The Exchange Rate Fluctuations and its Effect on International Tourism Demand Case study: Egypt, the period (2000-2016)

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ABSTRACT

Egypt is one of the top tourism destinations in the world and the tourism industry has become an indispensable source of income, tourism is an important industry, especially for tourist receiving countries where tourism is a major source of foreign exchange earnings. The recent exchange rate fluctuations in Egypt have been a matter of concern for the top leadership in the country particularly tourist policymakers.

The main objective of this paper is to explore the impact of exchange rate fluctuations on Tourism magnitude coming to Egypt and the Competitive tourism sector by reviewing the current situation of the Egyptian tourism sector compared to other countries in the world using time series analysis techniques, and reconnaissance study on tourists coming to visit the most important tourist sites in Egypt regions of Luxor, Aswan and South Sinai, where a random sample of 400 tourists from the eight most important nationalities (Germany, Ukraine, Britain, Italy, United States, China, Russia and Saudi Arabia).

The authors apply time series analysis techniques and reconnaissance study, the results show the real effective exchange rate is statistically significant and negative impact, but low explanatory power of the independent variable indicated the presence of other determinants

influenced the situation of Egypt's competitive finding that it is a major factor in the determination of tourist arrivals. They also analysis the impact of several de facto exchange rate arrangements on tourism, finding that less flexible exchange rates promote tourism.

For the period 2000 - 2016 are investigated using time series analysis and reconnaissance study results clarified that the real effective exchange rate is statistically significant and negative impact which is confirmed by economic theory that the increase in exchange rate lead to a decrease in foreign tourist demand.

Keywords: Exchange rates, Tourism, Time series analysis, Egypt competitive situation.

INTRODUCTION

The study of exchange rate fluctuations and its effect on international tourism demand is an important subject in order to identify and clarify the factors and effected determinants on the tourist activity of a specific destination, so the International Monetary Fund (IMF) defined the exchange rate is the price of one currency expressed in terms of another currency, so we have two conventions first E: Price of home currency in terms of foreign currency and R: Price of foreign currency in terms of home currency. (Govil, 2014)

$$E = 1 / R$$

Also the real exchange rate definition is when R_t increases (a real exchange rate appreciation), the domestic consumption basket becomes more expensive than the foreign basket.

$$\Delta R_t \% = \Delta P_t \% - (\Delta P_t^* \% - \Delta E_t \%)$$

R_t = Foreign currency
P^*= the foreign price level
E_t = the nominal exchange rate
P_t= the domestic price level

Second important definition the tourist demand is defined Total buyers are willing and able to buy the amount of tourist services at a certain price and within a specified period of time (Orchard & Glen & Eden, 1997), also tourist demand defined as the group of goods and services consumed by tourists in specified period, where the tourist demand is known as a group of tourism products that the consumer's visitors wants to obtained it in a certain time and specific circumstances, controlled by the explanatory factors used in the demand function. (Song & Witt, 2000).

The tourism demand is generally measured by using one of the following indicators (bin Abdulrahman, 2016a):

- Number of arrival tourists.
- Tourism revenues.
- Length of residence or number of tourist nights.

The monetary approach (financial), is the most suitable for modeling tourism demand in its economic dimension however, the most commonly used measure is the number of arrival tourists due to the difficulty in obtaining relative data on tourist revenues as well as the difficulty of obtaining all deals of a tourist feature; where there are many factors that can effect on the tourist demand for a certain destination, but the most important variables are those variables followed to the classical theory of demand and represented by tourism revenues and the prices of tourism services . (Proenca & Soukiazi, 2005).

Middleton summarizes the determinants in economic factors and relative prices, demographic factors, geographic factors, social and cultural attitudes of tourism, mobility, government / organization, media and Communications, environmental information technology and the demand for more sustainable forms of tourism, International political developments and terrorist acts; but also the exchange rate is among the most important economic determinants affected on the demand for tourism exports, The increasing exchange rate of the Egyptian pound against foreign currencies leads to a decrease in local exports Including tourism because their prices become high in exchange for competitive external prices, and for that the demand for local exports will decrease, in the case of a decreasing of the exchange rate of pound against foreign currencies, the prices of tourist exports will decrease compared to the external prices and become more competitive and the demand will increase.(vanhove, 2011).

