

The effect of Exchange Rate volatility on Egypt's Inbound Tourism

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Abstract:

Exchange rates in Egypt have always been considered a key indicator in the Egyptian economy throughout the past years. It was the main concern of the consecutive governments to stabilize value of the Egyptian Pound against the foreign currencies, especially US Dollar. The exchange rate in Egypt has been characterized by rigidity for several decades. The Egyptian Pound has passed through a series waves of floatation against the US Dollar since 1977 until 2016. All these waves have left its impact on the Egyptian economy in general and tourism industry in specific. In fact, several studies proved that local currency devaluation stimulate tourist flow to destinations, while in the origin might hinder the outbound tourism flow. Egypt has adapted a massive economic reform programs to stabilize the economy and stimulate economic growth. This was through a set of recovery plans to remedy macroeconomic disparities, through exchange rate floatation, fiscal consolidation, plus structural reforms in energy sector. These reforms have definitely impacted the tourism industry. Egypt has been recorded by WTTC as the first African economy regarding tourism activity in 2019, because Tourism contributed to about US\$29.5 billion of Gross Domestic Product (GDP). Moreover, this research aims to investigate the impact of exchange rate volatility on the inbound tourism in Egypt through the period from 1989 to 2019. This research will examine whether the exchange rate volatility is directly related to increasing the number of inbound tourism or not. The research address the extent of the causal relationship using regression analysis for the five tourist generating regions. Since the research examines a causal relationship regression analysis was selected.

Keywords: Exchange Rate Volatility, Egypt, Inbound Tourism, Regression Analysis

1. Introduction

The Egyptian economy is encountering a massive process of structural reforms due to the

sharp decline in economic indicators in the aftermath of the 2011 Revolution. This process has been reflected on all the economic sector, its main aim is to enhance competitiveness in global markets and improve the society's welfare. The structural reforms embrace currency floatation, reducing subsidies on energy sources, decreasing imports by imposing tariffs on them, and other fiscal consolidation issues. These reforms have stimulated economic growth rates, generated substantial budget surplus, decreased the ratio of Debt to GDP, and induced foreign currency reserve. As a matter of fact, exchange rate has been considered as a main indicator of the Egyptian economy performance. It is believed to be an important economic issue affecting all aspects of life. This is due to the fact that Egypt depends on Suez Canal Revenues paid by US Dollar (USD), tourism, remittance from Egyptians working abroad and of course the international trade activity (most of the production utilities are imported). All this make the Egyptian government relying extensively on foreign currency provisions and thus foreign currency supply in the market. Additionally, most of foreign currency supply in the market is in USD.

As a matter of fact, exchange rate volatility since its early beginnings in Egypt has been considered as a domestic currency (Egyptian Pound- EGP) devaluation process. After the currency floatation process undertaken by the Egyptian government in 2016, EGP has lost 50% of his value against the USD. The main aim of this process was to enhance the confidence in the economy, beside it was an essential step in the reform program. Additionally, it was a primary requirement for the loan provision from the International Monetary Fund (IMF).this process has impacted all sectors of the economy.

Furthermore, exchange rate volatility occurs as a consequence of a number of elements such as

the sharp depreciation of the currency, a large decline in foreign reserves, increase in interest rates or a combination of these factors. Managing exchange rate volatility has been a major challenge facing developing countries, including Egypt. For countries depending largely on foreign trade like Egypt, during periods of excessive volatility in exchange rate, foreign trade and investments are influenced. Therefore this impact the overall macro-economy variables such as the real GDP growth, inflation rate and interest rates.

One of the sectors that was influenced is the tourism industry. Tourism is widely known as a primary source of foreign currency. The tourism industry performance is influential to the Egyptian economy. Since reaching its peak numbers in 2010 by 13 million tourists, Egyptian tourism has been suffering from sharp fluctuations in numbers due to the political turmoil prevailing and issues related to tourist security. As a matter of fact, several studies have stated that the key important economic determinants influencing inbound tourism are disposable income, tourism products prices, substitute destination prices, and exchange rates (Song and Li, 2008). However, the prices of tourism products are a dominating factor for inbound tourism. Several research findings concluded that tourists are sensible to exchange rates fluctuation (Önderet al, 2009; Patsouratis et al, 2005).

