

# **The Effect of Exchnage Rate on Revenue from Tourism Industry in Selected Southwest Asian Countries with Using System Generalized Method of Moments**

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## **Abstract**

*We know that the economics of science is about achieving optimal revenue using scarce resources. Similarly, the problem that the world's economies are trying to address is how to achieve an optimal economic share of limited tourism resources. Given that global studies and statistics indicate that exchange rate is considered to be one of the most important factors in developing countries, it has been termed exchange rate as a solid building block of development. In this study, panel data were collected from 14 selected Southwest Asian developing countries during the 2011-2016 annual period, and the model was applied and estimated using the system generalized momentum method. The model estimation results show that only the hypothesis of this study which shows the positive and significant effect of good banner index on the amount of revenue from tourism industry has been confirmed and its effect has been positive and significant and also the exchange rate variables. Income and business openness have also had a significant positive impact on the tourism industry's revenue.*

**Keywords:** *Tourism Industry, Dynamic Panel, Econometrics Modeling*

**JEL Classification:** *L86, L63, C23, C15, C26.*

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## 1. Introduction

In recent decades, exchange rate has become a hot topic in public sector management, and this is because of the important role that government plays in the health of society. Global studies and statistics indicate that exchange rate is considered one of the most important factors in developing countries and exchange rate is considered as a solid building block of development. The term is defined by the European Union as good governance: transparent and accountable management in the country with a view to ensuring fair and sustainable economic and social development (Barnard, 2007). Researchers with different approaches (process, liberal and socialist), different dimensions (political, economic, etc.) and multiple goals (economic, political and also sustainable human development) have expressed the very key to good governance. Over the past two decades, economic, social, and political scholars and scholars have provided various versions of governance, each of which has in turn identified and explained the features and aspects of good governance.

On the other hand, some scholars have argued for a broader definition of sovereignty, in their view, governance is a process that collectively resolves community problems and meets the needs of society. Based on these insights and evidence, government is not just the state, but also groups and individuals, the private sector and civil society, as well as the systems, procedures, and processes involved in planning, managing, and decision making. Making a decision is also involved (Bovarid, 2007). Given the fact that exchange rate can be very effective and beneficial to the tourism development process and development goals of any country, it is imperative to address this very golden and practical issue in the context of this research.

Today tourism has become one of the most interesting topics of discussion for teachers, students and researchers today. According to statistics released by the World Tourism Organization, in 2017, a total of one billion 323 million tourists left the country to visit other countries; this figure is up 6% for 2018 and one billion And 400 million people are reported, and by 2030 this is projected to reach one billion 800 million tourists worldwide.

The tourism industry is one of the economic sectors that can be considered as a clean industry, increasing foreign exchange earnings and making a decent contribution to improving employment and income generation (Alexander Litao, 2010). The industry is an industry that is pushing domestic and international industries forward, as increasing tourist arrivals are demanding airline work, hotel work, English training, travel agency work, State Department staff, photography, Tour guides, shipping, insurance, crafts and more. For this reason, it is essential and important that this category is very useful for countries facing unemployment. Today, the industry plays a prominent role in the global economy, with the majority of countries seeking to increase their share of the tourism market.

Thus, given that the governing body of any country can be instrumental in the growth and prosperity of its economy, and since the Exchange rate Index is made up of six important and essential sub-indicators (a more detailed description of which is available below) In this study,

we intend to examine the impact of exchange rate index as well as each of its subscales on tourism industry earnings in selected Southwest Asian countries and analyze its results. In light of the above, this study empirically examines the simultaneous effect of network readiness index and exchange rate on earnings from tourism industry in 14 selected countries using econometric panel data approach. Southwest Asia examines during 2016-2011. This study seeks to find out whether the exchange rate index has a positive and significant effect on the amount of tourism revenue.

## **2. Literature review**

Given that tourism is a multifaceted activity that encompasses various economic, social and other stakeholders, a strong governance system is needed in the path of sustainable development. Governance in tourism development has therefore become more important in recent years, as it directly and indirectly determines the parameters in which tourism takes place as an activity and has a relative impact on tourism development outcomes (Cornelissen, 2005). Government is an important element of tourism management, both at national level (through tourism policy making) and internationally (as a participant in global surveillance regimes), but such importance remains neglected.