The exchange policy is a group of specified measures or arrangements by governments to control the exchange rate, in order to facilitate the achievement of macroeconomic objectives, including the purchase. sale of currencies and the local currency in the exchange market, where their application id different from weak currency policy and strong currency policy, The weak currency policy is to devalue the current monetary system, this mechanism is based on the theory of critical flexibility for (Marishall - lerner), and the devaluation helps to restore trade balance, as far as the strong currency policy is intended to revalue the currency, which increases export prices and decreases import prices, whereas increasing export prices lead to improve competitiveness through increasing productivity, the exchange policy directly affects the tourism. (Ghadban, 2013a)

Exchange rate fluctuations affect international tourism operators who fall into two categories, international tourists and the tourism companies. The acceptable exchange rate and the unacceptable exchange rate may incite or versa to restrain local tourists in their travel abroad, as the change in the exchange rate in the receiving country may change the selection of tourists to the destination, and the decision of international tourists is according to the attractiveness of prices, whatever inflation policy. (Ghadban, 2013b)

The regions of Luxor, Aswan and South Sinai in Egypt are one of the most important tourist attractions, due to the originality and diversity of its natural and cultural heritage (archaeological regions, customs and traditions, cultural celebrations ... etc), thus these regions are targeted by foreign tourists, in this regard, it is important to study the impact of the exchange rate on the international demand to the Arab Republic of Egypt in order to identify and clarify the determinants affecting tourism activity and demand in these regions through an exploratory study was also conducted on this subject, Where the most important seven countries in the world in terms of ranking of exporting countries of tourism to Egypt, according to data from the Central Agency for Public Mobilization and Statistics, was selected a random sample to learn how to choose their tourist destination.

THE PROBLEM OF THE STUDY

The recent exchange rate fluctuations in Egypt have been a matter of concern for the top leaderships in the country, particularly tourist and economic policymakers. Although there are many studies that measure and analyze the impact of exchange rate on tourism demand, as Egypt has showed during the past five years a large fluctuation in exchange rate, as well in tourism demand was imbalanced, which shows a conflict with the economic theories of exchange rates. This requires further study of the situation in Egypt; analysis economic and tourism indicators, especially with regard to the subject of this paper.

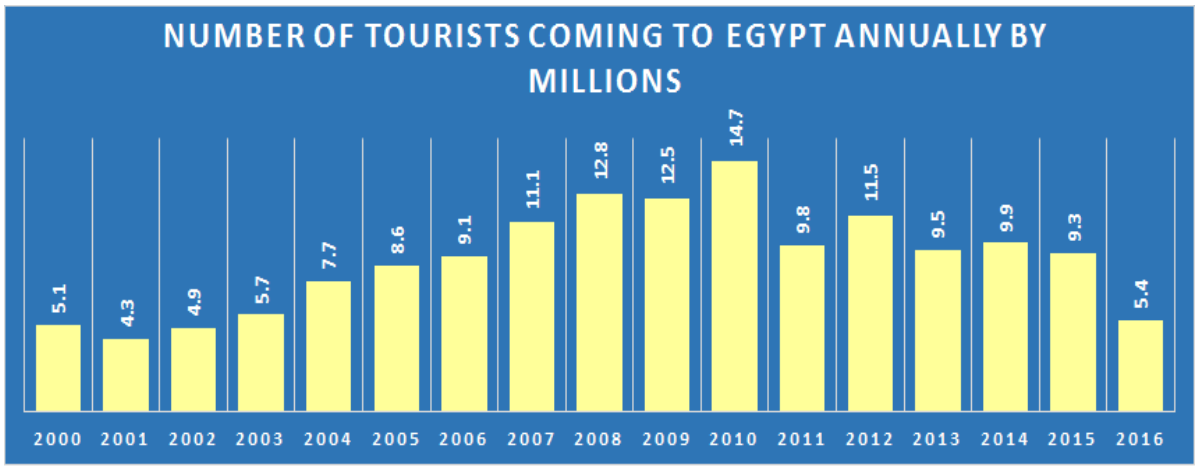
So the main question of the study is "Are the exchange rate is statistically significant? and Had they have a negative effect which is confirmed by the economic theory (the increase in the exchange rate lead to a decline in foreign tourism demand)? The Coefficient of determination shows that the model has no good interpretive ability".

