

The Impacts Of Crisis On State-Level Tourism Demand In Malaysia

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This paper focuses on the changes of state-level tourism demand in Malaysia over three crisis events in Asia, i.e. 2003 SARS outbreak, 2004 Indonesian tsunami and 2005 Bali bombing. Among the 13 states in Malaysia, tourism demand in every state is varied. We find that the four highest demanding states, namely Selangor, Penang, Malacca and Pahang, together with Perak and Terengganu are significantly affected by the crises, with only Penang has positive relationship, but negative relationships are found for the others. We further find that the negative impacts of 2005 Bali bombings towards Malaysian tourism demand are not less than the other two crises although Malaysia is not implicated into the crisis. This may suggest that spillover effect of tourism crisis is possible.

Key words: tourism, crisis, state, Malaysia, demand

Introduction

International tourism is one of the important sources of revenue in directing Malaysian economy to higher growth (Mazumder & Ahmed, 2009). It has become the second largest foreign exchange earner after manufacturing in Malaysia. Since 1987, Malaysian tourism has started to play an important role to support the country's economic growth. It will not be shocked for surpassing manufacturing sector in the time of future. Based on the statistics shown, Malaysia has successfully attracted 23.6 million tourists in 2009 compared to merely 12.7 million tourist arrivals in 2001. The income generated from tourism is recorded as much as RM53.4 billion (US\$16.7 billion), equivalent to 10.2% of GDP in year 2009, compared to 6.8% of GDP in year 2001. According to World Tourism Organization (UNWTO) barometer in 2009, Malaysia was placed into the top 10 countries with the highest international tourist arrivals. The growth in the numbers of international tourists had raised the tourist receipts from RM 7.63 billion in 2001 to RM 17.23 billion in 2009, with an annual growth rate of about 10.75% averagely.

Studies have found that tourism crises from various perspective such as natural disasters, disease outbreak and terrorism are significantly affecting international tourism demand. The studies of Habibi et al. (2009) and Hanafiah &

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Harun (2010) show that tourism crises negatively affect international tourism demand in Malaysia. The study of Lean and Smyth (2009) further suggests that tourism crises have delayed the progress of Malaysian tourism sector in long run. The study in tourism-crisis research is especially critical in the recent years as the number of crisis events has been increased dramatically when comparing to 10 years ago. The investigation on the impacts of crisis is worthy as it may set as a reference for policy makers to make the wise decision from the past crisis events. Empirical analysis is essential to provide a comprehensive insight for developing an efficient crisis management framework to cope with the lost constituted during the turbulent time.

This study tends to examine the impacts of crises on tourism demand in Malaysia. Instead of examining Malaysian tourism demand as a whole, we shed light on the state-level tourism demand which is rarely conducted by the prior studies. The rationale is that in-depth analysis on the impacts of crisis to state-level tourism demand may reveal much more information than studying Malaysian tourism as a whole, for policy makers to target the right markets (the tourism in certain states) to recoup the lost from the other markets during the crisis period. Statistics in figure 1 shows that tourism demand in the 13 states in Malaysia is varied, for Selangor, Penang, Malacca and Pahang are shown the highest demand for international tourists. The question is raised about whether the high demanding tourism destinations (refers to the state tourism) can sustained over the crisis period, or the less demanding destinations have been more badly affected over the crisis. However, our results shows that the impacts of crises are only statistically significant to the tourism demand in the four highest demanding states, together with Perak and Terengganu, with its effects are negative except for Penang showing positive elasticity. For the rest of the states, the impacts are neither significant. The results imply that high demanding destinations in Malaysia are not sustained over the period of crisis, except for Penang, where its diversified tourism products such as nature-based tourism destination like Batu Ferringhi, the world-heritage cultural destination like Clans Jetty, and the urban city in Georgetown are successfully aid to sustain tourism demand over the period of crisis.

