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# The contribution to economic growth by industry: The Case of Saint Lucia

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## Abstract

In order to alleviate the elevated poverty and crime rate in Saint Lucia, the relationship that exists between many economic variables like tourism and GDP per capita are some of the major concerns for the government of Saint Lucia. In this backdrop, the following study examines the long-run and short-run relationship among agriculture, industry, tourism, trade, services and economic growth in Saint Lucia over the period 1987–2017. Autoregressive distributed lag (ARDL) cointegration technique is used to analyze the relationship among the variables. We observe a positive influence of industry and tourism on economic growth. Based on the results we suggest to allocate more resources to the industry and tourism sectors from the agriculture sector.

**Keywords:** Industry; GDP per capita; Agriculture; Tourism; Trade; Services; ARDL

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# 1. Introduction

The tourism industry is the main driving force for the small islands and developing nations in the Caribbean. The once vibrant banana industry, which was one of Saint Lucia's main sources of foreign exchange has been devastated by the increased fluctuations in the banana prices, amplified competition from Latin America and reduced European Union banana trade preferences. Subsequently, Saint Lucia has been significantly dependent on the inflows from tourist receipts. Through foreign exchange earnings, tourist spending can contribute to the balance of payments. Subsequently, this income could provide an extraordinary part of the essential financing needed for the country to import more capital goods. These imports would play a fundamental role in the economy if they are capital goods (Balaguer & Cantavella–Jorda, 2000).

Vodenska (2013) pointed to tailored marketing of specialty products to consumers whose way of life is their chief characteristic. Subsequently, St. Lucia, has had a remarkable bearing on the weddings and honeymoon niche market. This has been accomplished due to increased efforts placed on developing a fitting brand image through the increased implementation of marketing campaigns. Increased FDI inflows have been targeted towards the further development of the tourism industry. Consequently, understanding the extent to which tourism contributes to economic growth in Saint Lucia has huge implications for the entire island.

Moreover, in recent years, the rate of tourism inflows have been increasing steadily but the most recent economic downturn had significant and lasting effects on the Saint Lucian economy. Specifically, the number of arrivals plummeted in 2008 due to the 2007-2008 financial crisis. Unemployment levels soared as the tourism industry declined. According to the ILO's modeled estimate, during the 2007-2018 period, the unemployment levels peaked in 2015 at 24.09% after beginning its ascent in 2008. Moreover, the September 11th terrorist attacks on US soil did affect the island's tourist receipts and consequently, the number of tourist arrivals to Saint Lucia dipped slightly due to the increased fear of travelers who travel by plane. In addition, the real GDP per capita growth rate after the financial crisis has been relatively sluggish and stagnant after plummeting to -2.11 in 2009. The economy has seen a slight recovery in recent years but the growth rates appear to be unstable. Although plagued by numerous economic and social ills like slow GDP growth rates, high unemployment levels and an extensive government debt, Saint Lucia is seen to many investors as one of the best islands in the Caribbean to set up a business. In fact, a great majority of FDI comes from the core markets of Europe and the United States. Moreover, according to the World Bank's Ease of doing Business Report (2019), Saint Lucia ranks 93rd in the world and the 3rd in the Caribbean.

Although, the Global FDI may be wavering, the Caribbean region is still seen as attractive to overseas investors due to its thriving tourism sector. In fact, Saint Lucia has seen a significant increase in tourism-related projects in 2017. According to a News Report posted in August 2018, entitled "Trends in FDI" by one of the largest

publishing & printing houses in the OECS, The Star, numerous developments have been completed and announced in 2017. Moreover, it is expected that a number of new hotel rooms will increase to approximately 2,000 by 2021.

In retrospect, although the island is afflicted by high unemployment levels, low and stagnant GDP growth levels, the Saint Lucian government is trying to alleviate the aforementioned problems by implementing a number of policies and creating a wide array of new incentives in order to attract more FDI into the tourism industry. It is believed that by doing this, the problem of high unemployment levels will dwindle. However, this has been their action plan for many years and the economic and social problems on the island are showing little signs of improvement. Therefore, this led me to try to uncover the long-run relationship and various sector's contribution to GDP.

## 2. Literature Review

Numerous researchers have studied the economic importance of the tourism industry on the economic growth of a country. Chi-Ok Oh (2005) examined the inter-relationship between economic growth and tourism in the case of Korea. Bivariate Vector Autoregression (VAR) and Engle and Granger two-stage approach were used in order to examine the relationship between tourism and economic growth. He found a one-way causal connection of economic-driven tourism growth. Additionally, no long run relationship was observed between the two variables. Kim, Chen and Jang (2006) conducted a similar study investigating the relationship between economic development and tourism expansion in Taiwan. They adopted the cointegration approach and conducted a Granger causality test in order to reveal the direction of causality between tourism expansion and economic growth. They found that there existed a bi-directional causality between the two factors.

Marin (1992) concluded that when tourism exhibits an influence across the entire economy in the form of spillovers and other externalities, then tourism-led growth would have occurred. Moreover, Balaguer and Cantavella–Jorda (2000) examined the tourism-led growth hypothesis and found that there exists a long-run stable relationship between tourism expansion and economic growth. The existence of long-run multiplier effects were also uncovered. Support for the tourism-led growth can also be found in the paper written by Gunduz, L., & Hatemi-J, A. (2005). The use of leveraged bootstrap causality tests to analyze the interaction between tourism and economic growth led to the conclusion that empirical support was found for tourism-led growth hypothesis in the case of Turkey.