IMPORTANCE OF THE STUDY

The exchange policy followed in Egypt during the period of study significantly reduced the impact of the consecutive rising in the internal prices of Egypt so, it reduced the cost of living of foreign tourist, thus contributed to stimulate the international tourism demand arrival to Egypt (with its three indicators), except for the period (2003-2006 and 2011-2014) which attended the applicability of the liberalization policy dealing with foreign exchange, It was noted that despite the decline in the exchange rate of the Egyptian pound in 2003, the international tourist demand arrival to Egypt has increased, while the period from 2004 to 2006, during which the Egyptian pound exchange rate has increased slightly, we found that demand is also increasing, which leads to the conclusion that the international tourist demand coming to Egypt is affected by several factors including the change in the exchange rate of the Egyptian pound, While the period from 2011 to 2014, both of the exchange rate and tourism demand have decreased.

Egypt is one of the oldest civilizations on earth and one of the most important tourist destinations in the world for its excellence in the abundance of tourist attractions of all kinds, the spread of temples, museums, monuments, historic and artistic buildings and vast gardens on its land, and possess a strong infrastructure based on serving the tourism sector including hotel rooms, villages, tourist resorts, in addition, UNESCO selected six cultural heritage sites in Egypt, including ancient Egyptian, Coptic and Islamic sites, as well as a natural heritage site in the list of World Heritage sites, tourism in Egypt is one of the most important sources of national income in terms of its revenues from foreign currency to contribute significantly to the gross domestic product and to combat unemployment. The number of tourists to Egypt reached 14.7 million in 2010 and the revenues amounted to one and a half billion dollars, the study of exchange rate fluctuations and its impact on tourism demand Topics should be studied carefully to try to attract more tourists and contribute to the recovery of the economy. (UNESCO, 2017).

Figure No. (1)



The Figuer shows that the number of tourists between 2007 and 2010 was constantly increasing, that could be a result of security and stability that have been achieved by Egypt. While the number of tourists between 2011 and 2016 was decreasing, that is clearly because the terrible situations Egypt was passing through. However, after Egypt has recovered there's an increase of the rate of tourism which would be noticed in future

Hypotheses of the study

1- There is a relationship between changes in the exchange rate and the demand for tourism.
2- The increase in the exchange rate lead to a decline in foreign tourism demand.

PREVIOUS STUDIES:

A study Mohamed Bouzahzah, Younesse El Menyari, take the international tourist demand guided to Morocco for the three essential nationalities is France, Spain, Germany in the extended period (2000-2009), the results showed that the influx of international tourism is positively affected by income, housing and exchange rates, and is negatively affected by the rate of relative price and external shocks. (Bouzahzah & El Menyari, 2013)

A study of PhD thesis was discussed in 2013 at the University of Toulon in France for Socrat Ghadban which studied the impact of the exchange rate on tourism demand, where tourist revenues were selected as an indicator of the measurement of tourism demand for the period 2000 – 2010, and its results showed that the exchange rate has a statistically significant impact on French tourism revenues by taking a fixed value of the number of arrival tourists and the price of oil, which the change with parentage of 10% in the annual nominal exchange rate leads to a reduction of tourism revenues by 4.2 billion euros, which is a considerable value.(Socrat,2013).

