Tourism Ministers Meeting, the tourism ministers of all countries agreed that "to jointly build the "Silk Road" tourism brand" "to promote market swaps and customers exchange among OBOR countries". It has successively established a series of bilateral or multilateral tourism cooperation mechanisms such as China-ASEAN, China-Central and Eastern Europe, China, Russia and Mongolia, these provide mechanism guarantee for deeply developing the "One Belt One Road" tourism. In recent years, many provinces also have responded positively to the "One Belt One Road" initiative and promoted tourism cooperation with OBOR countries.
Since China proposed the "One Belt One Road" initiative in 2013, cooperation in the tourism sector has become a hot spot for all OBOR countries, each of them by dialoging and consulting to achieve double-win and mutual benefit, the direct performance is the huge tourism markets. The number of Chinese tourists to travel OBOR countries has increased year by year, from 15.49 million in 2013 to 27.41 million in 2017. OBOR countries has surpassed Japan, South Korea and other non- OBOR countries, becoming the largest Chinese outbound tourism destinations, Chinese tourists increase by 77% in five years, with an average annual growth rate of 15.34%. in particular, with the deepen development of the "One Belt One Road" cooperation policy in 2015, the growth rate reached 29.92%, Chinese people accelerated the outbound tourism demand to the OBOR countries, and made a huge contribution to these countries' tourism economy. Meanwhile, OBOR countries achieved an international tourism revenue of US$ 285.1 billion of which approximately 30.82% are contributed by mainland Chinese tourists (YIDAIYILU.GOV.CN).
Following the top ten outbound OBOR destinations for Chinese tourists (Travel China Guide). ASEAN countries mainly become the popular destinations among Chinese outbound tourists, because ASEAN countries have closer geographical location and similar culture with China, these countries make the effort to create a better atmosphere for sighting.

ASEAN countries simplify Chinese tourists by providing visa-free or E-visa; and they provide Chinese signs in the tourism facilities and expand the scale of Chinese guides, while the familiar lifestyles of Chinese tourists such as mobile payment and shared bicycles are also spreading in Southeast Asia. Compared with these years, Thailand, Singapore, Malaysia, Philippines, Indonesia, Vietnam and Cambodia always keep in the top 10.

Only Maldives and Sri Lanka belong to island destinations in the top 10 OBOR countries, as an important economic source of the Maldives, Maldives devotes a large amount of advertising in China, therefore, more and more Chinese tourists go to the Maldives for weddings and honeymoons. Russia, as only one European country in the top 10 OBOR countries, has good diplomatic relationship with China and positively respond to OBOR initiative, Chinese tourists can get free visa to travel Russia through tour. Recent years, due to the depreciation of the ruble, the cost of consumer goods has dropped significantly, therefore, and the number of Chinese tourists to Russia has increased significantly.

On the whole, Chinese outbound tourists travel to OBOR countries has an upward trend, especially after 2015, the growth rate has increased significantly. At the same time, China has become the largest tourist source in Thailand, Vietnam, Singapore, Indonesia, Russia, Cambodia and Maldives, and made huge contribution to the development of the local tourism economy. Among these countries, the number of Chinese outbound tourists visiting Thailand is significantly higher than that of other countries. In 2017, the number of Chinese tourists to Thailand reached 9.8 million, the growth rate is more than 10%, accounting for 27% of Thailand's annual inbound tourists; in 2016 Vietnam has attracted 2.7 million Chinese tourists and became the second most popular destination on the “One Belt One Road”. More than 300,000 Chinese tourists travel to the Maldives every year, almost exceeding the whole country's population. In addition, with the promotion of the “One Belt One Road” construction, the “non-hot destinations” also attracted a large number of Chinese tourists. Over the past three years, Egypt’s tourism has increased by 145%, and the UAE’s tourism has increased by 132%, Turkey has risen by 106%. In 2016, the number of Chinese tourists visiting Central and Eastern European countries increased by 229% compared with 2015. Therefore, the “One Belt One Road” positively promoted tourism cooperation and development among OBOR countries.

China has become the fastest growing outbound travel market in the world, and also is the largest source market of outbound tourists in the world (UNWTO, 2017). Chinese economy experienced astonishing growth in the last few decades, people have more disposables income, in addition, Chinese government increased public holidays, therefore, people would like to experience the long-distance outbound tourism, and Chinese outbound tourism demand increases year by year.

Compared with the total population of approximately 1.3 billion people, the numbers of outbound Chinese tourist remain small even it has already large (Dai, Jiang, Yang & Ma, 2013). Therefore, Chinese outbound tourism still has huge potential and keeps booming in both market size and value. However,after “One Belt One Road” initiative was proposed, China has deepened cooperation with OBOR countries, Chinese tourists have various choose to travel more new destinations.