Moreover, this was not the first process for currency floatation. EGP has passed through a series waves of floatation against the USD since 1977 until 2016. The main concern of this research is that currency devaluation leads to rise of prices of imported products and domestic products using imported raw material, thus increasing rate of inflation. All these waves have left its impact on the Egyptian economy in general and tourism industry in specific. In fact, several studies proved that local currency devaluation stimulate tourist flow to destinations, while in the origin might hinder the outbound tourism flow. Each wave of floatation has its unique circumstances and yielded different outcomes on the economy. Therefore, this research aims to investigate the impact of exchange rate volatility on the inbound tourism in Egypt through the period from 1999 to 2019. This research will examine whether the exchange rate volatility is directly related to increasing the number of inbound

tourism or not. The research address the extent of the causal relationship using regression analysis for the five tourist generating regions. Since the research examines a causal relationship regression analysis was selected.

2. Literature Review

Worldwide Exchange rates have fluctuated greatly especially after the collapse of the Bretton woods system of fixed exchange rate (Srinivasan and Kalaivani 2012). Excessive fluctuations have been noticed in the currency prices of different countries causing major uncertainties. Since the Bretton Woods system collapse, the majority of influenced countries created a flexible floating exchange rate system (Chaudhary et al, 2012). The alteration in the exchange rate regime from fixed to floating exchange rate system in 1983 caused a sharp increase in exchange rate volatility and this had a substantial impact on economic growth, capital investment and international trade activity (Insah and Chiaraah, 2013). According to Mohr et al (2008), fixed and floating exchange rate systems are two kinds of exchange rate. Some countries use the fixed exchange rate system, while other countries use the floating exchange rate system. In fact, fixed exchange rate system does not fluctuate overtime, while floating exchange rate system is continuously changing (Rishipal and Jain, 2012).

According to the UN World Tourism Organization (UNWTO), it stated that Egypt's tourism sector witnessed remarkable growth rates 21% in 2019. Egypt received 13.6 million tourists (UNWTO, 2020). In fact, Egyptian tourism is key source of income counting for approximately 12% of GDP. The inbound tourism revenues reached its highest value of 12. USD billion. Egyptian tourism has suffered for nine years of decline since its last up rise in 2010 (see Figure 1 and Table 1). Generally, tourism is sensitive to unexpected political and economic issues prevailing on national and international scale, security and safety issues, social issues and definitely exchange rates volatility (Kim and Wong, 2006). Moreover, previous empirical research found that devaluation or depreciation of exchange rate in a country attract inbound tourism, while reducing outbound tourism from it. Exchange rate appreciation in a country

decrease inbound tourism and increase outbound tourism (Agiomirgianakis 2014, Song and Li 2008). As a matter of fact, tourists are highly concerned with exchange rates in destinations because they use it to calculate their cost of living during their stay and transportation cost to the destination (Stabler *et al.* 2010). Additionally, exchange rate volatility might cause a spillover effects on inbound tourism and this is due to the uncertainty of tourists travel decisions (Chang et al, 2009).

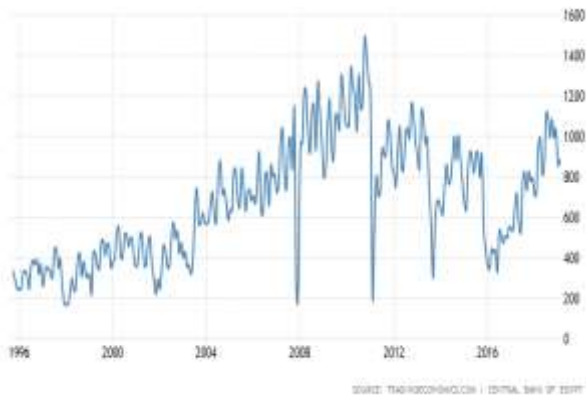


Figure 1: Fluctuation in Inbound Tourism to Egypt

Table 1: Number of Inbound Tourist and associated Tourism Revenues in Egypt

Year	Inbound Tourists (Million)	Tourism Revenues (USD Billion)
1999	4,490,000	4,361,000,000
2000	5,116,000	4,657,000,000
2001	4,357,000	4,119,000,000
2002	4,906,000	4,133,000,000
2003	5,746,000	4,704,000,000
2004	7,795,000	6,328,000,000
2005	8,244,000	7,206,000,000
2006	8,646,000	8,133,000,000
2007	10,610,000	10,327,000,000
2008	12,296,000	12,104,000,000
2009	11,914,000	11,757,000,000
2010	14,051,000	13,633,000,000
2011	9,497,000	9,333,000,000
2012	11,196,000	10,823,000,000
2013	9,174,000	6,747,000,000
2014	9,628,300	7,979,000,000
2015	9,139,000	6,897,000,000
2016	5,258,000	3,306,000,000
2017	8,157,000	8,636,000,000
2018	11,196,000	12,704,000,000
2019	13,600,000	12,974,000,000

