STUDY OF IMPACT OF EXCHANGE RATE ON TOURISM BALANCE OF PAYMENT IN COUNTRIES WITH TOP TOURIST ATTRACTIONS (VECTOR ERROR CORRECTION APPROACH)

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ABSTRACT

Purpose

This article focuses on the impact of exchange rate on the balance of payment in selected countries of the premier tourist attractions in two groups of countries; countries with high and lower-middle per capita income in the period of 1995-2013. Countries includes Sweden, Norway, Bulgaria, South Africa, Japan, Iran, Georgia, China, Egypt and Malaysia.

Methodology / Approach

In this study vector error correction approach and impulse response functions in the form of the J – curve is used. It means that depreciation of domestic currency and exchange rate increase, first worsens tourism balance of payments, then, after some period, improves it.

Findings

The results show that there has been a J-curve in tourism balance of payments in Sweden, South Africa, Bulgaria, Iran and Egypt. With the shock on the exchange rate, after a period of deterioration the tourism balance of payment improved. However, the J-curve in Japan, Norway, Malaysia, Georgia and China had not been approved. Also, variance decomposition of tourism balance of payments in the countries studied shows that major changes in the balance of tourism in Japan, Sweden, South Africa, Egypt, Malaysia and China arise from exchange rate changes. Most of the changes in the tourism balance of payment of Norway and Bulgaria arise from the changes in foreign income. The changes in the tourism balance of payment of Georgia and Iran are more sensitive to changes in domestic income.

Social/physical implications:

Findings of this study help policy makers on take suitable decisions about exchange rate changes.

Originality/Novelty of research:

The present study, by focusing on the examination of the impact of exchange rate on the tourism balance of payment and statistical population being the group of the top countries in tourist attractions with an emphasis on high, average and low per capita income, differs from the previous researches.

Keywords: exchange rate, tourism balance of payments, Countries with top tourist attractions, j-curve, vector error correction

INTRODUCTION

Tourism has been recognized as the largest service industry in the world regarding income generation. Its growth brings about great economic and social changes. The development of this industry in developing countries that are already facing problems such as; unemployment, shortage of currency resources and a single product economy, assumes great importance. The tourism industry is a relatively new phenomenon in international transactions and is one of the important resources of income generation in most countries. If it is properly planned, it could lead to the increase in production, income rise, life level improvement, public welfare and more employment for the most of the

factors of production. Today, governmental planners focused attention on tourism development at national, regional and international levels. Most countries have come to the conclusion that to improve their economic conditions they have to quest for new ways (Lotfi, 2005). As the community gain knowledge of tourism as a foreign currency income resource, tourism concept expanded in all aspects and considered as an industry (Tahmasbi, Pasha and Maji, 2005).

Exchange-rate regimes have undergone drastic changes in the international arena, and the economic structures of the countries were influenced by currency regimes which determine the exchange rate in economies. The degree of the effect of exchange rate on the balance of payment in tourism is necessary. Exchange rate changes are among the important topics in all countries; as a result, most countries try to stabilize their currency rate against the major currencies. However, some countries have accepted exchange rate fluctuations and have adopted floating currency regime policy.

According to the existing theories, devaluation of national currency against foreign currencies and increase in the exchange rate are among the influential factors in the improvement of the balance of payment in tourism. After the collapse of Bretton Woods system in 1973. The creation of floating currency regime, it became evident, through the study of the time of the exchange rate fluctuation and its effect on the balance of payment. The traditional theories of the positive effect of the increase of exchange rate on the balance of payment of tourism are reversed at least in the short run. The time trend of change in the current account is a J – curve (Mohammadi and Ariyabod, 2012: 20). The difference in response of balance of payment over time to the real changes in monetary value and exchange rate creates a J shape curve. According to the J - curve, with the devaluation of the national currency, it is expected that the balance of payment of tourism will improve in the long run (ascending part of the J - curve), but this will not happen in a short period (descending part of the J - curve).

REVIEW OF LITERATURE

Research History

There have been large studies regarding the effect of exchange rate fluctuations on balance of payment that are summarized as follows:

Krugman and Baldwin (1983) examined the existence of the J - curve in the effect of exchange rate fluctuations on balance of payment using the USA and other countries trade statistics. The results illustrate that the hypothesis of J-curve existence in the USA is proved and the length of the trade balance is estimated to be 3 to 4 periods.