In conclusion, the “One Belt One Road” initiative has positive influence on Chinese outbound tourism, author will choose 10 OBOR countries (Thailand, Singapore, Malaysia, Indonesia, Vietnam, Maldives, Russia, Cambodia, Philippines, Sri Lanka) to study determinants which affect Chinese outbound tourism demand.

II. DETAILS EXPERIMENTAL

2.1. Tourism Demand Theory

This study is based on tourism demand, it can perceive that the conception originates from the classical economic demand, namely the willingness to purchase a goods or services in order to possess them. (Song, Li, Witt, & Fei, 2010). The fundamental characteristic of tourism demand is similar to that of demand, the prices of tourism products and services fall, the quantity tourism demand will rise, and other things keep constant. Therefore, there is a negative relationship between the quantity of tourism demand and the price associated with tourism. Income and substitute price are important factors for tourism demand, there are positive relationships with the quantity of tourism demand. Therefore, the general touri.sm demand model can be written as:

$$TA_{ij} = f\left(Y_i, RP_{ij}, SP_{ij}, e_{it}\right) = AY_{it}^{\beta_1} P_t^{\beta_2} P_{st}^{\beta_3} e_{it} (1)$$

In this paper, where TA_{ij} denotes the outbound tourist arrivals from origin i to each destinations j; Y_i, P_t, P_{st} , $e_{it}$are income of origin, relative price of destinations, the substitute price and residual term that may influence the outbound Chinese tourist arrivals from origin to each destination.

2.2. Literature Review

In this section, the author reviews the previous studies, analyzing their model, variables they used, and results and explain briefly. By the analysis of empirical studies, there are majority of literatures on tourism demand modelling and forecasting, they mainly talk about the determinants of different regions and countries. The "One Belt One Road" will be the main

direction of China's economic development in the future. At the same time, it's also important for OBOR countries to rationally use the "One Belt One Road" opportunity to develop their international tourism.

Lin et al. (2015) apply the ARDL bounds tests to examine the Chinese outbound tourism demand for 11 international destinations, and the cointegration relationships between the tourism demand variable and determinants variables. They find the income level and the cost of stay at tourism destinations, which are two important factors affected Chinese tourists' traveling abroad compared with that staying of traveling at Chinese destinations. The results show that Chinese outbound tourists mainly travel to Asian countries/regions in the future, the total number of outbound tourists is expected to more than 130 million in 2020.

Qiong&Chen (2018) try to investigate the critical determinants of Chinese outbound tourism to Japan. Different to other studies, they find the habit persistence and efficient relative price are significant determinants in explaining the Chinese outbound tourism to Japan, while the income and effective substitute price are not important factors. Meanwhile, most Chinese tourists travel to Japan in the third quarter and influenced by external shocks by natural disasters. In the paper, tourists are highly sensitive to the change of tourism price in Japan, it's benefit for policy makers and tourism enterprises to attract more tourists by launch some strategies. Therefore, the demand elasticity provides useful suggestions for the formulation of pricing and other strategies.

The traditional theory of demand considers income, the relative price and substitute price as the most important determinants of market demand (Koutsoyians, 1991). However, international tourism as one of the forms of international trade, the demand is also affected by other factors such as trade openness, political stability, FDI and so on, the author provides a review of studies on international tourism demand.

Ngugi Kamau and Wanjiru Lucy (2014) applies panel regression model to estimate the international tourism demand in Kenya with respect to 11 main tourism suppliers, the study results indicated that tourism price, travelling cost, trade openness and word of mouth effect were the main economic factors influencing international tourism demand for Kenya. And they found the coefficient for bilateral trade variable was positive and statistically significant at 5 percent level, which implying that the greater the bilateral trade between the tourist origin country and Kenya, the higher would be the demand for holiday tourism to Kenya. Therefore, good relations between Kenya and tourist generating countries is expected to enhance tourism demand.

Asrin Karimi et al. (2015) try to find the best model to forecast international tourism demand using a series of key macroeconomic variables in ASEAN countries. More and more governments of developing countries try their best to attract FDI for tourism industry. They found find that inflation and real exchange rate have negative relationship with international tourism demand; there is a positive significant relationship between FDI, openness of trade with international tourism demand. This study indicates that FDI, real exchange rate, inflation and openness of trade could be an effective tool, which can predict international tourism demand.

Ogechi Adeola et al. (2018) apply the Poisson regression model to determine the key drivers of international tourism demand in 44 African countries, employing annual data over the period 1995-2015. They found travelcosts and domestic prices are not significant drivers of the decision to travel to Africa. However, taste formation FDI, trade openness and real exchange rate are significant drivers, Infrastructure also is found to be a significant driver of international tourism in Africa, meaningthe more infrastructural provisions in the continent, the more eager tourists are to come and explorethe endowments and opportunities embedded in Africa. Political stability and absence of violencein different parts of Africa have significant effects on tourism demand, meaning that tourists aresensitive to events and trends in the continent before undertaking their trips.