Source: Central Bank of Egypt

As previously mentioned, Egypt has passed through several waves of exchange rate volatility

(see Figure 2). The first real currency floatation was executed implicitly in 1977 by President Sadat accompanied with other sets of strict procedures leading to Egyptian bread protests. EGP lost 50% of its value during this period Egypt was suffering from budget deficit due to the seven year war (1967- 1973) with Israel. The Egyptian government used external borrowing to pay its debts, through an initiative known as “Paris Club Debts”. This increased later in the eighties due to failure in government budget balancing, insufficient Arab direct investment and economic inactivity. Additionally, the private sector went to bankruptcy due private sector borrowing loans in USD. This resulted a USD crisis, causing it to rise from 0.4 to 0.8 EGP. Thus, the local currency lost a substantial percentage of its value (Seliem, 2010).

The second phase took place in 1990s, Egypt has adapted an adjusted exchange rate policy. The government has set a fixed exchange rate for EGP in relation to USD. The Egyptian pound jumped from 1.1 to 2 EGP per 1USD. This caused an increase in foreign currency reserve. Later on, the government has adapted an economic reform program. This program has changed the exchange rate policy from fixed policy to a managed floatation policy resulting the value of USD to rise to 3.4 EGP (Massoud and Willett, 2014). These reforms caused major changes like cancelling interest rate ceiling and several policies that hindered efficient resources allocation, banking system financial restructuring and reducing the restrictions imposed by the Central Bank of Egypt (CBE) to finance treasury deficits (Mabrouk. and Hassan, 2012).

The third phase was from January 2001 to December 2002, EGP has been through a devaluation process three times. First, CBE has executed a new exchange rate system, it was reduced to 3.85 EGP per 1 USD. Second, after 9/11 terrorist attacks in USA, EGP lost a percentage of its value reaching 4.15 EGP per 1 USD. Third, this was the massive wave occurring because the drastic impacts of 9/11 continued and Egyptian tourism continued to decline sharply. This has forced the Egyptian government and CBE to reduce the value of EGP. This decision resulted the devaluation of the EGP in front of the USD by 50%. It reached

5.50 EGP per 1 USD, followed by another decline to 7 EGP per 1 USD, finally it stabilized at 6.20 EGP per 1 USD. This decisions has caused a drastic increase in price level (Kamar and Bakardzhieva, 2005).

In 2007, the Egyptian economy has reflected positive indicators, due to some external factors like positive net exports, increasing flow of foreign direct investment and increasing inbound tourism. This has led to the appreciation of the local currency. However, in 2008 and 2009, as a result of the global financial crises and deficit in current account, the value of the EGP has depreciated (Central Bank of Egypt, 2008; World Bank, 2009). Additionally, in 2011, after the political unrest faced by Egypt, the exchange rate has been under continuous pressures and forces. The EGP has been depreciated gradually due to negative unstable economic conditions and loss of the sources of foreign currency reserves. This was due to the sharp decrease in GDP, foreign direct investment (FDI) and inbound tourism (ALEXBANK, 2011; Central Bank of Egypt, 2012). Consequently, EGP has continued to lose its value, the budget deficit continued to increase and the financial burdens due to subsidized products offered to the local community continue to rise. All this has forced the Egyptian government to execute the fourth and most influential process of local currency floatation.

