Examining tourism- led growth hypothesis for Zimbabwe

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Abstract

The empirical debate on the role of international tourism on local economic growth is inconclusive and is characterized by two main opposing views: the Tourism-led economic growth hypothesis and the Economy-driven tourism growth hypothesis. The objective of the study was to establish the role of tourism development on economic growth using time series secondary data from Zimbabwe. Empirically, the study develops a tourism-growth model that is an extension of Solow (1956) neoclassical growth function and attempts to determine whether there is the long-run and short-run relationship via Autoregressive Distributed Lag (ARDL) model and Granger technique. The main finding of this study is the Tourism-led economic growth hypothesis can be accepted in Zimbabwe both in short-run and long-run periods. The study findings have empirically verified the presence of the Tourism-led economic growth hypothesis in Zimbabwe. Tourism could be an effective substance for the sustainable growth of the country's economy and a strategy to help Zimbabwe recover from Covid19 economic effect. They showed that tourism is in part an endogenous growth process, requiring a systematic allocation of resources by government to sustain its effect on local economies. Further, the country can ease visa and border crossing processes as well as eradicate insecurity for sustainable tourism and economic development.

Keywords: Tourism-led growth, Investment, Economic growth, Tourism development, ARDL.

1 Introduction

International tourism is steadily growing as a strong pillar of sustainable economic growth and development in the developing countries (Jenkins, 2020) and apparently offers the potential for growth rates far in excess of what can be achieved by domestic tourism and obviously deserves priority attention (English & Ahebwa, 2018). Zimbabwe is, in fact, banking on tourism sector growth (Zhou *et al.*, 2014; Thomi et al, 2021), specifically, international tourism (Chitiyo *et al.*, 2019) to resuscitate the economy. The country is not yet ready to rely on domestic tourism because most of its citizens are low-income earners that cannot economically support tourism in Zimbabwe (Mutana & Zinyemba, 2013; Chitiyo *et al*., 2019). International tourism is therefore an important contributor of foreign exchange in Zimbabwe, hence, the country is working towards eliminating the obstacles that limit the flow of international tourists, for example, inefficient visa and border crossing processes as well as political instability and security threats (WEF, 2019).

According to WEF (2019) the tourism industry surpasses agriculture and manufacturing industries in terms of the country's fastest turn around industries. The lack of an evidence-driven tourism policy can be an impediment to the attainment of the needed growth in the country and has contributed to misuse and neglect of abundant tourism resource endowments in the country (WEF, 2019). Hence, this study seeks to contribute further to the tourism-economic growth led hypothesis and provide empirically-based evidence for policy making in the tourism sector.

2 Literature Review

The debate on the impact of international tourism on economic growth is inconclusive and is characterized by two main opposing views: the Tourism-Led Growth Hypothesis (TLGH) (Balaguer & Cantavella-Jorda, 2002) and the Economic-Driven Tourism Growth Hypothesis (EDTGH) (Oh, 2005), among other views such as the Reciprocal Hypothesis (RH) (Dritsakis, 2004) and the No Relationship Hypothesis (NRH) (Oh, 2005). The TLGH formally referred to as the "tourism-growth model" by Balaguer and Cantavella-Jorda (2002) argues that international tourism is the main driving force of overall long-term economic growth and suggests a one-way causal relationship running from tourism development to economic growth. If the TLGH is valid for a certain country, then promoting international tourism would stimulate economic growth. The EDTGH, also known as the supply-side Tourism (Lean *et al*., 2014) is in fact, a reverse causation of the TLGH and suggests a unidirectional causal relationship running from economic growth to international tourism. If the EDTGH is valid for a particular country, then economic expansion in that country would enhance tourism revenues.

