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Testing the tourism - led growth hypothesis for Vietnam

Kiểm định giả thuyết tăng trưởng kinh tế dẫn dắt phát triển du lịch tại Việt Nam

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Abstract

The study empirically investigate the relationship between tourism receipts, exchange rate and economic growth in the period 1990-2017 and define whether the tourism -led growth (TLG) hypothesis for Vietnam. The study implements Vector Error correction Model, Granger causality tests, variance decomposition with data in the periods 1990 -2017. The results point out that Gross Domestic Product (GDP), Tourism Receipts (TR) and Real exchange rate (EXR) are cointegrated, implying a long-run relationship between three variables. The value of ECM (-1) = 0.6388, this shows that speed of adjustment toward long run equilibrium is about 1.5 year. There is long run causality running between TR, GDP and EXR. In the short run, there is causality relation between GDP and TR, between EXR and TR. Tourism industry has contributed in solving employments, brought foreign currencies and the results give the evidences that tourist -led growth hypothesis (TLG) is accepted in the case of Vietnam in the period 1990-2017. The study also proposed some recommendations to develop Vietnam economy.

Keywords: Real exchange rate; tourism receipts; long –run equilibrium.

Tóm tắt

Bài viết điều tra mối quan hệ giữa doanh thu du lịch, tỷ giá hối đoái và tăng trưởng kinh tế Việt Nam thời kỳ 1990-2017 và xác định có hay không giả thuyết tăng trưởng kinh tế dẫn dắt phát triển du lịch. Các phương pháp Vector Error correction Model (VEC), kiểm định nhân quả Grange, phân rã phương sai được sử dụng với dữ liệu từ 1990 -2017. Kết quả nghiên cứu chỉ ra rằng Gross Domestic Product (GDP), Tourism Receipts (TR) và Real exchange rate (EXR) là đồng hội nhập, biểu hiện mối quan hệ dài hạn giữa 3 biến này. Giá trị ECM (-1) = 0.6388 cho thấy tốc độ điều chỉnh hướng về cân bằng dài hạn chừng 1.5 năm. Công nghiệp du lịch Việt Nam đã góp phần giải quyết việc làm, đem lại ngoại tệ và kết quả nghiên cứu cho thấy bằng chứng rằng giả thuyết tăng trưởng kinh tế dẫn dắt du lịch phát triển và ngược lại là được chấp nhận trong trường hợp của Việt Nam trong thời kỳ 1990 -2017. Bài viết cũng đề xuất các khuyến nghị để phát triển kinh tế Việt Nam.

Từ khóa: Tỷ giá hối đoái; doanh thu du lịch; cân bằng dài hạn**.**

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1. Introduction

Travel and Tourism is an important economic activity in most countries around the world. Travel & Tourism creates jobs, drives exports, and generates prosperity across the world. According to World Travel & Tourism Council [25], Travel & Tourism contributed 10.4% global GDP and 313 million jobs, or 9.9% of total employment, in 2017 (World Tourism Barometer [26]).

In 2017, Travel & Tourism's total contribution to Vietnam GDP is 20.6 US$ bn and Travel & Tourism's total contribution to employment is 4,060,900 jobs; that is the great success of Vietnam Tourism. (Table 1). Vietnam tourism received over 12.9 million international visitors, an increase of 29% compared to 2016. Tourism became a bright spot in the Vietnamese economy past year when the total contribution (direct and indirect contribution) of Travel & Tourism to GDP (including wider effects from investment, the supply chain and induced income impacts) was VND 468,291 bn in 2017 (9.4% of GDP) and is expected to grow by 6.2% to VND 497,303 bn (9.3% of GDP) in 2018 (World Tourism Barometer, 2018). The number of international visitors to Vietnam in 2017 reached two records: The highest number of visitors and the highest increase over the year (over 3 million). Vietnam's tourism is rapidly closing the gap with Indonesia (about 14 million), Singapore (17.5 million), Philippines (7 million), Cambodia (about 6 million), Myanmar (about 33 million).