2002	4.49966
2003	5.85.875
2004	6.196241
2005	5.778833
2006	5.7331667
2007	5.6354333
2008	5.4325
2009	5.5445533
2010	5.62194292
2011	5.93282765
2012	6.05605833
2013	6.870325
2014	7.07760856
2015	7.69125833
2016	10.0254008
2017	17.7825335
2018	17.7672904
2019	16.7705818

Source: Central Bank of Egypt

Furthermore, there are different point of view concerning measuring the impact of exchange rate volatility on inbound tourism. Some authors use consumer price index (CPI) and others use exchange rates and their impact on prices of tourism products (Rossello et al, 2005; Wang, 2009). However, it has been concluded from the majority of research conducted that inbound tourists decide their travel experience based on exchange rates between currencies in origin and destinations (Witt and Martin, 1987). That is the main reason behind considering exchange rate as a key determinant for travel. In spite of this, studies measuring the impact of exchange rate volatility on inbound and outbound tourism are equivalent to the importance of the topic. The few studies conducted proved that exchange rate volatility influence tourist expenditure in the destination.

Additionally, exchange rate volatility has a significant impact on long term tourism demand in half of the countries studied (Webber, 2001). In their two studies Chang and McAleer (2009 and 2012) utilized different techniques to test the relationship between volatility and international tourist arrivals. They explored that exchange rate volatility has a tremendous impact on international tourist arrivals. They have a positive direct relationship (Chang and McAleer, 2009; 2012; De Vita and Kyaw, 2013). Indeed, exchange rates have been found a significant determinant for tourism



Figure 2: Phases of Exchange Rate Fluctuation in Egypt

Table 3: Exchange Rate (EGP to USD) in Egypt

Year	Annual Real Exchange Rate (EGP to USD)
1999	3.39525
2000	3.47205
2001	3.973

growth in South Korea and Taiwan (Chen, 2008). Eventually, it is clear in most of studies conducted that exchange rate volatility influence the selection process of tourism destinations and thus tourist decision making process (Dwyer, et al., 2002; WTO 2008).

Chao et al. (2013) tested how currency depreciation affects the flow of inbound tourism. They illustrated that the exchange rate is a dominant factor in the volume of tourists received by a country. Additionally, they stated that increasing domestic prices (i.e. rate of inflation) can be reflected on foreigners, through tourists and their consumption patterns during their stay in the destination. Therefore, the depreciation of the domestic currency reduce the revenue of inbound tourism in local currency. Currency volatility not only influence the tourist's expenditure but tourist arrivals, and in the long run the revenues will be affected.

3. Research Methodology

This research aims to investigate the impact of exchange rate volatility on the inbound tourism in Egypt through the period from 1999 to 2019. This research will examine whether the exchange rate volatility is directly related to increasing the number of inbound tourism or not. The research address the extent of the causal relationship using regression analysis for the five tourist generating regions (see Table 4). Since the research examines a causal relationship regression analysis was selected.

Table 4: Market Share of Tourist Generating Regions

Tourist Generating Region	% of Market Share
Europe	65%
Middle East	18.5%
Africa	7%
Asia	5.3%
Americas	4.2%

The following regression model will be adapted

$$IT_t = a_0 + a_1CPI_t + a_2GDP_t + a_3ERV_t + a_4D + e$$

This equation represent the following variable:

IT_t is the volume of inbound tourism during the period of study

CPI_t is the consumer price index in tourist generating region during the period of study

GDP_t is the GDP per capita in tourist generating regions during the period of study

ERV_t is the ERV in destination during the period of study

D is the political instability dummy variable during the period of study

e is the error factor

Annual average exchange rate of the Egyptian pound in relation to US dollar and annual number of inbound tourism from selected number of tourist generating countries are utilized to measure the impact of exchange rate volatility on inbound tourism in Egypt. These tourists generating countries are selected in the sample according to their market share in the Egyptian tourist market. Data are analyzed using SPSS22 and statistically significant causal relationship has been proved. This research has presented the extent of this causal relationship utilizing the regression equation.

The numbers of annual inbound tourists were taken from the Central Bank of Egypt (CBE). The data include annual number of tourists among the world regions (see table). In fact, the data has been distributed among world regions because several countries have a scattered market share. The countries dominating the tourism market share are the European countries. Additionally, regions were selected because there is variation in region's countries structure across the years; since it is a long time interval. Since US dollar is the commonly utilized foreign currency in Egypt; therefore the annual US dollar exchange rate was obtained from CBE. The data covers the period from 1999 to 2019.