Literature Review

The study of Habibi et al. (2009) and Hanafiah & Harun (2010) shed light on the investigation of Malaysian tourism demand determinants. They find a consensus that macroeconomics factors do exert significant influence on Malaysian tourism demand, where income has positive relationship with Malaysian tourism demand, instead, negative relationship is found between price and tourism demand. However, there are another group of researchers tend to carry out in-depth studies on the nature of impacts (whether transitory or permanent) towards tourism demand. Lean and Smyth (2009) study the impacts of Asian financial crisis, Avian flu and terrorism threat on tourism demand in Malaysia. They apply Lagrange Multiplier (LM) unit root tests with one and two structural breaks and find that the effects of crises are only transitory. They assert that tourism demand from Malaysia's major source markets will revert to their long-term growth path following the crisis. Although the effect of crisis is showed transitory, however, Malaysian tourism growth has been slowed down following the crisis. Using autoregressive distributed lag (ADRL) bound test approach, consistently, Salleh et al. (2008) find that Asian financial crisis and the outbreak of SARS have significantly influenced Malaysian tourism demand in short-run with negative effect. The study of tourism crises on tourism demand is

increasingly vital for policy makers as the numbers of tourism crises have been increased in the recent years (showed in the list of tourism crises by Hall (2010)). Although the effect of crises are found transitory, however, it may delay the pace of development in tourism sector, causing the loss in revenue earned for the country.

One may argue that various crisis events are happened almost all the time in every part of the world, the concerns is how would it affect the global tourism sector. Dealing with the crisis events, the power of media industries should not be neglected (Smith, 2005) as it may directly constitute to the public awareness and responses towards the events. The gradual change that does not attract media attention or politician will not constitute to significant impacts on the tourism sector, although they may be significant academically or scientifically. For instance food crisis, population crisis or a climate crisis (Hall, 2010). Tourism crisis can merely be considered, with the condition that the cognate terms security has not to be isolated. Hall *et al.* (2003) give the notion of security to include socio-economic and environmental issues with respect to crisis.

In this study, three tourism crisis events are investigated, i.e. 2005 Bali bombings, 2004 Indonesian tsunami and 2003 SARS outbreaks. Indonesian tsunami in 2004 has brought plausible damages to Malaysia. Lean and Smyth (2009) give the notion that 68 people are died in the incident in Malaysia, with a loss estimated around RM30 million (US\$8 million) in Malaysian states of Penang, Kedah, Perlis and Perak. Although minimal damage in property, island resorts particularly along the tourism belt of Batu Ferringhi in Penang had been challenged by the decrease of international tourist arrivals. There was a 20% cancellation rate following the tsunami due to the fear of aftershocks as Malaysia is located vicinity to the epicenter of the Sumatra earthquake (Anonymous, 2005b). The outbreak of SARS in 2003 however has significantly affected tourism in majority of the countries in Asia, including Malaysia. Statistics indicates that Malaysian tourist arrivals have fallen from 13.2 million in 2002 to 10.5 million in 2003, with the loss of 17.44% of total receipt relative to year 2002. Occupancy rates in Malaysian hotels are as low as 30% in April 2003, and the numbers of airline bookings have recorded of 40% lower than usual. The outbreak of disease can be deemed as the global crisis which is not merely limited to the local region, but the disease is spread uncontrollably to other regions in the world. However, the case of Bali bombings has not been found any evidence to claims that Malaysia is implicated in the crisis event. However, intuitively, as Indonesia is located near to Malaysia, tourists might worry about the spreading of terrorism ideology into Malaysia. We quote the sentence in Putra & Hitchcock (2009) showing that the interconnection of the terrorism event with several countries including Malaysia: "Many analysts moreover link the attacks in Bali to attempts by terrorists to re-organize the modern borders of Southeast Asia to create a substantial Muslim Caliphate, a position steadfastly opposed by the governments of the region, including the country with the world largest Muslim population, Indonesia. Terrorism networks with local agendas that converge with those of al-Qaeda have surfaced with the arrests in Malaysia, Singapore and Indonesia of militants associated with Jemaah Islamiyah (JI) and thus Southeast Asia has emerged as a major battleground in the war on terrorism, which has major implications for the region's important tourism industry". In fact, no studies are found on investigation of the impacts of Bali bombing to tourism demand in Malaysia.