Table 1. The Contributions of Travel & Tourism

Country	*Direct Contribution to GDP (US$ bn)*	*Total Contribution to GDP (US$ bn)*	*Direct Contribution to Employment (1.000 jobs)*	*Total Contribution to Employment (1.000 jobs)*
Thailand	42.2	95.0	2,336.6	5,834.0
Philippines	27.3	66.3	2,348.2	7.796.6
Malaysia	15.2	41.9	669.8	1,704,5
Singapore	12.8	31.5	169.3	322.9
Myanmar	2.0	4.9	569.8	1,282.4
Vietnam	13.0	20.6	2,467.6	4,066.9

(*Source:* World Travel Tourism Council - 2018)

Many modern tourism investment projects, large scale and high quality in the key areas of tourism development such as Phu Quoc, Khanh Hoa, Quang Ninh, Hoi An, Da Nang have changed the image of Vietnam Tourism, which highlights the role of strategic investors in the country such as Sun Group, Vingroup, Muong Thanh Group, FLC, CEO Group, BIM Group and big international investors. Vietnam tourism has won many international awards such as "World's leading package tour operator in 2017" for Vietravel, the fourth consecutive "Luxury resort in the World" award for the InterContinental Da Nang Sun Peninsula Resort, "The Newest Resort in the World" award for JW Marriott Phu Quoc Emerald Bay Resort. Vietnam was voted "The most attractive golf destination in Asia-Pacific region in 2017" and voted by the Pacific Journalists Association as "The emerging destination for luxury travel".

Destinations of Vietnam have been more known by friends and international visitors.

2. The view of related literature

The theoretical literature studying tourism with the development model can be found in Mowforth and Munt [21], Black Jane Knippers [4]. From the different economic point argument, there are arguments about the impact of tourism on economic growth.

Earlier, Hazari and A-Ng [10] [11] opined that if a monopoly power framework exists, tourism may be welfare - reducing. Balaguer and Cantavell-Jorda [2] and Kim *et al* [16] found evidence that demonstrated how the tourism business positively affects economic growth over time. Some researchers proposed that tourism-led growth appears when tourism stimulates across the overall economy in the form of spillovers and other externalities (Marin, [19]). International tourism receipts bring foreign currencies for the host countries and might generate significant export revenues. Specially, they are important resources in offsetting current account deficits and negative balance of payments (Oh, [22]). On the other hand, because of the linkage and contribution of international tourism to every sector of the economy, budget deficits also benefit from these activities via changes in tax revenues.

Pourier [23] noted the impressive economic impact of tourism in capital accumulation in Tunisia. Secondly, international tourism contributes to increasing income by increasing efficiency through competition between local enterprises and those in other destinations (Bhagwati and Srinivasan, [3] , Krueger, [17]). According to Helpman and Krugman [13], specialising in tourism exports also allows local enterprises to exploit economies of scale. Hazari and Pasquale [12] showed that a favourable impact of demand of international visitors would positively effect on the long-run growth of a small economy. Similarly, Brau *et al.* [5], and Sequiera and Campos [24] showed that the rising number of tourists to the world's main destinations is associated with a corresponding growth in GDP, enabling higher growth and employment rates than in many areas around them. They showed how tourism-based economies have displayed faster growth on average than other economies. International tourism may also contribute to long-term growth, first by providing incomes that can be used to import capital goods or basic inputs, which allows greater production of goods and services and therefore greater economic growth.

Dritsakis [7] found a strong causal relationship between international tourism earnings and economic growth in Greece. There was also a causal relationship between economic growth and international tourism earnings. This is, however, not as strong as the former. The role of the tourism sector is not only to generate foreign exchange but also to impact positively on the growth of any economy.

Katircioglu [15] empirically investigated the tourism-led growth hypothesis in the case of Singapore by employing the bounds test for cointegration, error correction models and Granger causality tests using annual data from 1960 to 2007. The results confirm the existence of a long-term equilibrium relationship between international tourism and economic growth in the case of Singapore; real income growth converges significantly toward its long-term equilibrium level of 51.4% in the TLG model.