As a matter of fact, tourism is a volatile industry. It is directly influenced by political instability, safety and security issues and others. Beside this it is a characterized by seasonality. These factors are reflected in the time series revealed data (Witt and Moutinho, 1994). However, this research use annual total number of inbound tourists, and it is adjusted to seasonality. Additionally, since Egypt passed through a period of political instability causing turbulent security and safety issues in the aftermath of 2011, external impacts were considered and justified by researcher during some years analyzed

This research empirical model examine the following hypotheses:

- H1: The volume of inbound tourism is negatively related to CPI in the tourist generating region ($a_1 < 0$).
 H2: The volume of inbound tourism might be positively to GDP per capita in the tourist generating region ($a_2 > 0$).
 H3: The volume of inbound tourism might be positively related to ERV in Egypt ($a_3 > 0$)
 H4: The volume of inbound tourism might be negatively impacted by political instability ($a_4 < 0$)

4. Analysis and Results

First of all, the researcher tries to find the ERV impact on inbound tourism classified among the regions. According to the results of SPSS presented in Table 5, the regression model has the following F-ratio of the five regions with individual p -values selected and the indicator of statistical significance. The results show that all the regions have statistically significant regression models that show a causal relationship between exchange rates and volume of inbound tourism.

Table 5: Regression Model Results according to Tourist Generating Regions

Generating Region	Coefficient	F-Ratio	Adjusted R^2	Sig.
Europe	95.27	28.83	0.724	.000
Middle East	82.34	19.31	0.864	.000
Africa	15.88	7.91	0.468	.000
Asia	36.14	9.05	0.388	.000
Americas	19.47	6.35	0.227	.000

From Table 5, it is observed that an increase in ERV_t increase the volume of inbound tourism from the five regions. This is reflected in the positive coefficient values. This implies that for every one-percentage point increase in ERV_t , an extra 96.00 inbound tourist from Europe will visit Egypt. This also states that for every one-percentage point increase in ERV_t , an extra 83.00 inbound tourist from Middle East will come to Egypt. Then, for every one-percentage point increase in ERV_t , an extra increase of 16 inbound tourist from Africa; 37.00 inbound tourist from Asia and finally 20.00 inbound tourist from Americas.

From Table 5, the F value determines that the test is statistically significant. The high values of F- ratio provide more explanatory power. The value of adjusted R^2 is essential to adds precision and reliability to the analysis. This is done by considering the impact of additional independent

variables that tend to skew the results of R^2 measurements. It indicates the extent of the variance of the dependent variable, which can be explained by the independent variable. The adjusted R^2 values this regression implies that the independent variable explains a substantial variation in the dependent variable. Table proves that volume of inbound tourism from the different five tourist generating regions is positively impacted by the exchange rate volatility. In the case of Egypt, the free floatation of exchange rate increased the inbound tourism. Indeed, it is translated as domestic currency (Egyptian Pound) depreciation, thus reducing the prices of tourism products in the destination.

Multiple regression runs were performed in order to identify the ERV impact on inbound tourism to Egypt, as reflected by coefficient a_3 in the regression equation in (1). This research hypothesized a_3 to be positive. Estimates of a_3 for total number of inbound tourists are presented in Table 6.

Table 6: Estimates of a_3 values for Total Tourists

Year	Estimated Value of a_3	p- value	Sig.
1999	30.39	0.0116	0.050
2000	34.70	0.0486	0.050
2001	39.09	0.3830	0.050
2002	44.76	0.0109	0.050
2003	58.90	0.0403	0.050
2004	61.90	0.0476	0.050
2005	57.78	0.0344	0.050
2006	58.90	0.0312	0.050
2007	66.36	0.0416	0.050
2008	78.96	0.0432	0.050
2009	68.32	0.0256	0.050
2010	79.23	0.0319	0.050
2011	-16.98	0.0196	0.050
2012	43.08	0.0278	0.050
2013	-15.76	0.0164	0.050
2014	-43.69	0.0260	0.050
2015	24.32	0.0380	0.050
2016	-29.80	0.0238	0.050
2017	67.90	0.0219	0.050
2018	79.01	0.0331	0.050
2019	77.87	0.0347	0.050

NB: There is 5% significance level

The results reported in Table 6 suggest the positive values of a_3 in all years except 2011, 2013, 2014 and 2016. This capture attention because the exchange rate was relatively constant. Indeed, P values indicates that the hypotheses test results are statistically significant. The small p -value (typically

≤ 0.05) shows a strong evidence with the hypothesis. In fact, the negative values presented in Table 6 means that another independent variable impacted the volume of inbound tourism. During these years, Egypt was witnessing its maximum level of political, safety and security unrest.