Rose and Yellen, (1989) examined the existence of the J - curve using mutual and non-cumulative trade statistics of the US. The results indicate that the hypothesis J-curve does not apply, and in both developed and developing countries, the real exchange rate does not have a tangible effect on trade balance improvement.

Anil and Thomas (2002) used Vector error correction approach and impulse function to examine the effectiveness and the determining factors of the trade balance in South East Asian countries in 1985-1998 by using quarterly statistics for long-& short- term periods. The results indicate that J-curve hypothesis is proved and the real exchange rate affects the balance of payment in short and long terms.

Onafowora (2003) examined the long run and short run effects of the real exchange rate on the trade balance of Thailand, Malaysia and Indonesia on their bilateral trade with the US and Japan, using a vector error correction model (VECM). The results show that in Indonesia and Malaysia in their bilateral trade with the US, Japan, and Thailand, only the J-curve with the US is proved and 3 to 4 time periods are required for the actualization of long-run effects of currency devaluation and trade balance improvement.

Moura and Dasilva (2005) tested the Marshall-Lerner condition and J-Curve using vector error correction model and impulse function for Brazil for a period of 1990-2003 by using monthly data. The results indicate that the Marshall-Lerner holds true in conjunction with Brazil's trade balance. But the J-Curve phenomenon doesn't exist in short-term.

Hsing (2008) examined the J-curve existence in bilateral trade between the US and seven Latin American countries

using Vector Error Correction Model and impulse functions to assess the scale of response to exchange rate shocks. The results show that in Chile, Ecuador and Uruguay the J-curve existence is proved; in other words, due to the devaluation of the domestic currency, trade balance first deteriorates then improves.

Cheng et al. (2012) studied the effects of exchange rate shocks on tourism balance of payment during 1973-2007 in the US using VECM and impulse response function. Results show that currency devaluation does not have effects on tourism balance of payment and the tourism balance of payment is mostly sensitive to the income changes.

Nowjee (2012) examined the effect of real exchange rate on tourism and economic growth in Mauritius during 1981-2010 using VECM and Granger causality. Results show that one-way causality exists from tourism to effective real exchange rate and from economic growth to exchange rate.

Cheng (20013) examined the effect of real exchange rate fluctuations on tourism balance of payment during 1973-2007 in the US using VECM. Results show that existence of the J - curve is not proved and tourism export income responds to exchange rate. A trip to foreign countries is a luxury good and trip from abroad to the US (tourism import) is a common good.

Thompson et al. (2013) examined the real exchange rate fluctuations on the US tourism balance of payment during 1973-2010 using VECM and impulse response function. The results show that currency devaluation affects tourism export income, but tourism, import income is not affected; American outbound tourism responds to income, but American inbound tourism does not.

Akay et al. (2015) examined the effects of exchange rate and income on tourism balance of payment in Turkey during 1998-2011 using VECM. The results show that the exchange rate and foreign income have a positive impact and domestic income has a negative impact on tourism balance of payment and the J - curve doesn't exist.

Literature Review

Most of the time, economic policy makers consider the rise in the exchange rate and the currency devaluation as one of the means to improve a country's balance of payment. The relationship between the exchange rate and the tourism balance of payment has been explained in this way that in the long run with the currency devaluation, tourism balance of payment improves and this policy is one of the solutions to reduce the trade deficit. But in most cases, the relationship between these two appear to be contradictory to the economic theories. When the domestic currency devalues and exchange rate rises, two differentiable effects appear 1. Price effect: an export based on foreign currency is cheaper, and import based on domestic currency is more expensive. So price effect results in the worsened balance of payment. 2. Volume effect: cheaper export encourages export and leads to rising in export volume; consequently the volume effect improves the balance of payment.

The net effect depends on the consequence of these two. So, exchange rate volatility impacts tourism balance of payment in four ways; direct effect on export and import price, indirect effect on the response of import and export volume of the changes in the relative prices. The dominance of the price effect over volume effect in the short run is a phenomenon that (Magee, 1973) called it J-curve. In the short run, the volume of import and export does not change much; that is, price effect dominates the volume effect, consequently leading to worsened balance of payment in the short run. But after a short lag, export volume increases and finally the adjustment of tourism balance of payment which is under the influence of an increase in the exchange rate and devaluation of the domestic currency can be drawn as the J - curve.