Table 1: Tourism Demand In 13 States From Asean And Non-Asean Countries, 2001-2009

	ASEAN					NON-ASEAN							TOTAL
	Philippines	Indonesia	Thailand	Brunei	Singapore	Australia	Canada	France	Japan	New Zealand	South Korea	US	
Sel&KL	736838.4	4021633	3243982	2057961	30053962	1314216	283154.892	296473.4	1888156	193812.609	661558.36	853984.224	13493808.74
PG	415921.8	3781100	5580739	182016.8	16778516	901885.8	212894.206	137422.4	1154421	108205.274	331495.00	855531.099	13479615.24
Pahang	118252.5	652294.3	933602	426554.2	13952767	398179.5	90872.125	141740.8	433477.8	57597.076	222621.29	266075.919	3314713.324
Melaka	65095.95	1250195	436583.5	237830.5	18269710	401252.3	74432.954	124357	506986.3	55815.178	157779.07	205322.781	3277819.859
Kedah/Perlis	34253.85	426074.8	1708392	151372.3	4678512	223680.7	21283.705	25203.88	142658.3	32437.896	47918.24	87784.832	2749688.26
Sarawak	96472.85	1560091	206836.2	3157777	13296005	279340	35684.547	35106.67	202608.5	39173.435	42622.05	176260.562	2674195.783
Johor	125145.6	1446582	423430.6	183663.7	55339495	141580.2	24832.157	27622.46	274844.5	19667.991	101601.86	74843.493	2660151.232
Sabah	854937	208327.2	228751.8	1909257	5947955	275592.9	38134.758	37645.57	493438.7	62043.899	166710.35	209622.94	2575205.061
Kelantan	22665.03	309137.1	1556780	57500.05	733096.4	75735.08	19884.702	35176.23	123836.6	9525.197	14928.25	47034.858	2214703.237
Perak	34330.86	390797.9	221527.7	134797.9	8202199	99305.29	13309.756	16807.15	107388.1	12787.622	23195.57	81100.617	1000550.543
Terrenganu	31799.21	135572.3	274753.9	86471.54	1476811	116814.9	39077.889	59914.61	83914.98	14619.969	28258.49	78153.023	862879.318
Nsembilan	38466.46	317361.5	147766.3	240381.4	11275352	26983.37	5911.044	4391.604	52029.65	5962.328	20239.10	18206.624	637317.954

Note: The top to down arrangement of the states is made accordingly to the total number of tourist arrivals from the 10 countries in the descending order. Brunei and Singapore are excluded from ASEAN group in the calculation of total tourist arrivals in individual state, as the two countries are located extremely near to only Malaysia (unlike Thailand which are surrounded by others countries), which may create bias for interpreting the actual demand in individual states.

Methodology

As noted by Querfelli (2008), tourism demand could be measured with respect to the number of tourist arrivals. In this study, our studied sample consists of international tourist arrivals from Singapore, Indonesia, Thailand, Philippines and Brunei, Australia, Canada, France, Japan, New Zealand, South Korea and the United States. The numbers of tourist arrivals are collected from Malaysia Tourist Profile for 2001-2009, however, the limitation is that data for 2006 is missing. Macroeconomic data including income, price and exchange rate are obtained from the source of World Bank.

Tourism crisis is said to occur within a specific duration in an identifiable time and space (Ren, 2000). This statement reminds us that time series and cross-sectional information embedded in the data are important to reflect the behavior of tourism demand in Malaysia. The advantage of using panel data is to enhance the quality and quantity of data in ways that would be impossible using only one of these two dimensions (Gujarati, 2003). The panel analysis permits us to study the dynamics of changes in tourist arrivals in Malaysia within a specific time of duration. Moreover, it controls over for the omitted variable bias, given more data information and reduces multicollinearity effects which lead to the accuracy coefficient estimations (Hsiao, 2003).

Based on the previous literature established, tourism demand is likely to be determined by macroeconomic factors such as income, price, exchange rate. Hence, these factors are included in our model (1) to set as the control variables. Dummy variable *CRISIS* is used to act as a proxy for crisis event. Preliminary analysis model thus is expressed as following:

$$ARRIVAL_{it} = \alpha + \beta_0 EX_{it} + \beta_1 INCOME_{it} + \beta_2 PRICE_{it} + \beta_3 ARRIVAL_{it-1} + \beta_4 CRISIS + \varepsilon_{it} \quad (1)$$

where α is a constant, $ARRIVAL_{it}$ is the number of tourists from country i visiting to Malaysia during the year t while $ARRIVAL_{it-1}$ is referred to tourists from country i visiting to Malaysia during the year $t-1$. EX_{it} is the exchange rate of country i currency against USD divided by Malaysian currency against USD in year t ; $INCOME_{it}$ is the GDP per capita of country i during the year t ; $PRICE_{it}$ is the tourism price of Malaysia relative to the country i in year t ; dummy variables *CRISIS* is the dummy variable for crisis with a value of 1 during the year of crisis, and is 0 otherwise. ε_{it} is the random error term.