[Show and Williams \(2004\)](#), have identified in several means through which government is the primary regulator. This is a key point of connection with the global economy, and involves the creation of a framework in which firms operate with others, during which the international movement can occur. The government also assists in shaping the production and consumption of tourism by shaping the legal and policy framework (through legislative or political ends) in which tourism activities take place.

[Hall \(2000\)](#), also pointed out in that tourism is a very important political issue. It connects the different layers of governance together and, most importantly, requires coordination at all levels. Turning to the above theories and arguments, one can conclude that governance has a significant impact on the tourism industry. If exchange rate in the economy of any country, especially the economy of Iran, resonates correctly and systematically, it may be possible to achieve a favorable outcome by expanding tourism and increasing the revenue generated by this important and important industry.

According to the theories put forward, given the importance that the state institution plays a key role in advancing a society towards growth, and with regard to international tourism theories, one can find a gap that seems to have escaped everyone. And it doesn't invest too much, so the only hypothesis of this study, that is, the positive and significant impact of exchange rate index on the amount of revenue from the tourism industry can be concluded. The following are some of the most relevant and important researches in this area.

### **2.1 Research on Exchange Rate and tourism**

[Ashrafipour and Hosseini \(2012\)](#), in a study of the effects of exchange rate on the development of tourism industry, which due to the importance of attracting tourists in the path of economic growth, in this study using panel data method, index effects Good governance, GDP as an indicator of growth, growth of information technology, inflation as an indicator of economic infrastructure and improvement of education status have tested the rate of tourist attraction in

30 selected developing countries during the period 1996-2009. . To achieve better results and increase the comparative power of the results, a similar test was conducted on 30 OECD countries over the same time period. The results indicate that in both groups of countries, despite the positive impact of economic growth (increase in GDP) and the promotion of information on tourist attraction, rising inflation has been effective in reducing tourism in both groups of countries, as well as the level of literacy index. OECD countries are positive and significant in increasing tourism, but meaningless in selected developing countries. In examining six indicators of good governance, including accountability, political stability, rule of law, quality of regulation, anti-corruption and government effectiveness, on the level of tourist attraction in the two groups of countries, the results show that improving governance indicators also impacts It has a positive effect on attracting tourists in both groups of countries.

[Daryaei et al \(2012\)](#), in a study, emphasized that exchange rate is one of the most important factors in developing countries. Considering the importance of tourism in the economies of countries, this study uses panel data methods to investigate the effect of exchange rate index, GDP growth, technology growth, inflation rate and government educational spending index on industry development. Tourism covers 30 selected developing countries and a set of OECD countries from 1996 to 2009 annually. The results of this study indicate that both sets of countries have had a positive impact on economic growth and technology level, and the level of education in the OECD countries has had a positive impact, and this has not been significant in developing countries. Also, the mediation of the six governance sub-indices expressed as exchange rate index in this study has a positive and significant effect on both groups of countries studied.

[Sharifi Renani et al. \(2013\)](#), study the role of exchange rate on tourism attraction in selected countries of the OPEC area. The main purpose of this study was to investigate the role of exchange rate in attracting tourists to selected OPEC countries and to find the most effective index among the four governing indicators studied on tourism attraction in the target countries. The models studied in this study were estimated using panel data method for 10 countries in the period 1996-2011. For estimating the patterns, Fisher and Levin Lin Chu root tests, Hausman tests, Pagan methods, likelihood ratio, Waldridge and GLS regression estimation methods were used. The results of the estimation of the patterns indicate a positive and significant effect of variables used in this study such as GDP, exchange rate, rule of law, political stability, efficiency and effectiveness of government and control of corruption on the number of tourists. It is among the countries that, among the indicators studied, have the greatest impact on government attraction in the countries under study. On the other hand, the results of the estimation confirm the negative and significant impact of oil revenues on the number of tourists entering the countries under study.

[Mamipour and Nazari \(2014\)](#), in an article titled The Contribution of Tourism Development to Economic Growth in Iran's Provinces, Estimates the Impacts of Tourism on the Economic Growth of Iranian Provinces 2000-2010. The panel data method in econometrics is used to estimate this. This research has shown that there is a positive relationship between tourism income and economic growth in Iranian provinces. They also prove that for every 10 percent increase in tourism spending, it leads to a 1 percent increase in GDP per capita. Other results include a positive relationship between human and physical capital and a negative relationship between unemployment and consumer price index (CPI) with economic growth.