Husein and Kara [14] empirically re-examined the possible causal relationships among tourism receipts, real exchange rate and economic growth by using annual data

(1964 - 2006) in the case of Turkey. The study found the existence of a 'stable' and significant long-run equilibrium relationship among real GDP, tourism receipts and real exchange rate (RER). Granger causality tests also indicated a unidirectional causality from tourism receipts and RER to real GDP.

Akinboade and Braimoh [1] researched international tourism and economic development in South Africa using annual data covering 1980 - 2005. The study demonstrated the direction of causality between international tourism earnings and long run economic growth. The result also showed a unidirectional causality running from international tourism earning to real GDP, both in the short run and in the long run.

Meurer [20] studied the relationship between exchange rate, world gross domestic product and number of travelers to Brazil. The result found that the number of travelers is quite sensitive to world income and less sensitive to the exchange rate. Exchange rate has an influence on revenues with a lag of four quarters, revenue don't react to the exchange rate. The results found that the expenditures of foreign travelers are not influenced by their costs measured in the currency of the country of origin.

Speaking generally, there were the previous researches investigated the possible causal relationship among economic growth, tourism receipts and exchange rate. Most of these researches agreed that there were the long - run relationship between international tourism, economic growth and exchange rate but a little of the studies were opposite. For example, the researches of Eugenio- Martin *et al.*,[8], Cortes-Jimenez and Pulina [6], Kweka et al., [18].

Eugenio- Martin *et al.*, [8] studied 21 Latin American countries. They found that there is causality between tourism and economic growth. They concluded that tourism expansion is adequate for the economic growth of low- and medium- income countries. Cortes-Jimenez and Pulina [6] supported the tourism-led growth (TLG) hypothesis for Spain, while they rejected it for Italy by using multivariate cointegration techniques and Granger causality tests. In the case of Tanzania, Kweka *et al.*, [18] results showed that although tourism has a significant contribution to growth, there is a low income multiplier. This may suggest that tourism does not have a considerable impact on income and employment generation in this country.

In the case of Vietnam, until now, we don't find out any quantitive analysis about this subject, especially the researches use Vector Error correction Model. Therefore, our study's aims are:

First, to investigate the relationship between tourism receipts, exchange rate and economic growth in the period 1990-2017.

Second, to examine the tourism - led growth hypothesis for Vietnam.

3. Methodology and data

3.1. Variables Description

This study uses the data for the period 1990 to 2017, obtained from World Tourism Organization, World Bank and General Statistics Office of Vietnam. The data are defined as below:

(a) The Gross Domestic Product (GDP - in US Dollars)

(b) Real exchange rate (EXR - the proportion between VND with USD)

(c) Tourism Receipts (TR- in US Dollars)

Three variables are taken in their natural logarithms to avoid the problems of heteroskedasticity. The estimation methodology employed in this study is the cointegration and vector error correction modeling technique.

3.2. Models Specification

The basic estimating equation is determined as follows:

$$LTR = a_0 + a_1 LGDP + a_2 LEXR \quad (1)$$

Where: a_0, a_1 - a_6 are parameters to be estimated

4. Empirical Results

4.1. Descriptive statistics

Table 2. Descriptive Statistics

	LGDP	LEXR	LTR
Mean	24.60640	9.611528	21.43216
Median	24.51301	9.656777	21.19619
Maximum	26.11434	10.03390	23.08853
Minimum	22.59071	8.776908	19.33697
Std. Dev	1.051502	0.299209	0.999255
Skewness	-0.194122	-0.648585	0.000499
Kurtosis	1.986439	3.286824	1.995041
Jarque-Bera	1.374380	2.059074	1.178268
Probability	0.502988	0.357172	0.554808
Sum	688.9793	269.1228	600.1006
Sum Sq. Dev.	29.85271	2.417197	26.95976
Observations	28	28	28

(Source: Author's survey)

The study's variables are found to be normally distributed as shown in Table 2. The mean to median ratio of each variable is approximately one. The standard deviation of each variable is also low, compared to the mean showing a small coefficient of variation, while the range of variation between maximum and minimum is also reasonable.