$$ARRIVAL_{ijt} = \alpha + \beta_0 EX_{it} + \beta_1 INCOME_{it} + \beta_2 PRICE_{it} + \beta_3 ARRIVAL_{ijt-1} + \beta_4 SARS + \beta_5 TSU + \beta_6 BOMB + \varepsilon_{ijt} \quad (2)$$

Model (2) is the extension from model (1) where our dependent variable of $ARRIVAL_{ijt}$ and $ARRIVAL_{ijt-1}$ are the numbers of tourists from country i visiting to the state j during the year t and $t-1$ respectively. Here, 12 states have been analyzed instead of total 13 states in Malaysia since our collected data categorize Kedah and Perlis into one. In model (2), we separate the *CRISIS* variable into three individual crisis event. We define the three crises in the more meaningful way, for which SARS outbreaks is defined as global-implicated crisis where its effect cover a wide range of geographical area; Indonesian tsunami is defined as Malaysia-implicated crisis, where only Malaysia and its nearby-countries have been affected; and lastly Bali bombings

is defined as Malaysia-irrelevant crisis where its effects are less plausibly related to Malaysia. Hence, three dummy variables *SARS*, *TSU* and *BOMB* take the value of 1 for the crisis year, and is 0 otherwise.

Results

Table 2 presents the impacts of crises on tourism demand in Malaysia. The results show that exchange rate significantly and positively influences tourism demand in Malaysia. Positive relationship is found for income factor, but the effect is not statistically significant. This is however consistent with the finding of Habibi et al. (2009). For price factor, significantly negative effects are found. The magnitude of coefficient for the price factor is among the most highest for the macroeconomic variables. This may imply that the prices for tourism products in Malaysia are the key to influence tourism demand in Malaysia. The word-of-mouth effect however show significantly positive impacts on tourism demand in Malaysia. Come to our subject of interest, we find that the impacts of crises significantly and negatively affect tourism demand in Malaysia.

Table 2: The Impacts Of Crises On Tourism Demand In Malaysia.

Variables	Coefficients
CONSTANT	-18.0040 (0.3718)
L_EXCHANGE	1.7279*** (0.0000)
L_INCOME	1.3790 (0.1300)
L_PRICE	-3.8214*** (0.0000)
L_TA(-1)	0.2968** (0.0494)
CRISIS	-0.3977*** (0.0001)

Fixed effect is applied in panel regression. *, ** and *** denote the level of significance at 10%, 5% and 1% respectively.

Table 3 present the impacts of crises on tourism demand in the individual state of Malaysia. We find that only the top four of the highest demanding states (Selangor, Penang, Malacca and Pahang), together with Terengganu and Perak are strongly affected by the crises, which are statistically significant at 1% level. The impacts of crises are negative, except for Penang which shows positive elasticity. We further find that the positive effect of crises on tourism in Penang is only driven by tourism demand from ASEAN. However, the significantly negative impacts of crises on the five states (excluding Penang) are driven by the falling in tourism demand from NON-ASEAN, but rarely being affected by ASEAN tourism demand relatively, while the positive effect of crises on tourism in Penang is only driven by tourism demand from ASEAN (the results are not shown in this paper). Nonetheless, Table 3 shows that tourism in Negeri Sembilan has neither been affected by the three crises studied significantly.

Table 4 presents the impacts of individual crisis event on tourism demand in the 12 states in Malaysia. We find no different results for the three individual type of crisis with the aggregated impacts of crises (represented by *CRISIS*) on ASEAN tourism demand. The findings show that although Bali bombings has not affected Malaysia, but tourists do worry to visit to Malaysia too as Malaysia is located nearby to Bali. This may implies that tourists are very sensitive over their safety when making decision to travel. In sum, we can conclude that the negative effect in terms of tourism demand due to the crisis events may spillover to the nearby countries.

Table 3: The Impacts Of Crises On State-Level Tourism Demand In Malaysia.