The Solow model (Solow, 1956; Gisore, 2021), in its original form, does not talk about tourism; it rather identifies labor, capital and technological advances as the main determinants of growth. However, it was later extended to include other factors such as population growth, savings as well as tourism amongst others (Tang & Tan, 2015; Keino *et al.*, 2021). Within the modified Solow model, which supports the TLGH, tourism is included as an additional input in the neoclassical aggregate production function while labor, capital and technology are the main factors affecting economic growth (Tang & Tan, 2017; Gisore, 2022).

In Zimbabwe, very few studies examined the contribution of tourism particularly, international tourism to economic growth, despite its overall role in foreign exchange generation. The few studies available, Makochekanwa (2014) and Nene and Taivan (2017), analyzed the tourism – growth nexus for the SADC and SSA, respectively, where Zimbabwe was included as a panel country. The empirical literature review also clearly indicates that no similar country-specific study has been done in Zimbabwe, hence the need to fill this gap.

3 Methodology

3.1 Empirical Model

Due to its popularity and overwhelming empirical applicability, the model by Balaguer and Cantavella-Jorda (2002) and Thomi et al. (2021) has also been used in a number of well recognized empirical works, for example Dritsakis (2012). To reveal the effect of tourism on economic growth in Zimbabwe, this study follows the model by Balaguer & Cantavella-Jorda (2002) and modifies it to:

$$LY_t = \alpha_0 + \alpha_1 t + \alpha_2 LTA_t + \alpha_3 LQ_t + \mu_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots [1]$$

Where Y_t is as defined in equation 1 and represented by annual GDP, TA_t is as defined in equation 1, and Q_t is the nominal exchange rates variable, μ_t is the stochastic term, L is the natural log, α_0 is the constant term, α_1 is the coefficient associated with a linear trend (t) and α_2 and α_3 are coefficients associated with the logarithms of TA and Q, respectively.

3.2 Cointegration Analysis: The Bounds Testing Approach

To investigate the existence of a long-run relationship between international tourism and economic growth portrayed by equation [1], the study employed the bounds testing approach developed by Pesaran *et al.* (2001) within the intuition of the ARDL model. After carrying out unit root tests, the study followed Pesaran *et al.* (2001) and (Kibet et al 2019) in transforming equation [1] into the ARDL (p, w_1, w_2) bounds testing model as follows:

$$\Delta LY_t = \alpha_{01} + \alpha_{11}t + \sum_{i=1}^{p} \alpha_{2i}\Delta LY_{t-i} + \sum_{i=0}^{w} \alpha_{3i}\Delta LTA_{t-i} + \sum_{i=0}^{w} \alpha_{4i}\Delta LQ_{t-i} + \beta_{11}LY_{t-1} + \beta_{21}LTA_{t-1} + \beta_{31}LQ_{t-1} + \mu_{1t} \ldots\ldots [2]$$

$$\Delta LTA_t = \alpha_{02} + \alpha_{12}t + \sum_{i=1}^{p} \alpha_{2i}\Delta LTA_{t-i} + \sum_{i=0}^{w} \alpha_{3i}\Delta LY_{t-i} + \sum_{i=0}^{w} \alpha_{4i}\Delta LQ_{t-i} + \beta_{12}LY_{t-1} + \beta_{22}LTA_{t-1} + \beta_{32}LQ_{t-1} + \mu_{2t} \ldots\ldots [3]$$

$$\Delta LQ_t = \alpha_{03} + \alpha_{13}t + \sum_{i=1}^{p} \alpha_{2i}\Delta LQ_{t-i} + \sum_{i=0}^{w} \alpha_{3i}\Delta LY_{t-i} + \sum_{i=0}^{w} \alpha_{4i}\Delta LTA_{t-i} + \beta_{13}LY_{t-1} + \beta_{23}LTA_{t-1} + \beta_{33}LQ_{t-1} + \mu_{3t} \ldots\ldots [4]$$

Where $\Delta$is the difference operator and p and w are lag orders. Equations [2] – [4] can be estimated using Ordinary Least Squares (OLS). The null hypothesis for non-cointegration was tested based on the F – statistic (Wald test). The bounds test, through the F-statistic (Narayan, 2005), will be used to examine the joint significance of the coefficients on the one period lagged levels of the variables in equations [2 – 4]. Critical bounds values can be obtained from either Narayan (2005).