A study Akay, Cifter and Teke examines the effects of the exchange rate and income on Turkish tourism trade balance (TB) using quarterly data for the period 1998–2011, the authors use tourism trade-weighted exchange rate indices and foreign income derived from country-based tourism trade, they employ income on tourism, and employ an error correction model to analyse the short-run effects. The empirical results suggest that income is the most significant variable in explaining, tourism TB in the long run, the exchange rate and foreign income positively affect the TB, while domestic income negatively influences it. In the short-run, domestic income is the only significant factor, the authors also find no evidence of a J-curve effect in the Turkish tourism TB, and these findings are robust to using nominal values. this note employs Johansen's maximum likelihood technique to show the long-run effects of real exchange rate and real income on tourism, also the study analyses the short-run effects using error correction model, the empirical results demonstrate that real income is the most significant variable in explaining tourism TB in the long run. The real exchange rate and real foreign income positively affect the TB, on the other hand, real domestic income negatively influences the TB, the coefficient for the real exchange rate is less than zero, which implies that ML condition is not valid, finally the study find no evidence of a J curve effect, these findings are also checked using nominal figures, and we find similar result, the present article can be used to provide important recommendation on tourism policy in developing countries. (Akay et al., 2017).

A study is a doctoral thesis was discussed in 2008 at the Ain-Shams University in Egypt for The impact of the change in the exchange rate of the Egyptian pound on the performance of the tourism sector in Egypt an Empirical Study, the study aims at assessing the effects of the change in the exchange rate of the Egyptian pound on the international tourist demand coming to Egypt during the period (1991-2006), The results of the laboratory application resulted in the following:

1) The number of tourists coming to Egypt is closely related to the level of tourist income coming from the countries sending tourists. The second affects the first positively positive effect when applying the model in its static and dynamic conditions, in accordance with economic theory and the results of previous applied studies in this field.

2) The Egyptian pound exchange rate affects the number of tourists coming to Egypt (from the countries of the study sample) with a negative effect when applying the model in its static and dynamic cases. This result is identical to the economic theory and the previous applied studies in this regard, Egyptian economy as a result of the increase in the number of tourists coming to Egypt during the study period. (Elsherbini, 2008).

DATA AND METHODOLOGY

In this paper, we used two types of first analysis First: a simple analysis through a survey. A random sample of 400 tourists representing the most important nationalities worldwide which chose Egypt as a tourist destination it was selected according to the 2016 statistics (Germany, Ukraine, Britain, Italy, United States, China, Russia and Saudi Arabia),the main question was.. is the value of the currency the principal indicator or are there any other elements and what are they? Second: we used time series analysis methods for analyzing time series data in order to extract meaningful statistics and other characteristics of the data, the purpose of using time series techniques is the use of a model to predict future values based on previously observed values, while regression analysis is often employed in such a way as to test theories that the current values

of one or more independent time series affect the current value of another time series, the following data have been used that affect the exchange rate on tourist demand: Tourist spending, number of tourists, number of tourist's nights, exchange rate and tourism revenue During the period 2000 to 2016.(Imdadullah, 2014).
The use of the time series analysis of the total statistical data for Egypt was carried out through the application of the following information Dickey – fuller test and Durbin Watson test.

Statistical Study:

Data and variables:

Table (1) defining variables

Variable	Name
Tourist spending	EXP
No. of tourists	NO
No. of tourists nights	NO- N
Exchange price	EX
Tourism revenue	RE

Table (2) shows the variables in the study.

Table (2) unit root test results

Variable	Test statistic Dickey – fuller	Sig	Decision at α=0.05
EX_P	-2.17	0.0341	Starting at Δ1 No intercept
NO	-5.144	0.0014	Starting at Δ1 No intercept
NO-N	-3.78	0.0211	Starting at Δ1 No intercept
EX	-2.13	0.0355	Starting at Δ1 No intercept
RE	-2.961	0.049	Starting at level Δ0

Table (3) shows the augmented Ducky- fuller test for stationary of the data set.
Time series analysis was used to investigate the effect of exchange price on each of (EX_P, NO, NO-N, RE) from 2000 to 2016 in Egypt.

Table (3) Relation between EX and EX_P

Variable	Coefficient	T statistic	Sig	Durbin Watson	R2	F-statistic
D(EX)	289.6	0.38	0.7	2.55	1.1%	0.706
C	238	0.408	0.68			

C: constant Dependant = D (EX_P)

From table (4) since the sig is more than (α=0.05) for exchange price then we can conclude that there is no significant effect for exchange price changes on tourist spending in Egypt for year 2000 to year 2016. (Marno,2012)

Table (4) Relation between EX and NO

Variable	Coefficient	T-statistic	Sig	Durbin Watson	R2	F-statistic
D(EX)	208.48	0.45	0.65	2.62	1.5%	0.65
C	524	0.44	0.66			

C: constant Dependant = D (NO)

From table (5) since the sig is more than (α=0.05) for exchange price then we can conclude that there is no significant effect for exchange price changes on number of tourists in Egypt for year 2000 to year 2016.