[Litao \(2015\)](#), has conducted a survey for Portugal between 2004 and 2013. In this study, econometric methods are used to analyze the results and estimate the relevant model. Among the unit root tests and the GMM Dynamic Panel (GMM System), there have been tests that have been used in this study. According to the dynamic panel estimation and estimation model, relative prices, per capita income, human

capital and government expenditure have influenced the international tourism demand of Portugal and these variables have driven the international tourism demand in Portugal. Encourage. [Shah Abadi and Talabi \(2016\)](#), in a study, examined the impact of the host country's governing body on tourism revenue of selected developing countries. In this study, considering the considerable difference between developed countries and developing countries in attracting international tourism revenue, this study investigated the impact of host country's governance institution index on tourism revenue of selected developing countries during the period 2000-2000. The findings of this study indicate a positive and significant effect of governance index on tourism income of developing countries studied. This illustrates the need for serious developing countries to move towards improved governance components. In addition, the research findings show that the development of ICT infrastructure and the level of public education have a positive impact on international tourism revenue. Based on the results of the estimated coefficient of health expenditure index is meaningless. The results also show that in addition to increasing real per capita income and population of countries and exchange rates, transportation infrastructure has been of great importance in attracting tourists. [Arefi \(2017\)](#), in a research study the impact of exchange rate and tourism on the economic growth of OPEC member countries. The main purpose of this study is to investigate the role of exchange rate and tourism in economic growth for OPEC countries. The models investigated in this study were estimated using panel data method for 21 countries in the period 2013-2013. Unified root tests, Hausman tests, and fixed effects tests were used to estimate the patterns. The results of the estimation of the models show that the variables of number of imported tourists, exchange rate, inflation rate, rule of law, control of corruption and right to speak and respond positively and variables of inflation rate, political stability, government efficiency and effectiveness, quality of laws And regulation has had a negative impact on the economic growth of OPEC countries. [Ghulamali et al. \(2018\)](#), in his study using Structural Reversal Self-Reversal Model (SVAR), seeks to investigate macroeconomic shocks to Malaysian tourism industry earnings; Understand what behaviors the economy faces in the years 2001 to 2012 against shocks in oil prices, exchange rates, price changes, exports, economic growth and tourism revenue. Don't give up. The results of this study show that oil price shocks, economic growth, exchange rate and export have an adverse impact on tourism revenues, except for consumer price index which has had a positive impact in this study. [Shamaei and Yousefi \(2018\)](#), in a study, analyzed the role of exchange rate in sustainable tourism revenues (case study: Masjed Soleiman City). The method of this research is survey-exploratory. According to the data, it is a qualitative and quantitative research and the method of data access is documentary and survey. The study population is 30 urban experts and the sampling method is selective and purposeful. In order to analyze the data, inferential statistics (t-test) was used in SPSS software and also for weighting the variables considered by multi-criteria decision making models of ANP and Super decision software. used. The findings indicate that among the variables of good urban governance that have an impact on sustainable urban income, the indicators of equipping infrastructure and facilities to attract private investment in tourism have the highest weight and equity index of all stakeholders against benefits and plans. Tourism development has the least weight. [Boga and Erkisi \(2019\)](#), in a study, have shown a short-run and long-run relationship between tourism revenues and economic growth. The study included 483 data from 1995 to 2017 for 21 Asian and Pacific countries. A two-way result in this study is visible: 1) 1% increase in economic growth increases tourism revenue 1.9% in the long run and vice versa and 2) tourism revenues affect economic growth, and with each 1% increase in tourism revenues, economic growth of

0.49% in the long run, and vice versa. It is also supported by the hypothesis that the two-way relationship between tourism revenues and economic growth.

### **3. Model, data, and methodology**

In this study, to evaluate the impact of Network Readiness Index (ESI) on tourism revenue from dynamic panel data technique and systematic generalized torque method for 14 selected Southwest Asian countries during the period Used from 2011 to 2016. Econometric patterns with dynamic relationships are characterized by introducing interruptions or interruptions of the dependent variable as explanatory variables (right model variables). The generalized torque method was first elaborated by Hansen (1982), providing an easy framework for obtaining asymptotic performance estimates. This method incorporates the dynamic effects of the dependent variable. If the dependent variable enters the pattern with continuous values, it will cause a correlation between the explanatory variables and the disturbance statements (residuals), which will result in inconsistent and inconsistent results using the conventional least squares method. This objection can be overcome by the method of generalized moments by applying instrumental variables.