3.3 Long Run Output Elasticities

In order to obtain long run factor output elasticities, the study went on to estimate the long run relationship between international tourism and economic growth. To do this, equation [1] was specified in an unrestricted ARDL (p, w_1, w_2) model as follows:

$$LY_t = \alpha_0 + \alpha_1 t + \sum_{i=1}^{p} \alpha_{2i} LY_{t-i} + \sum_{i=0}^{w} \alpha_{3i} LTA_{t-i} + \sum_{i=0}^{w} \alpha_{4i} LQ_{t-i} + \mu_{it} \ldots\ldots [5]$$

3.4 The Error Correction Model: Granger Causality Test

The direction of causality between international tourism and economic growth will be analyzed using the Granger causality test in an error correction framework. Therefore, if the variables are cointegrated, the test for causality will be executed using an error correction construction arrived at from an ARDL (p, w_1, w_2) framework with the following specification:

$$\Delta LY_t = \alpha_0 + \alpha_1 t + \sum_{i=1}^{p} \alpha_{2i} \Delta LY_{t-i} + \sum_{i=0}^{w} \alpha_{3i} \Delta LTA_{t-i} + \sum_{i=0}^{w} \alpha_{4i} \Delta LQ_{t-i} + \emptyset_1 ECT_{t-1} + \varepsilon_{1t}. [6]$$

$$\Delta LTA_t = \alpha_0 + \alpha_1 t + \sum_{i=1}^{p} \alpha_{2i} \Delta LTA_{t-i} + \sum_{i=0}^{w} \alpha_{3i} \Delta LY_{t-i} + \sum_{i=0}^{w} \alpha_{4i} \Delta LQ_{t-i} + \emptyset_2 ECT_{t-1} + \varepsilon_{2t} \ldots\ldots [7]$$

$$\Delta LQ_t = \alpha_0 + \alpha_1 t + \sum_{i=1}^{p} \alpha_{2i} \Delta LQ_{t-i} + \sum_{i=0}^{w} \alpha_{3i} \Delta LY_{t-i} + \sum_{i=0}^{w} \alpha_{4i} \Delta LTA_{t-i} + \emptyset_3 ECT_{t-1} + \varepsilon_{3t} \ldots\ldots [8]$$

Where α_{2i} to α_{4i} are short term dynamic coefficients and ECT_{t-1} is the lagged error correction term derived from the long run regression model specified as in equation [5]. To enable comparability, all the data series were transformed into logarithm prior to estimations; as guided by several previous empirical works such as Tang and Tan (2017).

3.5 Measurements and Justification of Variables

Table 1 present the description of study variables and sources of data.

Table 1: Description of Study Variables

Variables	Description	Unit of Measurement	Source of data
Y_t	Economic Growth	Gross Domestic Product in Million in dollars	World Bank (online database)
TA_t	International Tourism	annual international tourist arrivals	World Bank (online database)
Q_t	Exchange rate	annual official exchange rates	World Bank (online database)

4 Findings and Discussion

4.1 Unit root test Results

Table 2 present ADF unit root test results for nominal GDP, number of international tourist arrivals and nominal exchange rate variables under consideration in this study.

Table 2: Unit root tests results

Variable	ADF Test Statistic		
	Constant	Constant + Trend	None
LOG(Y)	-0.432273	-1.071580	1.013044

LOG(TA)	-1.574562	-1.154239	2.109875
LOG(Q)	-2.641043*	-3.487508**	-2.580279**
Δ(LOG(Y))	-5.179832***	-5.407245***	-5.170459***
Δ(LOG(TA))	-6.360251***	-5.734457***	-5.803635***
Δ(LOG(Q))	-8.105085***	-7.999100***	-8.198987***

****, ** and * indicate statistical significance at 1%, 5% and 10% levels of significance*

From the result, nominal exchange rate, number of international tourist arrivals and nominal GDP variables are I(0), and I(1), respectively. We therefore, proceed to estimate the cointegration tests as outlined in the methodology.