Table (5) Relation between EX and NO-N

Variable	Coefficient	T-statistic	Sig	Durbin Watson	R2	F-statistic
D(EX)	0.165	2.42	0.0323	1.805	32.8%	5.86
C	0.058	1.108	0.289			

C: constant Dependant = D (Log NO-N)

From table (6) Since the sig for exchange price is less than (α=0.05) so we can say that there is a significant relation between exchange price and the first deference of log No. of tourist nights.

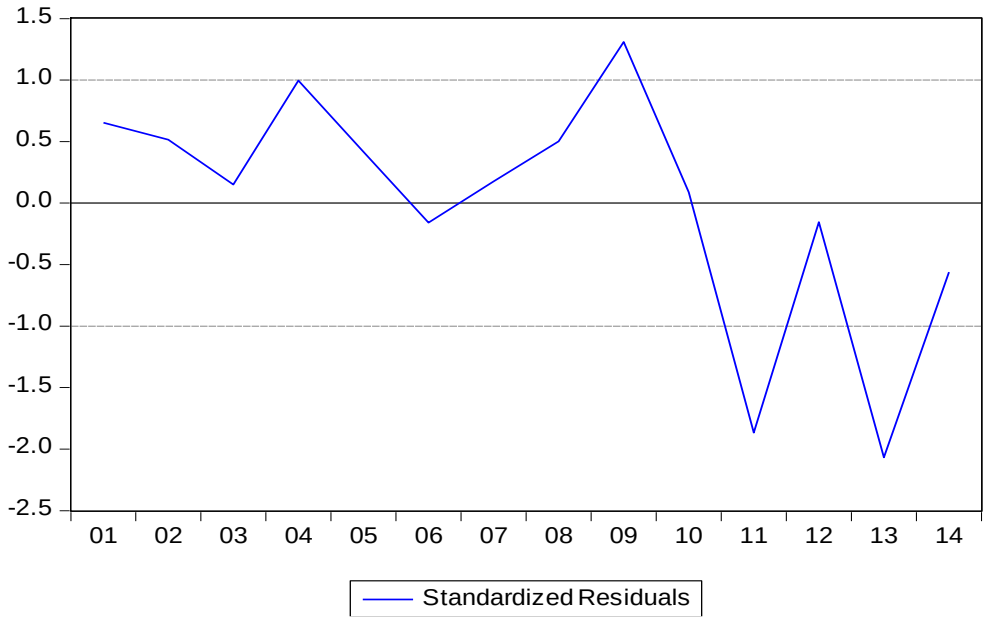
Since the sig for constant is more than (α=0.05) then it is insignificant in the model and we can exclude the constant from the model.

The value of Durbin – Watson statistic is 1.85 and the calculated value is between the tabulated values Du and 4- Du so we can conclude that there is no problem about autocorrelation in the error for the estimated model.

The value of R2 =32.8% and it means that the changes in exchange price explain 32.8% from the changes in the number of tourist's nights and 67.2% are due to the random error.

The following figure shows the distribution of the residuals of the model:

Figure (2) residuals distribution



From figure (1) it was shown that the residuals has an approximate standard normal distribution. Finally, we can conclude that it was a significant effect for the exchange price in the number of tourist nights from 2000 to 2016 in Egypt.

Table (6) Relation between EX and RE

Variable	Coefficient	T-statistic	Sig	Durbin Watson	R2	F-statistic
D(EX)	-0.519	-0.72	0.48	0.478	4.2%	0.48
C	22.8	202	0.0			

C: constant Dependant = D (RE)

From table (7) since the sig is more than (α=0.05) for exchange price then we can conclude that there is no significant effect for exchange price changes on tourism revenue in Egypt for year 2000 to year 2016.