Table 3: Heteroskedasticity Test (Breusch-Pagan-Godfrey)

F-statistic	1.301161	Prob. F(9,15)	0.3133
Obs*R-squared	10.96055	Prob. Chi-Square(9)	0.2784
Scaled Explanned SS	4.915495	Prob. Chi-Square(9)	0.8416

(Source: Author's survey)

Heteroskedasticity test for used data, the result finds out that F-Statistic = 1.3011 < F(0.05, 9,15)=2,5876, nR^2 = 10.9605 < CHIINV(0.05,9) = 16.9189. Reject Null hypothesis, this means that model has no heteroskedasticity (Table 3)

4.2. Stationary results

Each of the variables in the model has been controlled to determine whether it is stationary or its order of integration. To implement this, ADF test (Augmented Dickey-Fuller) and PP test (Phillips- Perron) are implemented. The results of ADF and PP are shown in Table 4 and Table 5.

In PP test the EXR got the different stationary test but having the contrast in ADF test. Therefore, this gives more credence to PP test because of its validity even if the

disturbances are serially correlated and heterogeneous. The mentioned variables are stationary at the difference levels, we implement to establish whether or not there is long - run cointegrating nexus among the variables by using the Johansen method (Johansen and Juselius, 1990) [9].

Table 4: ADF Test

Variables	ADF Statistic	Critical Value	Prob[8]	Decision
D(LGDP,2)	-4.960	At 1% level = -3.737 At 5% level= -2.991 At 10% level = -2.635	0.0006	Reject Null of no unit root
D(LEXR,2)	-8.743	At 1% level = -3.737 At 5% level=-2.991 At 10% level =-2.635	0.0000	Reject Null of no unit root
D(LTR)	-6.372	At 1% level = -3.711 At 5% level=-2.981 At 10% level =-2.629	0.0000	Reject Null of no unit root

** MacKinnon (1996) one -sided p-values*
(Source: Author's survey*)*

Table 5: Phillips - Perron Test

Variables	PP Statistic	Critical Value	Prob[8]	Decision
D(LGDP,2)	-6.471	At 1% level = -3.724 At 5% level=-2.986 At 10% level =-2.632	0.0000	Reject Null of no unit root
D(LEXR,2)	-9.551	At 1% level = -3.711 At 5% level=-2.981 At 10% level =-2.629	0.0000	Reject Null of no unit root
D(LTR)	-8.261	At 1% level = -3.711 At 5% level=-2.981 At 10% level =-2.629	0.0000	Reject Null of no unit root

** MacKinnon (1996) one -sided p-values*
(Source: Author's survey*)*

4.3. Cointegration test

The testing hypothesis is the null of non-cointegration against the alterminative of existence of cointegration using the Johansen maximum likelihood procedure. The Johansen approach on two test statistics, viz, the Trace test statistics and the Max eigenvalue test statistics. Accordingly, the Eigen value statistics and likelihood ratio detect one cointegrating relationship at *5%* level of significance (Table 6).

Table 6. Johansen Cointegration Test

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	Critical Value at 5% (p-value)	Max-Eigen Statistics	Critical Value at 5% (p-value)
None	0.606	34.179	29.797 (0.014)	24.256	21.131 (0.017)
At most 1	0.287	9.923	15.494 (0.286)	8.820	14.264 (0.301)
At most 2	0.041	1.102	3.841 (0.293)	1.102	3.841 (0.293)

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Source: Author's survey, 2018.

AIC (Akaie Information Criterion), SC (Schwarz Criterion) and LR (Likelihod Ratio) test are used to select the number of lags required in the cointegration test. The option lag is 2 (Table 7).

Table 7. VAR Lag Order Selection Criteria

Lag	**LogL**	**LR**	**FPE**	**AIC**	**SC**	**HQ**
0	*13.68035*	**NA**	*8.83e-05*	*-0.821565*	*-0.676400*	*-0.779763*
1	*113.5650*	*169.0356*	*8.18e-08*	*-7.812693*	*-7.232033*	*-7.645483*
2	*130.9372*	*25.39018**	*4.44e-08**	*-8.456710**	*-7.440555**	*-8.164094**