Realization of the exchange rate volatility and balance of payment policy needs time in the real world so that the J-curve phenomenon and the short-term adjustment theory the increase in real exchange rate after a short period of decrease in the balance of payment- reveal the improvement in it. Regarding the dual response of balance of payment to real exchange rate volatility, scrutinizing short and long run balance of payment assumes great importance, so that the shape of the J - curve becomes revealed from the study of time series in the balance of payment. Although exchange rates adjust rapidly, consumers and producer's responses to the changes in real exchange rate and relative prices come with delay (Junz and Rhomberg, 1973).

Some researchers like Magee, Junz, and Rhomberg (1973) try to separate the long term and short term impacts of exchange rate volatility on balance of payment flow. They believe domestic currency devaluation and the increase in

exchange rate leads to improvement in the tourism balance of payment after a short period.

The present study is by focusing on the examination of the impact of exchange rate on the tourism balance of payment and statistical population being the group of the top countries in tourist attractions with an emphasis on high, average and low per capita income, differs from the previous researchers.

METHODOLOGY

In this section, J-curve is studied for tourism balance of payment of ten countries selected from among the top countries in tourist attractions during 1995-2013. The studied countries are divided into two groups: countries with high per capita income and countries with low and average per capita income. The group of countries with high per capita income includes Japan, Norway, Sweden, South Africa and Bulgaria and countries selected from among countries with low and average per capita income include Egypt, Georgia, Iran, Malaysia, and China. The studied model is stated considering the algorithm based on theoretical and practical fundamentals carried out by Haynes & Stone (1982), Bahmani-Oskooee & Brooks (1999), Boyd et al. (2001) and Onafowara (2003) as follows:

$$x = \alpha_0 + \alpha_1 y^* + \alpha_2 r + \varepsilon \tag{1}$$

$$m = \beta_0 + \beta_1 y + \beta_2 r + \upsilon \tag{2}$$

$$\text{BOT} = (\alpha_0 - \beta_0) + \alpha_1 y^* - \beta_1 y + (\alpha_2 - \beta_2)r + (\varepsilon - \upsilon) \tag{3}$$

In equation (3), BOT is the difference between income from tourism export and import during 1995-2013, and the variable statistics is taken from WDI. It should be mentioned that Rose (1991) defined BOT to function as X-M, but it is considered as X/M in this study, according to Haynes & Stone (1982) and Bahmani, Oskooee & Brooks (1999).

In equation (3), Y*: is the total income of the world (except the studied countries) during 1995-2013. Y is the income of studied countries and r: is the real exchange rate calculated according to the following equation:

$$r = er \times {cpi_i}/{cpi_j} \tag{4}$$

In equation (4), er: is the official exchange rate in 1995 in this equation, cpi_i: is the consumer price index in studied countries and cpi_j is the consumer price index for the USA calculated based on the base years of 2010 for the period of 1995-2013 and the statistics of this variable is taken from WDI website.

Then, to estimate the vector error correction model. First, we find optimal lag for each of the mentioned models. Concerning the fact that the studied years in this study are 18 years, the optimal lag will be based on SIC criterion. Afterward, we can state the existence or lack of the J - curve according to the report of the response function for each model and based on the response function of the third model. In the end, the diagrams of variance analysis are reported for each of the functions of import, export and tourism balance of payment.

Three patterns of Vector Auto Regressive (VAR) are used in this model. The first equation includes tourism export that consists of the exchange rate, tourism export and income of foreign countries. The second equation includes tourism import that consists of the exchange rate, tourism import and income of studied countries and the third equation includes tourism balance of payments that consists of the exchange rate, domestic and foreign income, tourism export and import. It is assumed that other variables do not influence the exchange rate and the variables about tourism are assumed to be before incomes.

The following model is assumed for sectional trend of variables of VAR model:

$$x_t = Ad_t + B(L)x_{t-1} + Cu_t \tag{5}$$

$$d_t = \frac{1}{t}, x_t = \begin{matrix} [r_t & x_t & y_t^*]` \\ [r_t & m_t & y_t \ ]` \\ [r_t & b_t & y_t]` \end{matrix} \tag{6}$$

In equation (5), A is the matrix of coefficients, B(L) is the optimal lag of polynomial matrixes, $u_t u_t$ is the normal vector of structural shocks: $Eu_t u_t = I$, where I is the unit matrix and C, explains the structural relations between explanatory variables and $ECu_t u_t C = \sum$ is the matrix of variance-covariance of VAR model, x_t is 3*1 vector for import and export and 4*1 is for tourism balance of payment. Assuming the reverse equation system (4), the vector is re-written as follows:

$$x_t = D(L)Cu_t = \sum_{s=0}^{\infty} D_s Cu_{t-s} \qquad (7)$$

In equation (7), x_t is the vector of variables, $D(L)=I-B(L))^{-1}$, $D_0 = I$, D (L) C is the mean matrix of the moving polynomial of response and impulse functions.