State	Crisis
Selangor	-0.6914***
	(0.0000)
Penang	0.4510***
	(0.0045)
Pahang	-0.4452***
	(0.0002)
Malacca	-0.7207***
	(0.0001)
Kedah/Perlis	-0.1607
	(0.4869)
Sarawak	0.0843
	(0.6669)
Johor	-0.2324*
	(0.0803)
Sabah	-0.3724*
	(0.0961)
Kelantan	0.1099
	(0.6777)
Perak	-0.6754***
	(0.0010)
Terengganu	-0.8925***
	(0.0000)
Negeri Sembilan	-0.2877
	(0.2703)

This table only shows the coefficient of *CRISIS* variable for the 12 states, excluding the coefficients for the control variables. Fixed effect is applied in our panel regression. *, ** and *** denote the level of significance at 10%, 5% and 1% respectively

Table 4: Shows The Impacts Of Individual Crisis On State-Level Tourism Demand In Malaysia.

Variable	SARS	TSU	BOMB
Selangor	-0.7487***	-0.5291***	-0.5172***
	(0.0000)	(0.0002)	(0.0000)
Penang	0.5421**	0.3447*	0.4784**
	(0.0213)	(0.0848)	(0.0182)
Pahang	-0.4233***	-0.5310***	-0.4687**

	(0.0060)	(0.0077)	(0.0282)
Malacca	-0.8571***	-0.7406***	-0.8234***
	(0.0004)	(0.0060)	(0.0002)
Kedah/Perlis	-0.0333	-0.5751*	-0.0600
	(0.8941)	(0.0588)	(0.8542)
Sarawak	-0.1854	0.7386*	0.4160
	(0.4695)	(0.0659)	(0.2311)
Johor	-0.2439	0.3945**	-0.6554***
	(0.1165)	(0.0190)	(0.0002)
Sabah	-0.6100	-0.1992	-0.1653
	(0.0405)	(0.5017)	(0.5245)
Kelantan	0.2954	0.0562	-0.6013
	(0.3554)	(0.8955)	(0.1798)
Perak	-0.9129***	0.0662	-0.6366*
	(0.0002)	(0.8521)	(0.0589)
Terengganu	-0.8275***	-0.8865***	-0.9264***
	(0.0000)	(0.0000)	(0.0000)
Negeri Sembilan	-0.4665	0.1445	-0.1491
	(0.1029)	(0.7301)	(0.7452)

This table only shows the coefficient of crisis variables (*SARS*, *TSU*, *BOMB*) for the 12 states, excluding the coefficients for the control variables. Fixed effect is applied in our panel regression. *, ** and *** denote the level of significance at 10%, 5% and 1% respectively.

Conclusion

This study shed light on the impacts of crises (2003 SARS outbreak, 2004 Indonesian tsunami and 2005 Bali bombings) on state-level tourism demand in Malaysia. We find that Asia-based crisis does significantly affect Malaysia tourism demand. On the investigation of the state-level tourism in Malaysia, the top four of the most famous states namely Selangor, Penang, Malacca and Pahang, together with Perak and Terengganu are significantly affected by crises, with its effects are negative except for Penang. However, the positive impacts of crises on Penang tourism is driven by ASEAN tourism demand only; while NON-ASEAN tourism demand is the key to affect the negative impacts of the tourism in the five states. The impacts of crises are not significantly shown for the tourism demand in the rest of the states. In the addition, we find that the negative impacts of crises have spillover effect in terms of tourism demand to the nearby countries. This does imply that tourists are extremely sensitive over their personal safety when making decision to travel.

In sum, the results may first give a notion to policy makers to take into serious consideration of the price factor in Malaysia as this has exerted the most influence to the tourists whether to travel in Malaysia. In the addition, we suggest to policy makers of not belittle every crisis happening in the nearby country although the crisis merely affects the country itself. Policy makers should always be reminded that tourists are very particular about their personal safety, even there is a small chance to threaten their life. More than that, our core findings imply that high tourism demanding destinations are not sustainable during the period of crisis. Policy makers should not pay fully attention to the high tourism demanding destinations, but in fact, effort should put on the low tourism demanding destinations to recoup for the lost following

the crisis. However, tourism in Penang is the exceptional case that is benefited following the crisis. The tourism model in Penang is encouraged to set as a role model to remind the policy makers to diversify and well-develop every tourism products as what has been done in Penang tourism.

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