Other explanatory variables tested due to their expected statistical significance effects on the dependent variable, volume of inbound tourism to Egypt. As mentioned earlier, multiple regression analysis were used. Table 7 report the regression results where the coefficient a_1 has the lowest p-values.

Results presented in Table 7, show that all coefficients were found to be statistically significant at a 1% level, except for ERV_t and volume of inbound tourism, which were statistically significant at a 5% level. The R^2 and adjusted R^2 are high (low to mid-80%) and the F-statistics are statistically significant at a 1% level or better, as presented by extremely low p-values.

Table7: Testing of all Variables

Dependent Variable= Volume of Inbound Tourism In Egypt				
Explanatory (Independent Variable)	Coefficient	Standard Error	T-Statistics	P-Value
CPI_t	-636.78	228.90	-3.48	0.000271
GDP_t	570.64	4125.23	4.78	0.000188
ERV_t	865.24	95.23	2.10	0.038384
D (Dummy for Political Instability)	-9292.52	3095.51	-3.00	0.003396
R^2		0.8617		
Adjusted R^2		0.8276		

From Table 7, it is observed that a decrease in Consumer Price Index (CPI) in the tourist generating region CPI_0 increase the volume of inbound tourism. This is reflected in the negative value of a_1 of about -637.00. This implies that for every one-percentage point decrease in CPI_0 in tourist generating region, an extra 637.00 inbound tourist will visit Egypt. It is explored that an increase in GDP_t per capita in the tourist generating region, encourages inbound tourist flow to Egypt. This is reflected by a positive estimated for a_2 of approximately 571. This means that, for every one-percentage point increase in GDP per capita in tourist generating region, an additional 571 inbound tourist will visit Egypt.

The research empirical model shows a negative impact of the political instability witnessed

in Egypt on the volume of inbound tourism. As a matter of fact, the number of inbound tourist decreased during years of political turbulence. This is reflected in negative value of a_4 presented in Table 7. Additionally, it is reflected in Table related to ERV_t and its value across the years of study. It has been noticed that there was a negative relation between ERV_t and volume of inbound tourism in 2011, 2013, 2014 and 2016. This is elaborated as a consequence of political instability prevailing in the country causing safety and security issues.

5. Conclusion

After analyzing the data using regression analysis, all hypotheses have been proven. First, there is a negative relationship between the volume of inbound tourism and the CPI in the tourist destination. This means that as the CPI decrease the volume of inbound tourism increase. Second, it has been proven that the volume of inbound tourism is positively related to GDP per capita in the tourist generating region. As the GDP per capita in the tourist generating area, increases the volume of inbound tourism increases. Third, the volume of inbound tourism is proved to be positively related to exchange rate volatility in Egypt. Exchange rate volatility means the floatation of the domestic currency. As a matter of fact, in Egypt exchange rate volatility is always seen as EGP depreciation, thus increase volume if inbound tourists. This is due to cheap prices of tourism products in the destination. Fourth and finally, the volume of inbound tourism is negatively impacted by political instability. Indeed, political instability in Egypt has caused sharp decline in volume of inbound tourism. This is also reflected in the drastic fall in the number of tourists in certain years that has been characterized by the maximum time of political, safety and security turbulences.

The overall research results have an essential implication. In fact, the use of other explanatory variable was needed. This is in order to examine other factors (GPP per capita in tourist generating regions, CPI in destination and the political instability) impact on inbound tourism in Egypt. This is to check the value of impact in relation to other variables. Exchange rate volatility has the highest impact among variables. Additionally, extra analysis has been

conducted to examine the exchange rate volatility impact on inbound tourists from different regions. However, it has been proven that exchange rate volatility has an impact on inbound tourism in general no matter their originating region is. In conclusion, researchers and policy makers should consider exchange rates when formulating and implementing tourism policy in any tourism destination. Indeed, various aspects of exchange rate could influence tourism in different methods, which is why researchers should use new techniques to examine and analyze it using different variable and test additional impacts of exchange rate to tourism.

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