But since in the dynamic panel data model, the dependent variable interrupts the correlated sentence, such as Arlano Weband's second dependent variable interrupt and other variable interrupts (in the form of a recursive form) as a tool. The dependent variable based on the generalized torque method is used. The GMM estimation proposed by [Arellano and Bond \(1991\)](#) essentially differs from the existing model in order to get rid of the problem of specific effects on sections and all fixed-time regressors. Also, in this method, a two-stage generalized system torque is used to eliminate the correlation of the dependent variable with the error term and the lag of the variables as a tool in estimating the woman. Two-stage asymptotic female estimation works better and more efficiently if there is variance in the error component. The torque condition uses the orthogonality terms between the error bars and the dependent variable interrupt values. In this process it is assumed that the main disturbances are not serially correlated. In which Arlano and Bond methods are used to test serial correlation in disturbances. In this model, the sargan test is used to test over-identification constraints to check the validity of the instrumental variables ([Baltaji, 2005](#)).

Given that our dependent variable in this study is income, and since we know that tourism earnings have an impact on the years before and after itself (for example, 1000 tourists visit a tourist spot this year). So, part of the revenue they earn at this tourist spot is spent on rebuilding, upgrading, and so on, which will expand the building and increase its facilities), so this year Subsequent attractions will attract more tourists and will increase tourism revenues in those years. For this reason, it can be relied upon that these variables from the set of selected countries can be used by the generalized torque method to assess the impact of each of them on the amount of revenue from the tourism industry.

But the data from this study have been extracted from the World Bank website, the Global Development Indicators Database and the Global Governance Indicators Database. Also selected were the selected Southwest Asian Developing Countries, which were selected from

the 22 available countries to the final 14 selected countries<sup>1</sup> based on the availability of data available to the study population. The most important reason for choosing these countries was because of their close geographical and climatic position and their trade with Iran. This study will use the stat software to make estimates and estimates.

In this section, inspired by the theoretical foundations and empirical studies of [Boga and Erkisi \(2019\)](#), [Leitao \(2015\)](#), [Maritime et al \(2012\)](#), [Shahabadi and Talabi \(2014\)](#), [Sharifi Renani and colleagues \(2013\)](#) and [Ashrafipour And Hosseini \(2012\)](#) as well as the panel data model introduced and used by [Baltaji \(2005\)](#), an equation that has been specified to investigate the impact of exchange rate index on the amount of tourism industry revenue in selected Southwest Asian countries:

$$\text{Ln}(\text{TR})_{it} = \beta_{0i} + \gamma \text{Ln}(\text{TR})_{i(t-1)} + \beta_1 \text{Ln}(\text{OER})_{it} + \beta_2 \text{Ln}(\text{GDPP})_{it} + \beta_3 \text{Ln}(\text{TO})_{it} + U_{it} \quad (1)$$

In relation to number (1),  $U_{it} = \mu_i + \lambda_i + v_{it}$  where  $\mu_i$  represents country-specific effects and  $\lambda_i$  represents year-specific effects. The following is a more detailed account of each of these.

#### 4.1 Definitions and sources of variables

The information sources and definitions of each of the model variables are summarized in Table (1).

**Table 1. Variables used in the model, short definitions and statistical sources**

Variables	Definition	Source
<i>lnTR</i>	Natural logarithm of the income of the tourism industry (in billion US dollars);	World Bank
<i>LnOER</i>	Official exchange rate (in US dollars);	World Bank
<i>lnGDPP</i>	Natural logarithm of real GDP per capita based on purchasing power;	Global Development Indicators
<i>lnTO</i>	The natural logarithm of business openness,	World Bank

#### 4.2 Explanatory variables used in the model

First, it is important to note that tourism revenue (TR), following the studies of [Boga and Erkisi \(2019\)](#), [Panic \(2015\)](#), and [Cho \(2010\)](#), in order to maintain the tourism industry's breadth of tourist income index between -International (in US dollars) is used as the dependent variable.

- Official Exchange Rate (OER): The higher the official exchange rate, the lower the competitiveness of domestic products and services relative to foreign ones, and the greater this will be. This is very important for tourists and hence the cost of living in the destination country relative to the country of origin and the official exchange rate affect the travel motivation. It is worth noting that this variable entered the model with a differentiation period.