Equation (5) is related to variance analysis. For example, for an anticipated error period:

$$\eta_{t+1} = x_{t+1} - E_t x_{t+1} = D_0 Cu_{t+1} = Cu_{t+1} \qquad (8)$$

Such that the variance of a period is anticipated $\upsilon_{t+1} = E_t \eta_{t+1} \eta_{t+1} = CC$, hence the anticipation of k period's error is $\eta_{t+k} = x_{t+k} - E_t x_{t+k} = \sum_{j=0}^{k-1} D_j Cu_{t+k-j}$ anticipation of variance error $\upsilon_{t+k} = E_t \eta_{t+k} \eta_{t+k} = \sum_{j=0}^{k-1} D_j CC D_j$.

Relative share of innovation in r_t for $E_t x_{t+k}$ in export model can be obtained as follows:

$\upsilon_{t+k}^{2,1} + \upsilon_{t+k}^{2,2} + \upsilon_{t+k}^{2,3})/(\upsilon_{t+k}^{2,1}$, where (*i*, *j*) are elements of υ_{t+k}.

MODEL ESTIMATION AND RESULTS

In this section, we report the empirical results of the examining the impact of tourism balance of payment in the selected countries with top tourist attractions during 1995-2013 using a vector error correction model, response function and studying the variance analysis.

First, we determine the optimal lag about the determination of optimal delay criteria; knowing that the time span under study is 18 years. So, the optimal lag determination is done by SIC (Schwarz Criterion). The results of lag determination for the three equations are illustrated in table (1).

About the results in the table 1, optimal lag with Schwarz Criterion for tourism export function for Japan, Norway, Egypt, and Malaysia is three, and optimal lag for the other countries is two. For tourism import function, optimal lag is two for Norway, three for Bulgaria, Egypt, Iran, and China, and for the other countries, the optimal lag is two. Also, optimal lag is two for Japan and Bulgaria; and for other countries, the optimal lag for tourism balance of payment is one.

Table1. Results of Lag Optimization for Tourism Balance of Payment Equation

Country	X		M		BOT	
	Optimal lags	SC	Optimal lags	SC	Optimal lags	SC
Japan	3	-12.15892	1	-13.87507	2	-19.83054
Norway	3	-11.03103	2	-14.59538	1	-16.29846
Sweden	1	-12.21186	1	-14.56510	1	-19.93509
S. Africa	1	-10.56423	1	-12.33331	1	-17.80685
Bulgaria	1	-10.72074	3	-9.003691	2	-15.23225
Egypt	3	-10.73248	3	12.29185	1	-15.46304
Georgia	1	-9.186542	1	-14.96299	1	-14.96299
Iran	1	-8.279672	3	-5.217364	1	-9.069033
Malaysia	3	-12.09935	1	-10.01864	1	-13.92537
China	1	-13.76218	3	-16.15012	1	-20.73479

Source: Research findings.