4.4. VECM (Vector Error correction Model)

VECM is estimated to model the long run causality and short run dynamics. The aim of VECM model is to indicate the speed of adjustment from the short run equilibrium to the long run equilibrium state. The greater the coefficient of the parameter the higher the speed of adjustment of the model from short - run to long-run. VECM is a restricted VAR designed for use with non-stationary series that are known to be cointegrated. Once the equilibrium conditions are imposed, the VECM describes how the examined model is adjusting in each period towards its long run equilibrium state. Since the variables are supposed to be cointegration, then in the short run, deviations from this long run equilibrium will feedback on the changes in the dependent variables in order to force their movements towards the long run equilibrium state. The cointegration term is known as the error correction term since the deviation from long run equilibrium is corrected gradually through a series of partial short run adjustments. The size and statistical significance of the coefficient of the ECM measures the tendency of each variable to return to the equilibrium. A significant coefficient implies that past equilibrium errors play a role in determining the current outcomes.

Considering our base equation (1), the VECM model is specified as follows:

$$ALTR_t = a_o + a_1 ALTR_{t-1} + a_2 ALGDP_{t-1} + a_3 ALEXR_{t-1} + p_i ECM(-1) + e_t \quad (2)$$

Where A is the first difference operator, ECM (-l) is the error correction term, e_t is the error term, pi captures the long run impact. The error correction coefficient pi is very important in this error correction estimation as the greater coefficient indicates higher speed of adjustment of the model from the short run to the long run.

Table 8. Model D(LTR)

Variable	Coefficient	Std.Error	t-statistics	Prob
ECM(-1)	0.638838	0.26622	2.39966	0.0281
D(LGDP(-1))	-0.541160	0.58650	-0.92269	0.3691
D(LGDP(-2))	0.994028	0.52344	1.89903	0.0747
D(LEXR(-1))	-0.479523	0.89535	-0.53557	0.5992
D(LEXR(-2))	1.105575	0.48182	2.29459	0.0348
D(LTR(-1))	0.431016	0.25358	1.69975	0.1074
D(LTR(-2))	-0.079137	0.21781	-0.36334	0.7208
C	-0.025138	0.08789	-0.28601	0.7783

R -Squared = 0.380413, Adjusted R-squared =0.1252.

(*Source:* Author's survey, 2018)

ECM (-1) = 0.6388 and p-value = 0.0281. These coefficients are statistically significant, there is the long - run relationship between LTR and other variables (LGDP, LEXR).

Table 9 shows LM test, this test is used to inspect whether there is serial correlation or not between three variables. $F=1.13 < F(0.05, 3-1, 15) = 3.682$. The results have suggested the acceptance of null hypothesis. There is no serial correlation, it means that the disturbance term relating to any variable has not been influenced by the disturbance term relating to another variable.

Table 9. Breusch-Godfrey Serial Correlation LM Test

F-statistic	1.132491	Prob. F(2,15)	0.3483
Obs*R-squared	3.279733	Prob. Chi-Square(2)	0.1940

The results in Table 10 show the Pairwise Granger causality test among the variables analyzed. In the short -run, the results indicate that:

- There is bidirectional causality relationships between GDP and TR, between TR and EXR
- There is no causality relation between EXR and GDP

4.5. Causality test

Table 10. Pairwise Granger Causality Tests

Null Hypothesis	Obs	F-Statistic	Prob.	Decision
LEXR does not Granger Cause LGDP LGDP does not Granger Cause LEXR	26	3.70978 13.2584	0.0417 0.0002	Accept Accept
LTR does not Granger Cause LGDP LGDP does not Granger Cause LTR	26	2.38968 1.29338	0.1161 0.2953	Reject Reject
LTR does not Granger Cause LEXR LEXR does not Granger Cause LTR	26	1.15586 1.74240	0.3340 0.1995	Reject Reject

4.6. Variance Decomposition

We employ a twice- year forecasting time horizon and observed the relevance of the variables over time horizon. Table 10 gives the fraction of the forecast error vector variance that is attributed to its own innovation and to innovations in other variables. The own shocks of LTR ranged from 70.75% to 26.50%.