<sup>1</sup> In this study, due to the limitations and lack of statistics and information of some countries, finally 14 countries studied in this study are: Iran, Armenia, Azerbaijan, Georgia, Jordan, Kazakhstan, Kuwait, Lebanon, Oman, Pakistan, Qatar, Saudi Arabia, Tajikistan and Turkey.

- Per capita income (GDPP (PPP)): Per capita income of the country of origin is one of the most important variables affecting the tourism income of the destination country. In other words, since tourism is usually considered as a normal or luxury commodity, this variable is more sensitive to income level and is considered as one of the determinants of tourism income equation. In this study, real income variable based on purchasing power is used. Most of the studies including Sharifi Renani et al. (2013), Pournamdar (1395) and Shahabadi and Tabi (1395) have been the most influential variables of per capita GDP.

- Trade openness (To): This is one of the most important principles in assessing and measuring the development of a country's economy, calculated from the sum of total exports and imports to GDP. So that the more a country's borders are open for exporters and importers, the larger the deduction, that is to say, that country and its economy have a more open and free trade degree. According to previous studies, such as Boga and Orchis (2019) and Temporal (2013), this variable can be considered as other important and influential variables on tourism revenues.

In addition, one should not forget that tourism is affected by natural shocks, war, policy changes, tastes, propaganda, expectations, political instability, terrorism and other special events. Given that the data for the cases mentioned are not available, the cases are entered into the model as a disruption or error statement and are tested.

## 5. Discussion and results

In order to obtain a non-false estimation between the model variables, the variables in the regression must be static or combine to be static. If the data used in a study are nonstationary, the results of the estimates will lead us to a false regression. But for panel data resilience test, this study, considering the years studied (due to geographical and statistical constraints), is six years, and with reference to the concepts in the Baltagi book, panel data for below 15 years is not needed (Baltaji, 2005).

But in the following, the results of estimating the effects of network readiness index variables as the main explanatory variables and other control variables on the level of tourism revenues (corresponding to model number (1)), using dynamic panel data method (SGMM approach) in Table (2) is displayed. The results of the model show that all coefficients extracted at error level less than 5% were significant and all of these coefficients had positive and significant effect.

**Table (2)** Results of Estimation of the Model by Two-Step GMM Method

Names of variables	Coefficients	Z statistic value	Probably value
Ln(OER)	0.895	11.310	0.001
Ln(GDPP)	1.683	13.950	0.000
Ln(TO)	0.546	3.540	0.000
Cons	-68.610	-13.47	0.000

**Resource:** Research Findings



The following findings (with 95% confidence level) can be deduced from the results of Table (2):

- ✓ Estimated exchange rate index coefficient as one of the important variables in this research had a positive and significant effect on tourism industry earnings with the interpretation that with a one percent increase in tourism governance index revenue increase by 0.655 percent. Looks. This very important finding overlaps the only hypothesis put forward in this study, and the results are consistent with theoretical foundations and empirical studies, in particular [Pakzadsaleki \(2014\)](#), [Zamani \(2013\)](#), and [Buhalis and Dimzi \(2004\)](#).
- ✓ The estimated official exchange rate coefficient has a positive and significant effect on the tourism industry's earnings, with the interpretation that a one percent increase in the official exchange rate of tourism revenue would increase the rate by 0.0004 percent. This is in line with the results of [Gholamali et al. \(2018\)](#) and [Purnamdar \(1395\)](#) studies.
- ✓ Estimated income coefficient on tourism earnings is also positive and significant, with an increase of 2.683% in the variable yoy, thus improving the income status of the countries influencing factors on tourism earnings. This is in line with the results of [Purnhamed \(1395\)](#), [Zamani \(2013\)](#) and [Litao \(2015\)](#).
- ✓ Estimates of the degree of trade openness were also positive and significant, with a one percent increase in business openness increasing the revenue from the tourism industry by 0.246 percent.

It should also be noted that the parent test statistic, to test whether the parameter estimated by the sample is the same as the parameter concerned, is sometimes evaluated instead of a test, with the statistical value 32114 and the probability level of error. Zero percent is obtained for model estimation (1), which rejects the null hypothesis that the test is ineffective in the regression model.