4.2 Cointegration Tests

To carry out these tests, the study was guided by equations [2] and [3]; hence, the ARDL models were estimated. In line with previous studies such as Belloumi (2010), the Akaike Information Criterion (AIC) was used as the model selection criteria.

Table 3: Cointegration tests results

Dependent Variable	F-statistic		Decision	Then What?	
Δ(LOG(Y))	6.292166		Cointegrated	Estimate ARDL & ECM models	
Δ(LOG(TA))	1.088431		Not cointegrated	Estimate an ARDL model only	
Critical Bounds Values for Finite Sample Regimes Referenced From Narayan (2005): Case V – unrestricted intercept and trend					
Critical Values	1%		2.5%	5%	10%
Upper bounds	7.32		5.98	4.96	3.96
Lower bounds	4.42		3.57	2.90	2.25

When Δ(LOG(Y)) is the dependent variable, we reject H_0 since the F-statistic is greater than the upper bounds critical values at 2.5% level of significance and conclude that a long run relationship between international tourism and economic growth is established at 2.5% level of significance.

When Δ(LOG (TA)) is the Dependent Variable, we fail to reject H_0 since the F-statistic is less than the lower bounds critical values at all levels of significance and conclude that there is no co integration between international tourism and economic growth. However, since the main objective of this study is to assess the effect of international tourism on economic growth, and since the long run relationship exists in one and not both equations, we proceed to apply the ARDL approach.

4.3 Results of the Long Run Relationship

The next step was to estimate equation [1] which was specified in an unrestricted ARDL (p, w_1, w_2) model as in equation [5]. Based on the AIC, the long-run relationship was estimated as an ARDL (1, 4, 7) model.

Table 4: ARDL regression (1, 4, 7) model

Dependent Variable: LOG(Y)				
Variable	**Coefficient**	**Standard Error**	**t-Statistic**	**Probability**
LOG(Y(-1))	0.413788	0.186102	2.223449	0.0420**
LOG(TA)	0.373321	0.139937	2.667778	0.0176**
LOG(Q)	-0.030087	0.004892	-6.150913	0.0000***
C	16.96457	5.055090	3.355937	0.0043***
@TREND	0.038888	0.013260	2.932720	0.0103**
*NB: ***, ** and * indicate statistical significance at 1%, 5% and 10% levels of significance, respectively.*				

These findings imply international tourism explains positively economic growth in Zimbabwe. An increase in international tourist arrivals by 1% will more than proportionately increase economic growth by approximately 0.37%. This implies that promoting international tourism will stimulate economic growth in Zimbabwe. These results support the validity of the TLGH in the long run in Zimbabwe and are particularly in line with many country-specific studies such as Balaguer & Cantavella-Jorda (2002), Belloumi (2010) and Sharma (2018). More interestingly, these results are consistent with Makochekanwa (2014) and Nene & Taivan (2017) who conducted panel-data studies where Zimbabwe was also included, that is, for the SADC and SSA regions, respectively. However, this study contrasted similar research by De Vita & Kyaw (2017). In line with the Dutch disease argument, De Vita & Kyaw (2017) noted that such a scenario could be attributed to the fact that international tourism development may hamper long-term economic growth if it draws resources and labor from other industries to tourism-led sectors, thereby increasing local land and house prices and ultimately reducing social welfare (Mose, 2020).