Based on the reviews of previous studies, the author found less papers study the FDI and international trade policies how to influence Chinese outbound tourism demand under "One Belt One Road" initiative, most papers follow the tourism demand theory to select income, relative price, substitute price and some common events (such as SARS epidemic in 2003, financial crisis in 2008).Therefore, the author got the idea used the data from recent years to investigate income, relative price, foreign direct investment and trade openness on Chinese outbound tourism demand under "One Belt One Road" initiative.

2.3. Data

In this study, due to the availability of data, Chinese outbound tourists from mainland China into the top ten OBOR countries, namely Thailand, Singapore, Malaysia, Indonesia, Vietnam, Maldives, Russia, Cambodia, Philippines, Sri Lanka, the period is from 2007 to 2018. All the data is yearly secondary data, Chinese outbound tourist arrivals are collected from World Tourism Organization, the net inflow is collected from National Bureau of Statistics. The income, exchange rate, export and import data are obtained from World Bank Database.

2.4. Model Specifications

In this paper, the power function will be employed into the outbound tourism demand model, because it's better to model the tourism demand than other methods (Song, et al., 2003)), and the power function can be transformed into a log linear function, which can easily apply the OLS. After taking logarithm of tourism demand equation, the estimation of outbound tourism demand from China to these 20 countries is presented below:

$$\ln TA_{ij} = \beta_0 + \beta_1 \ln Y_{it} + \beta_2 \ln P_{it} + \beta_3 \ln FDI_{it} + \beta_4 \ln TO_{it} + u_{it} \quad (2)$$

Where: $\ln TA_{ij}$is logarithm of the Chinese outbound tourist arrivals from the origin to destinations at time t. $\ln Y_{it}$is logarithm of real GDP per capita in original country at time t.

$\ln P_{it}$is logarithm of relative price or $P_{jt} = \frac{CPI_{jt}/EX_{jt}}{CPI_{it}/EX_{it}}$at time t.

$\ln FDI_{it}$is logarithm of FDI to top ten OBOR countries (i) at time t.

$\ln TO_{it}$is logarithm of bilateral trade between these top ten OBOR countries (i) and China or $TO_{ijt} = \frac{(Export_{ijt}+Import_{ijt})}{GDP_{it}}$ at time t.

u_{it}: is independently distributed random error term, with zero mean and constant variance at time t.

β_0, β_1, β_2, β_3, β_4: are parameters to be estimated.

Tourism is a dynamic industry, the current decision of tourists might be influenced by the past behaviors, therefore, the panel ARDL model was proposed by Pesaran et al. (1995) to capture the dynamic feature, in the tourism modelling, the dynamic specification can be written as:

$$\Delta \ln TA_{it} = \alpha_0 + \sum_{j=0}^{q-1} \lambda_j^i \Delta \ln TA_{it-j} + \sum_{j=0}^{q-1} \delta_j^i \Delta \ln Y_{it-j} + \sum_{j=0}^{q-1} \delta_j^i \Delta \ln P_{it-j} + \sum_{j=0}^{q-1} \delta_j^i \Delta \ln FDI_{it-j} + \sum_{j=0}^{q-1} \delta_j^i \Delta \ln TO_{it-j} + \phi_1 \ln TA_{it-1} + \phi_2 \ln Y_{it-1} + \phi_3 \ln P_{it-1} + \phi_4 \ln FDI_{it-1} + \phi_5 \ln TO_{it-1} + \varepsilon_{it} \quad (3)$$

III. RESULTS AND DISCUSSION

In this paper, the testing of all data's stationary by panel unit root test, and by LLC and ADF test method with STATA. The statistical P value will be applied to check, P value must be less than 10% significant level to reject H_0 of having unit root. Panel ARDL approach is assumed mixed levels I (0) and I (1). In this paper the data is stationary at level I (0) or I (1).

Table 1:LLC and ADF Unit Root Test

Variables	Level	LLC	ADF
lnTA	I(0)	-7.2014*** (0.0000)	58.9208** (0.0272)
lnY	I(0)	-4.21892*** (0.0000)	71.0332** (0.0018)
lnRP	I(0)	-8.05172*** (0.0000)	74.0447*** (0.0008)
lnFDI	I(0)	-6.96071*** (0.0000)	58.7752** (0.0280)
lnTO	I(0)	-4.53274*** (0.0000)	93.6907*** (0.0000)

Note: *, **, *** denote 1%, 5%, and 10% significant level respectively

The result of panel unit root tests (LLC test and ADF test) had shown in Table 1, all variables are stationary at 1% significant level under I(0), and confirm the hypothesis of panel unit root tests in all variables. We can find the long-run and short-run relationships for all variables by giving the results of LLC test and ADF test. In order to test long-run and short-run relationship, Pooled Mean Group (PMG) estimator and Mean Group (MG) estimator are applied into the Panel ARDL model, then Perform Hausman Test will be applied to determine the best estimation among PMG and MG, as a result, the Hausman test result is 0.9477, the probability>$\chi 2$ is greater than 5%, therefore, PMG estimator is efficient to test the relationships of all variables in both long-run and short-run.