In the coming lines, we will report the diagram of the responses of the countries' tourism balance of payment to shocks of the exchange rate and will discuss the existence or lack of the J - curve in the studied countries.
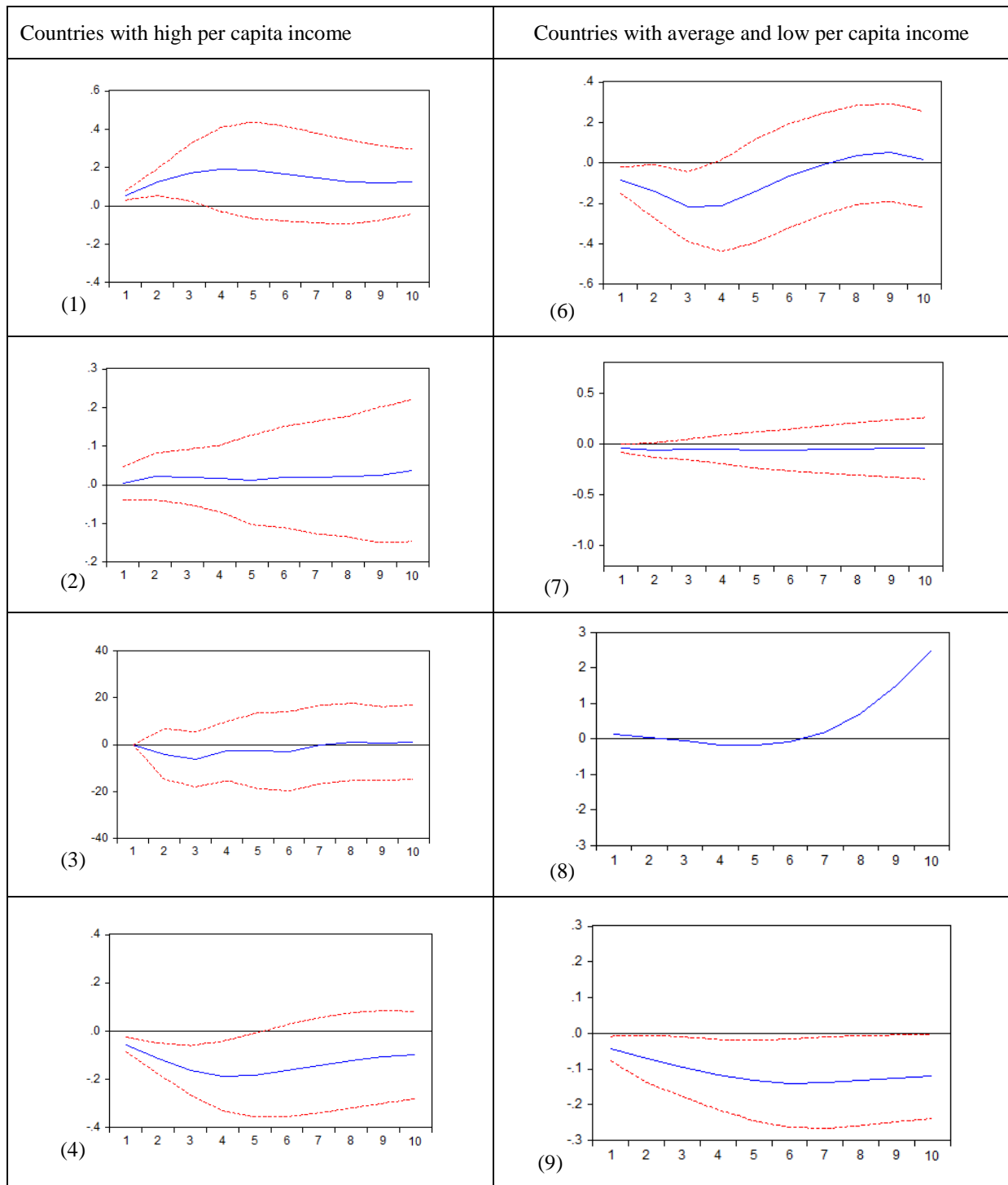
Diagram (1) shows the response of tourism balance of payment of Japan to one unit of change in exchange rate. This Table shows that the positive effect of exchange rate on the tourism balance of payment reaches its maximum in the 4th period, then this effect is descending, but positive, with a very gentle slope up to the 8th period and it has a positive and ascending trend over the 8th period. Therefore, considering the diagram, we can say that there is no J-curve in tourism balance of the payment function of Japan and tourism balance of payment in response to exchange rate increase is positive in each period; in other words, exchange rate increase has a positive effect on Japan tourism income.
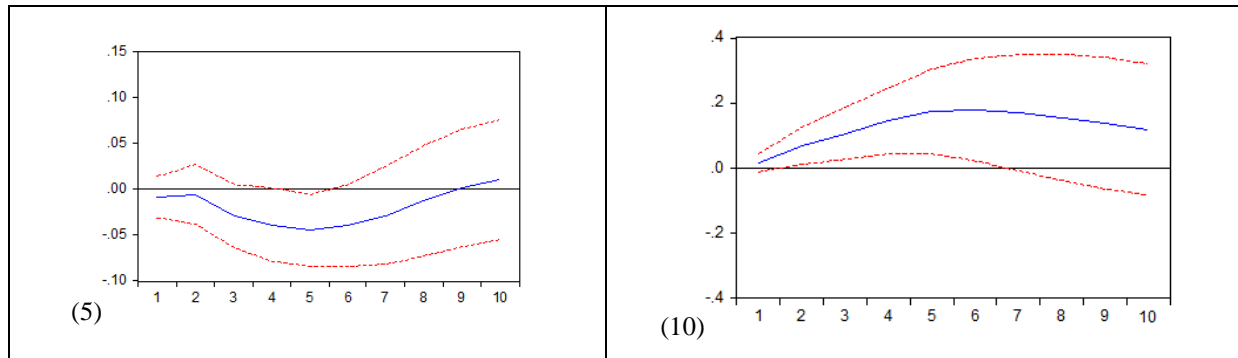
Diagram (2) is the report of the response of tourism balance of payment of Norway to exchange rate shocks. Considering the diagram, we can acknowledge the positive effect of the exchange rate increase on tourism incomes of this country. The effect of exchange rate increase on tourism balance trend was positive in all periods but with different slopes. This trend has a descending slope in the 5th period, and then it continued with an ascending trend and increasing slope. So, J-curve in Norway is not confirmed; that is, exchange rate shock resulted in the decrease of tourism balance of payment in primary periods and then improved the balance of payment. But, the exchange rate increase in all periods resulted in an increase in tourism income in Norway.