The coefficient of the current period nominal exchange rates has the expected negative sign and is statistically significant at 1% level of significance. This means that economic growth is negatively affected by nominal exchange rates in Zimbabwe. An exchange rate appreciation by 1% will more than proportionately decrease growth by approximately 0.03%. This is quite reasonable given the fact that an exchange rate appreciation causes a slower growth of the economy due to a fall in net exports and a rise in the demand for imports. In the same line of thought, Basirat *et al*. (2014) highlighted that, exchange rates, through fluctuations; may hinder economic growth, especially in developing countries such as Zimbabwe where financial markets are undeveloped. These results are consistent with previous studies done in Zimbabwe, for example Masunda (2012) and Brixiova & Ncube (2014). Finally, these findings imply that economic growth is positively influenced by its past values.

4.4 Error Correction Model (Causality Test) Results

Table 5: ARDL-ECM model

Dependent Variable: D(LOG(Y))				
Variable	Coefficient	Standard Error	t-Statistic	Probability
C	16.96457	3.668511	4.624374	0.0003***
@TREND	0.038888	0.008280	4.696822	0.0003***
DLOG(TA)	0.550702	0.131927	4.174282	0.0008***
DLOG(Q)	-0.030087	0.003640	-8.266138	0.0000***
ECT(-1)	-0.586212	0.126740	-4.625296	0.0003***
*NB: ***, ** and * indicate statistical significance at 1%, 5% and 10% levels of significance, respectively.*				

The results of the Granger causality test estimated in an error correction framework specified as an ARDL-ECM model are presented in Table 5 above. The results indicate that the coefficient of the lagged error correction term (ECT (-1)) has the expected negative sign, is within the expected range of $-1 \leq ECT(-1) < 0$ and is statistically significant at 1% level of significance. This implies the existence of a stable long run relationship and points to a long run cointegration relationship between international tourism and exchange rates and economic growth in the long run. Hence, these results reaffirm the validity of the TLGH in the long run in Zimbabwe. The coefficient of the lagged error correction term is -0.586, implying that a deviation from the long run equilibrium following a short run shock is corrected by about 0.586% after one year. This speed of adjustment after a shock is comparatively high and is not only acceptable but also reasonable for a small open economy like Zimbabwe where international tourism is increasingly becoming the new economic powerhouse.

Furthermore, the results indicate the coefficient of international tourist arrivals is positive and statistically significant at 1% level of significance. An increase in international tourism development, (in the previous year), by 1% will more than proportionately increase economic growth by approximately 0.55%, also indicate short-run validity of the TLGH in Zimbabwe. This apparently means that promoting international tourism development will stimulate economic growth in Zimbabwe, not only in the long run but also in the short run. The coefficient of the nominal exchange rates is negative and statistically significant at 5% level of significance.

The estimated long run model in Table 5 has an acceptable goodness of fit with an adjusted R^2 of approximately 0.969. This implies that approximately 96.9 % of variation in international tourism is explained by changes in economic growth and exchange rates. The model is also correctly specified and the estimated parameters are stable as shown by reset tests and other diagnostic tests. The ARDL-ECM model passed all the necessary diagnostic tests, Heteroscedasticity, serial correlation and model specification, as shown in Table 5 since the probability values are insignificant.

5 Conclusion and Recommendations

Results supported the validity of the TLGH both in the short-run and long-run. The EDTGH was found to be valid only in the long run. The results of this study overwhelmingly endorse the argument initially made by this study that international tourism could be a root of escape to boosting the country’s economic performance. From a TLGH point of view, promoting international tourism; especially through long term strategic plans such as the country’s National Tourism Policy, National Tourism Master Plan and the National Tourism Strategy; will stimulate economic growth in Zimbabwe, both in the short-run and long-run. Thus, the Government of Zimbabwe should allocate more resources towards supporting tourism sector infrastructure such as road, rail and air transport networks and tourist sites such as the Victoria Falls and the Great Zimbabwe National Monument and other tourism related industries such as the crafts and design and pilgrimage industries, in order to grow the economy. As a result of COVDI-19 Tourism is one of the most affected sectors in the economy affecting economic livelihood of millions of people in Zimbabwe, government revenue and workers. Thus above policy recommendations must also consider the endogenous effect of COVID-19 on Tourism.

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