Table 2 indicated the PMG results of the variables in this paper. Negative ECT means that the speed of adjustment between long run equilibrium and short run movements. The p-values are statistically significant at 1%, therefore, there are long run relationships between the Chinese outbound tourist arrivals and its determinants: the origin countries GDP per capita, relative price and FDI.

For a long term, the results show that the GDP per capita is statistically significant at 0.001, if there is 1% increase in the GDP per capita of the origin countries, the Chinese tourist arrivals to OBOR countries will be increase 1.71%, the result implies that the GDP per capita is important determinants for OBOR countries' tourism demand. The relative price of origin and OBOR countries is significant at 1% so there is a positive long run relationship between the relative price and Chines tourist arrivals. FDI is significant at 1% so it means that if China increases 1% of FDI to OBOR countries, the Chinese tourist arrivals will be increase 0.13%, at the same time, Chinese tourist arrivals also have a relationship in the short term. However, the Chinese tourist arrivals has no any relationship with bilateral trade.

Table2: The PMG Estimator Result

D.lnTA	Coefficient	P value
Long Run		
lnY	1.7079***	0.000
lnRP	2.9506***	0.000
lnFDI	0.1285***	0.003
lnTO	-0.4296	0.380
Short Run		
ΔlnY,D1	0.1974	0.785
ΔlnRP,D1	-0.7480	0.197
ΔlnFDI,D1	-0.0419*	0.043
ΔlnTO,D1	0.0357	0.906
EC	-0.1060	0.100
Constant	0.0323	0.818

Note: *, **, *** denote 1%, 5%, and 10% significant level respectively

CONCLUSIONS

This study is aimed to find the determinants influence the Chinese outbound tourism demand to OBOR countries. We find with the development of "One Belt One Road" initiative, origin' GDP per capita, relative price and FDI have positive influence on Chinese outbound tourism demand into OBOR countries for long run, and the trade openness has no influence, therefore, we can make the conclusion as below:

(1) Income plays an important position on Chinese outbound tourism demand, Chinese economy experienced astonishing growth in the last few decades, and people have more disposables income to travel outbound destinations, with the increase of Chinese income, more and more people would like to travel OBOR countries.

(2) Relative price is important for OBOR countries in attracting Chinese tourists, it has a positive relationship with Chinese outbound tourism demand, in the long run, when the prices increase 1% in the OBOR countries, and Chinese tourists will be increase 2.95%.

(3) Driven by the "One Belt One Road" initiative, China is increasing the foreign direct investment on infrastructure for OBOR countries, and which has become an important part of "One Belt One Road". Therefore, with the increase of China' FDI to OBOR countries, the Chinese tourism demand will be increased to these countries.

REFERENCES

[1] Song, H., Li, G., Witt, S. F., & Fei, B. (2010). Tourism demand modelling and forecasting: how should demand be measured? Tourism Economics, 16(1), 63-81.

[2] Lin, V. S., Liu, A., & Song, H. (2015). Modeling and forecasting Chinese outbound tourism: An econometric approach. Journal of Travel & Tourism Marketing, 32(1-2), 34-49.

[3] Qiong, Z., & Chen, D. (2018). The Study on the Determinants of International Tourism Demand: The Case of Chinese Outbound Tourism to Japan.

[4] Koutsoyians, A. (1991). Modern Microeconomic (2nd Ed.). London: Macmillan Education Ltd.

[5] Ngugi, L. W. K. (2014). An analysis of international tourism demand for Kenya (Doctoral dissertation, Kenyatta University).

[6] Asrin, K., Pouya, F., & Khalid, A. R. (2015). Modeling and forecasting of international tourism demand in ASEAN countries. American Journal of Applied Sciences, 12(7), 479-486.

[7] Adeola, O., Boso, N., & Evans, O. (2018). Drivers of international tourism demand in Africa. Business Economics, 53(1), 25-36.

[8] Song, H., Wong, K. K., & Chon, K. K. (2003). Modelling and forecasting the demand for Hong Kong tourism. International Journal of Hospitality Management, 22(4), 435-451.

[9] DAI Bin, JIANG Yiyi, & YANG Liqiong, MA Yiliang (2013). China's outbound tourism – Stages, policies and choices. Journal of Tourism Management, 58, 253-258.

[10] Pesaran, M. H., & Smith, R. (1995). Estimating long-run relationships from dynamic heterogeneous panels. Journal of econometrics, 68(1), 79-113.

★★★