Diagram (3) shows the response of tourism balance of payment of Sweden to changes of the exchange rate. Considering the diagram of this trend, we can mention the positive and negative effect of the exchange rate increase on tourism balance of payment. The exchange rate increase had a negative effect on tourism balance of payment of this country until the 2nd period, and this negative effect has an ascending gentle slope until the 7th period, and the effect of the exchange rate increase in the tourism balance of payment becomes positive after the 7th period.

Therefore, J-curve in tourism balance of payment of Sweden is confirmed; such that the exchange rate increase in the primary periods results in the reduction of balance of payment and then improves the tourism balance of payment.

Table 2. Tourism Balance of Payment Response of the Group of Countries to Exchange Rate Shocks.

Countries with high per capita income	Countries with average and low per capita income
(1)	(6)
(2)	(7)
(3)	(8)
(4)	(9)

(5)   (10)

Source: Research findings.

Diagram (4) shows the response of tourism balance of the payment function to exchange rate changes in South Africa. Considering this diagram, we can say that increase of exchange rate up to 4th period with a descending slope result in the reduction of tourism incomes in South Africa. After the 4th period, exchange rate increase results in the reduction of tourism balance of payment, but with a gentle ascending slope. Therefore, J-curve is not confirmed in the country and exchange rate increase has not resulted in increasing and improving tourism balance of payment.

Diagram (5) shows the response of tourism balance of the payment function of Bulgaria to exchange rate volatility. Exchange rate increase up to the 4th period worsened tourism balance of payment, and after the 4th period, it improved tourism balance of payment, and after the 9th period on, it increased tourism incomes in Bulgaria. Considering the diagram, we can confirm J-curve in this country; as, an exchange rate increase in primary periods worsened tourism balance of payment and then improved this trend.

Diagram (6) shows the response of tourism balance of the payment function of Egypt to exchange rate volatility. The trend of the response of tourism balance of payment illustrates that the exchange rate increase worsened tourism balance of payment with a descending slope up for the 4th period. After this period, an exchange rate increase improved the balance of payment with an ascending slope up to the 9th period, and it worsened tourism balance of payment again at the end of the period. Therefore, J-curve is confirmed in tourism balance of payment in Egypt, such that, the exchange rate increase resulted in worsening of the balance of payment in the primary periods and after that, the positive shock of exchange rate improved tourism balance of payment of this country.

Diagram (7) shows the response of tourism balance of payment of Georgia to exchange rate volatility in this country. As it is seen in the diagram, exchange rate volatility didn't have any significant effect on tourism balance of payment and exchange rate increase in all periods resulted in a trivial reduction in tourism incomes with a fixed slop. Therefore, we can say that the tourism balance of payment of Georgia is less affected by exchange rate fluctuations. Also, J-curve is not confirmed in this country, that is, the exchange rate increase has no negative effect at the beginning and positive effect later on tourism balance of payment of this country.