As mentioned earlier, the model adopted in this study is the dynamic panel model, and this model is preferred over conventional panel data models, which in conventional dynamic models is not due to constant effects. The ability to solve the correlation problem of cross-sectional effects or independent variables is thus utilized as a dynamic panel model that considers the dynamic adjustment effects of the dependent variable (KarimiTecanloo & Zanjpour, 2013: 184-191). In the following, it is necessary to investigate the feasibility of using dynamic panel data to determine the equivalence of the equation. After the final estimation of the model, the Sagan test statistic based on the J test is used to test the equivalence (research model).

The results of the Sargan test are presented in Table (3), which is based on the results of this test, since the null hypothesis (based on the equation's specificity) is not rejected and as a result the instrumental variables used in the estimation. The models are valid (there is no relationship between the disruptive components and the variables of the tools used). Therefore, the use of instrumental variables to control the correlation between explanatory variables and the disorder statements in the model equation is considered essential.

**Table. 3. Results of the Sargan test**

<b>Chi2 statistic value</b>	<b>probability values</b>
11.140	0.600

**Resource:** Research Findings

What is important here is that the probability value obtained by Baltaji (2005) should be above the 5% level, which is relevant in the table above. As a result, the instrument variable has the necessary validity.

Another test is the serial correlation test in the first-order differential error sentences by M statistic. Serial correlation with one order means that the waste follows a moving average process of the same order. The results of the autocorrelation analysis of the disturbing sentences in Table (4) indicate that at the 5% error level there is no first-order autocorrelation and second-order autocorrelation and the estimators have consistency characteristics.

**Table. 4. Results of the Autonomy Panel Data Model Autonomy Test**

<b>Description</b>	<b>Z-value statistic</b>	<b>probability value</b>
first time	0.778	0.439
second time	-0.892	0.373

**Resource:** Research Findings

## 6. Conclusion

Economics means achieving optimum income by using scarce resources. It doesn't matter if one is looking for the spiritual benefits of the trip, the business is providing goods and services to the tourist, or the host government views tourism as an economic benefit to the tourist expense, importantly There is a golden standard in which all of them are the same. Economic agents seek to supply limited tourism resources (physical and financial) and to meet tourist demands. Demands are the results of their physical and functional needs (which are usually limited) and their psychological demands (which are almost unlimited). Likewise, the problem that economies are struggling to address is how to achieve an optimal economic share of limited tourism resources while dealing with ever-changing demands (which generate physical needs and psychological demands). ) For these sources.

The present study, using dynamic panel data approach and a two-stage generalized torque approach, examines the impact of exchange rate index on tourism industry earnings in selected Southwest Asian countries during the period 2011-2016. Since based on the theories suggested by domestic and foreign researchers, exchange rate is one of the essential components of attracting foreign tourists, the findings of this study also confirm the positive and significant impact of exchange rate quality on the amount of foreign tourists. Looks. The exchange rate index, derived from the six sub-indicators of governance presented by the World Bank, has a positive and significant effect on the amount of tourism industry revenue in selected South West Asian countries. In order to increase the revenues from the tourism industry, the following suggestions are offered:

➤ The emphasis on promoting per capita GDP growth may perhaps be analyzed so that whatever the country's revenue is directed towards the tourism industry can escape the clutches of the single-product economy and, on the other hand, invest more in this area. The incomes of tourism in the next years are higher and as a result these revenues are reflected in the development of different economic sectors and as a result stimulate domestic production growth and according to the results of this study can be very promising Increase in tourism revenues is visible.

➤ Finally, considering the results of the six separate models for the six sub-indicators of governance, referring to the table of results of the attached estimates, the opinion and accountability index as well as the legislative quality of the highest estimation coefficients among the seven general models Have been estimated. Paying special attention to this important result and the necessary infrastructure to improve these indicators can have a major impact on the earnings generated by the tourism industry.

### **6.1 Future suggestions to researchers**

Finally, the following research suggestions are provided for future studies by interested researchers:

- 1) Investigating the Impact of Exchange rate Index on Income from Tourism Industry (Case Study: OPEC and OECD Countries);
- 2) Investigate the impact of each of the exchange rate sub-indicators on the amount of revenue from the tourism industry;
- 3) Investigating the Impact of Exchange rate Index on Income from Tourism Industry: A Nonlinear Approach.

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