Conclusion

This study examines the exchange rate fluctuations and its effect on tourism demand with the annual data from the time period 2000 to 2016, Egypt has been running deficit in recent years. Experiencing such a vast amount of imbalances makes tourism earnings a vital source of strengthen the balance of payments and increase its role as a large source of employment opportunities for citizens, which supports their living and social level, for this purpose, this paper employs Dickey – fuller test and Durbin Watson test technique to show the long-run effects of exchange rate on tourism demand, The findings of test results to the following:

1. since the sig is more than (α=0.05) for exchange price then we can conclude that there is no significant effect for exchange price changes on tourist spending in Egypt for year 2000 to year 2016, (Relation between EX and EX_P).

2. since the sig is more than (α=0.05) for exchange price then we can conclude that there is no significant effect for exchange price changes on number of tourists in Egypt for year 2000 to year 2016, (Relation between EX and NO).
3. Since the sig for exchange price is less than (α=0.05) so we can say that there is a significant relation between exchange price and the first deference of log No. of tourist nights.
4. Since the sig for constant is more than (α=0.05) then it is insignificant in the model and we can exclude the constant from the model, the value of Durbin – Watson statistic is 1.85 and the calculated value is between the tabulated values Du and 4- Du so we can conclude that there is no problem about autocorrelation in the error for the estimated model. (Relation between EX and NO-N).
5. The value of R2 =32.8% and it means that the changes in exchange price explain 32.8% from the changes in the number of tourist's nights and 67.2% are due to the random error.

We also analyse the short-run effects using Survey or Exploratory Study, the empirical results that exchange rate fluctuations is not the most significant variable in explaining tourism demand, It was found that 52% of tourists expressed their agreement that the change in the exchange rate affects their choice of tourism, while 48% of the sample did not agree that exchange rate change is one of the most important priorities, there can be many other reasons Such as GDP per capita in sending countries, relative price, security stability and other variables affecting tourism demand.

Finally, the exchange rate is statistically significant and has a negative effect, which is confirmed by the economic theory that the increase in the exchange rate leads to a decline in foreign tourism demand.

The coefficient of identification indicates that the tests do not have a good explanatory capacity, although the tests of the transactions are statistically significant, Other determinants of tourism demand in Egypt, such as GDP per capita in sending countries, relative price, security stability, and other variables affecting tourism demand.

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Appendix

Table. Countries considered as tourist destinations.

Albania	France	Norway
Algeria	Germany	Oman
Angola	Ghana	Pakistan
Antigua and Barbuda	Greece	Panama
Australia	Grenada	Papua New Guinea
Austria	Guadeloupe	Paraguay
Bahamas	Guatemala	Peru
Bahrain	Guinea	Philippines
Bangladesh	Haiti	Poland
Barbados	Honduras	Portugal
Belgium	Hong Kong	Romania
Belize	Hungary	Saudi Arabia
Benin	Iceland	and Senegal
Bermuda	India	Seychelles
Bolivia	Indonesia	Singapore
Brazil	Iran	South Africa
British Virgin Islands	British Virgin Islands Ireland Spain	British Virgin Islands Ireland Spain
Brunei	Israel	Sri Lanka
Bulgaria	Italy	St Vincent and The Grenadines
Burkina Faso	Jamaica	St Kitts Nevis
Cambodia	Japan	St Lucia
Canada	Jordan	Sweden
Cayman Islands	Kenya	Switzerland
Chad	Korea Republic	Thailand
Chile	Kuwait	Togo
China	Luxembourg	Trinidad and Tobago
Colombia	Malaysia	Tunisia
Cook Islands	Maldives	Turkey
Costa Rica	Malta	Turks and Caicos Islands
Cyprus	Martinique	UK
Czech Republic	Mauritius	USA
Denmark	Mexico	Russia
Dominica	Dominica Morocco Uruguay	Uruguay
Dominican Republic	Nepal	Venezuela
Ecuador	Netherlands	Vietnam
Egypt	New Caledonia	El Salvador
New Zealand	Fiji	Nicaragua
Finland	Nigeria	