Diagram (8) shows the response of tourism balance of the payment function Iran to exchange rate changes. Considering this diagram, the response of tourism balance of the payment function to exchange rate changes is descending up to the 5th period. This means that the tourism balance of payment had no improvement up to the 5th period against the exchange rate increase and after the 5th period, tourism function improves against the exchange rate increase and tourism income becomes more than tourism cost. Therefore, we can say that there is J-curve in Iran and tourism balance of payment improves by exchange rate shock after several periods of worsening.

Diagram (9) shows the response of tourism balance of payment of Malaysia to exchange rate changes. As it is illustrated in the table, the existence of the J -curve is not confirmed. Exchange rate increase worsened tourism balance of payment in all periods; such that positive shock of the exchange rate with descending slope up to the 5th period worsened tourism incomes, and after the 5th period, exchange rate increase shock worsened the balance of payment again, but with gentleness and ascending slope.

Diagram (10) reports of the response of tourism balance of payment of China to exchange rate changes. Considering this trend, the J-curve is not confirmed, and exchange rate increase improves the balance of payment in this country

in all periods; but this trend is ascending to the 5th period, and the increasing trend of the balance of payment is positive with descending slope after the 5th period following the exchange rate increase shock.

Considering the results of the tables of reports of tourism balance of payment responses to exchange rate changes. We can confirm the existence of the J - curve in Sweden, South Africa, Bulgaria, Iran, and Egypt; such that the exchange rate increase in primary periods worsened tourism balance of payment and this exchange rate increase, improved tourism income in these countries after primary periods. But, J-curve and the negative and positive effect of the exchange rate increase in other studied countries were not confirmed.

In the following, table 3, the report of variance analysis of functions of export, import, and tourism balance of payment in 10 studied countries is presented.

Table 3. Variance Analysis of Functions of Export, Import & Tourism Balance of Payment

Country	BOT				M			X		
	YF	YD	BOT	R	YD	M	R	YF	X	R
Japan	1.19	1.34	36.6	60.85	9.35	64.64	24.87	11.29	61.03	67.27
Norway	13.31	3.03	81.58	2.05	2.52	25.42	72.05	40.69	49.99	39.3
Sweden	5.58	9.7	57.65	27.05	19.7	30.58	49.71	15.82	67.61	16.55
S. Africa	1.17	13.51	18.71	62.99	0.69	80.53	18.77	6.1	49.81	44.08
Bulgaria	22.69	9.48	44.28	21.94	5.69	69.69	24.94	7.51	63.09	29.38
Egypt	7.13	5.92	41.29	45.63	16.39	34.53	49.15	15.16	16.16	71.36
Georgia	6.51	19.52	60.72	13.22	34.77	41.47	23.74	18.74	27.61	53.63
Iran	14.8	39.5	32.2	13.5	22.4	24.9	52.7	3.4	9.9	86.7
Malaysia	1.32	17.64	52.24	28.77	6.58	91.21	2.17	45.22	41.15	13.49
China	5.16	1.61	45.46	47.73	4.41	76.24	19.33	4.1	32.14	63.73

Source: Research findings.

Export function or tourism income of the studied countries shows a higher response to exchange rate volatility, except for Norway and Malaysia which show more sensitivity to foreign incomes. Also, the expenditure function of tourism or tourism import of the studied countries, except for Georgia and Malaysia that are more sensitive to domestic income, all are affected by exchange rate volatility.

About the results in the table 3, Japan balance of payment is more sensitive to exchange rate; in such a way that one unit of change in the balance of payment of that country results from 0.60 change in exchange rate. And the tourism balance of the payment itself, foreign and domestic incomes being 0.36, 0.13, and 0.11 respectively illustrate changes in Japan tourism balance of payment. Changes in Norway tourism balance of payment resulting from changes in the balance of the payment itself, foreign income and exchange rate are 0.81, 0.13, 0.03 and 0.02 respectively. So, foreign income has the major role in explaining the changes in the Norway balance of payment. Sweden tourism balance of payment is sensitive to changes in the balance of payment itself, exchange rate, domestic