In the third period, 43.54% of the total change on the variance of LTR is due to LGDP. This percent increase gradually over the time and even in the twice periods it gets 62.25%. The salient feature is that predominant source of variation in LTR are LGDP (Table 11). In case of LGDP, we see that in the fifth periods 88.13% of the total change on the variance is due to LGDP and this percentage reduces smartly in the next period, getting 85.22% in the twice period (Table 12).

Table 11. Variance Decomposition of LTR

Variance Decomposition of LTR: Period	*S.E.*	*LGDP*	*LEXR*	*LTR*
1	0.134692	29.24157	0.005826	70.75261
2	0.178498	38.41681	1.701710	59.88148
3	0.199946	43.54109	4.705508	51.75340
4	0.212796	46.50213	7.319267	46.17860
5	0.222456	48.79855	8.943363	42.25809
6	0.231269	51.11795	9.760876	39.12118
7	0.240165	53.58588	10.12877	36.28536
8	0.249289	55.99778	10.32051	33.68171
9	0.258356	58.10711	10.49505	31.39785
10	0.266976	59.81430	10.71443	29.47127
11	0.274904	61.16369	10.97304	27.86326
12	0.282108	62.25580	11.23657	26.50763
Cholesky Ordering: LGDP LEXR LTR				

Table 12. Variance Decomposition of LGDP

Variance Decomposition of LGDP: Period	*S.E.*	*LGDP*	*LEXR*	*LTR*
1	0.054224	100.0000	0.000000	0.000000
2	0.097072	98.23965	1.032134	0.728213
3	0.132000	94.47022	3.109630	2.420146
4	0.158235	90.76487	5.609362	3.625771
5	0.177058	88.13016	7.966359	3.903485
6	0.190897	86.54877	9.794103	3.657123
7	0.202023	85.70592	10.98296	3.311124
8	0.211922	85.33804	11.64877	3.013187
9	0.221324	85.24537	11.98839	2.766241
10	0.230445	85.25882	12.17423	2.566947
11	0.239219	85.26410	12.31771	2.418192
12	0.247496	85.22037	12.46974	2.309886
Cholesky Ordering: LGDP LEXR LTR				

5. Conclusions and recommendations

Using VECM, this study includes EXR as a third variable and examines the relationship between tourism receipts and economic growth for Vietnam in 1990-2017.

- The results point out that GDP, TR and EXR are cointegrated, implying a long -run relationship between three variables. The value of ECM (-1) = 0.6388, this shows that speed of adjustment toward long run equilibrium is about 1.5 year.

- In the short run, the results also reveal that there is bidirectional causality relationships between GDP and TR, between TR and EXR.

- Tourism industry has contributed to solving employments, brought foreign currencies and the mentioned -above results give us to conclude that tourist -led growth hypothesis (TLG) is accepted in the case of Vietnam in the period 1990-2017.

This finding is in line with the research of Eugenio -Martin et al, *[8]*, Katircioglu *[15]*, Husein et al, *[14]*.

The study also suggest some recommendations to making-policy officers and manager as:

First, Implementing solutions to improve the business environment and boost the national competitiveness.

- State management need to be changed from pre-clearance inspections to post - clearance inspections, the overlapping management of a certain product will be restricted, and the ratio of import shipments undergoing specialized inspection in the customs clearance process will be reduced.

- To cut logistics costs as well as enforce work discipline. Civil servants failing to improve administrative procedure and facilitate investment and business activities, and those with signs of abuse of authority for personal gains will be replaced.

Second, to attract investment capital into improving socio-economic infrastructure.

Infrastructure refers to ports, expressways and connections key business locations. Vietnam should utilize resources for infrastructure planning and development, clear bottlenecks for growth, and enhance management capacity and policy transparency to boost disbursement of investment fund, especially for public investment, in addition to accelerating the digitalization process in aftermath of the pandemic.

Third, Training high-quality human resource

It is in one necessary to be aware of strategies and demands of high-tech groups, to train tourist human resource for getting high level in service qualities. Vietnam should focus on education development, ensure sufficient high-quality manpower for the next phase of development and select investment projects with high knowledge content and technology, as it is seen as the biggest ever opportunity to attract foreign investment, not only from South Korea, Japan and some other countries but also possibly from big US and EU corporations.

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