income and foreign income. Such that against one unit of change in the balance of payment, there have been 0.57 changes in the balance of payment itself, 0.27 changes in exchange rate, 0.09 changes in domestic income and 0.05 changes in foreign income. Therefore, besides the change of balance of payment itself, the major change in the Sweden balance of payment is due to exchange rate volatility. One unit of change in South Africa tourism balance of payment, results from 0.62 change in exchange rate, 0.18 changes in the tourism balance of payment, 0.13 changes in domestic income and 0.01 changes in foreign income. Therefore, changes in the exchange rate have a major role in the changes of South Africa tourism balance of payment. Bulgaria tourism balance of payment responds to changes in the balance of payment itself at 0.44, to foreign income at 0.22, to exchange rate at 0.21 and to domestic income at 0.09. So, tourism balance of payment in Bulgaria is more sensitive to foreign income and this variable explains much of the changes in tourism balance of payment. One unit of change in the tourism balance of payment in Egypt results from 0.45 change in exchange rate, 0.41 changes in the tourism balance of payment itself, 0.07 changes in foreign income and 0.05 changes in domestic income. Therefore, major share in the tourism balance of payment in Egypt comes from exchange rate changes. One unit of change in tourism balance of payment in Georgia results from 0.60 change in the balance of payment, 0.19changes in domestic income, 0.13changes in the exchange rate and 0.06 changes in foreign income. Therefore, the changes in the tourism balance of payment in Georgia, after the balance of the payment itself, are explained by the exchange rate.

One unit of change in tourism balance of payment in Iran results from changes of 0.39 in domestic income, 0.32 in the balance of payment itself, 0.14 in foreign income and 0.13 in the exchange rate. Therefore, tourism balance of payment in Iran is more sensitive to domestic income and has less elasticity to exchange rate volatility. One unit of change in the tourism balance of payment in Malaysia is affected by changes of 0.52 in the balance of payment itself, 0.28 in the exchange rate, 0.17 in domestic income and 0.01 in foreign income respectively. Therefore, changes in the tourism balance of payment in Malaysia are more sensitive to changes in exchange rate. One unit of change in the tourism balance of payment in China results from changes of 0.47 in the exchange rate, 0.45 in a balance of payment itself, 0.05 in foreign income and 0.01 in domestic income respectively. Therefore, tourism balance of payment in China has a higher elasticity to changes in exchange rate.

About the results of variance analysis of tourism balance of payment, changes in the studied countries are as follows: major changes in the tourism balance of payment in Japan, Sweden, South Africa, Egypt, Malaysia and China result from the changes in the exchange rate. Finally, changes in the tourism balance of payment in Georgia and Iran are more sensitive to the changes in domestic income.

CONCLUSION AND IMPLICATIONS

The present study examines the impact of exchange rate on the tourism balance of payment in 10 selected countries from the group of countries that are dominant in tourist attractions categorized into two groups. Firstly, with high per capita incomes, including Sweden, Norway, Bulgaria, South Africa, Japan; secondly, with average and low per capita incomes including Iran, Georgia, China, Egypt, and Malaysia during 1995-2013 using vector error correction model and reviews 8. With regard to the results of the responses of tourism balance of payment to the changes in exchange rate, we can confirm the existence of the J - curve in Sweden, South Africa, Bulgaria, Iran, and Egypt. In these countries, exchange rate increase in the primary periods deteriorates tourism balance of payment, and after the primary periods, the increase improves the tourism income. The J-curve and the positive and negative impact of the exchange rate increase are not confirmed in other studied countries. Also, based on the variance analysis, changes in the tourism balance of payment in the studied countries were such that major changes in the tourism balance of payment in Japan, Sweden, South Africa, Egypt, Malaysia and China result from changes in exchange rate. Most of the changes of tourism balance of payment in Norway and Bulgaria result of foreign income. Finally, changes in the tourism balance of payment of Georgia and Iran are more sensitive to changes in domestic income. Export function or tourist incomes of the studied countries respond highly to foreign incomes, except for Norway and Malaysia; all the countries are more sensitive to exchange rate changes. Also, major changes in the tourism expenditure function or the tourism, import of all the studied countries are explained by the impact of changes in exchange rate, except for Georgia and Malaysia for which the explanation comes from domestic income.

Regarding the long run impact of exchange rate increase on tourism balance of payment in most of the studied countries, we suggest the economic planners and policy makers initiate small shocks of exchange rate increase. But along with increasing the exchange rate to increase tourism income, enough should be done to increase the inbound

tourism to gain more tourism income by introducing their tourist attractions at a global level because of these countries, especially the developing ones like Iran, enjoy agreeable situation regarding tourist attractions. The exchange rate increase might cause inflation and low credibility of domestic currency and could create an economic rent for some jobbers. So, care should be taken in creating exchange rate shocks on the part of the policymakers.

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