Lee and Chang (2008) reinvestigated the causal relationships and long-run comovements between economic growth and tourism growth for both OECD and non- OECD countries. The new heterogeneous panel cointegration technique was utilized to analyze data for the period 1990–2002. They found that tourism development did have an impact on GDP. In fact, non-OECD countries' tourism development had a more substantial effect on GDP than OECD countries. The results of the panel causality test also demonstrates the differing relationship which

exists between OECD and non-OECD countries. Specifically, in the long-run, bidirectional relationships exist between tourism development and economic growth in non-OECD countries. However, in OECD countries, there exists unidirectional causality from tourism development to economic growth.

Moreover, as already pointed out, Saint Lucia is heavily dependent on tourist receipts and so studies like the one conducted by Lanza, Temple and Urga (2003) examined the effects of tourism specialization in the long-run. They found that tourism specialization may not harm long-run growth. However, long run cointegrating relationships exists and this demonstrates that GDP and tourism development have a minimum of one causal relationship. Also, the importance of tourism to Greece was emphasized by Nikoli and Lazakidou (2019) when they acknowledged the significance of the tourism industry to the Greek economy and further proposed increasing diversification in order to amass greater gains from tourism.

Eugenio-Martin and Morales (2011) analyzed the tourism and economic growth in Latin American Countries and he demonstrated how the growth in tourism was associated with economic growth for medium or low-income countries, however, this is not necessarily the case for developed countries. They also illustrated a number of prerequisites which are needed in low-income countries in order to bolster the tourist arrivals, such conditions include, satisfactory levels of education and infrastructure.

Many islands in the Caribbean are heavily dependent on tourist receipts. Aruba like Saint Lucia is a small island developing state that implements numerous policies in order to increase on tourist arrivals. In the mid-1980s, Aruba experienced an economic crisis and in order to alleviate the economic turmoil, the government placed heavy reliance on the tourism industry. The transition proved to be quite fruitful as Vanegas and Croes (2003) found evidence that tourism in Aruba can create an immense and desirable impact on the economy. Moreover, export-led growth based on tourism has in fact provided innumerable benefits to the economy. Furthermore, swift integration into the international market warrants government intervention.

Liu and Wu (2019) examined tourism productivity and economic growth in Spain and found that an improvement in tourism productivity can increase real GDP growth. They also concluded that when an enhancement in the tourism sector's productivity occurs, domestic tourism demand surpasses that of inbound tourism. The opposite is true when the economy's productivity improves. In addition, Brida, Cortes-Jimenez and Pulina (2014) confirmed the tourism-led growth hypothesis with a few exceptions and subsequently concluded that further promotion of tourism activity would provide a myriad of benefits.

Additional studies investigating the relationship between GDP and other industries have been quite extensive in recent years. D. Jain, Nair and V.Jain (2015) studied the impact of various macro-economic variables on GDP components in India. They discovered that there was no substantial effect on GDP components. However, services did prove to have a significant effect on the components of GDP. A high

correlation exists between agriculture and services and GDP growth in India (Dasgupta and Singh, 2005). Samad (2018) explored the causal relationship between economic growth and trade and concluded that economic growth Granger caused trade in Thailand and Indonesian.

Like Aruba, Saint Lucia did undergo a transition from heavy dependence on agriculture to tourism. The island did attain numerous benefits from the once vibrant banana trade. Established literature have provided confirmation that agricultural growth is an impetus for economic development and poverty reduction (Christiaensen et al., 2011). However, proposed is the view by Lewis (1954) that resources and labor were to be drawn from the agricultural sector in order to stimulate the vibrant productive industrial sector. Lewis referred to the agricultural sector as a backward unproductive subsistence sector.

A dissimilar view was proposed by Johnston and Mellor (1961) of agriculture as being a leading sector. They emphasized that this was especially the case during the early developmental stages. They further accentuated that although agriculture may grow at a slower pace compared to the non-agriculture sector, it did however provide significant contributions to the growth in other areas.

Benfica, Cunguara, Thurlow (2018) adopted an economy wide approach in order to examine the country's investment plan for the period 2012-2017 and their simulation results showed that in spite of the doubling of public spending on agriculture, the aforementioned investment plan would not be able to achieve the targets for national growth. Instead they posited the view that a relocation of resources to agricultural research and the provision of extension services should have been done by the government.

Zhao and Tang (2018) adopted a model developed by Tang and Wang (2004) in order to determine agriculture's contribution to China's real GDP growth rate. Based on this framework, the contribution to real GDP by agriculture is achieved through enhancements in the relative price of gross output or through growth in real gross output. During the 1982 to 2008 period, agriculture contributed 1.1% points out of the 9.4% real GDP growth rate in China per year. Out of the real GDP growth in China, 1.1% points accounted for 10.6%. The authors further concluded that compared to developed countries, China's agricultural shares of its employment and nominal GDP are significantly higher.

# 3. The Methodology and Data

## 3.1 The data

This paper has integrated a number of significant variables, such as agriculture, industry, tourism, trade, services and GDP growth rate. Annual data over the 1987–2017 period were retrieved from the World Bank, World Development Indicators (WDI) and the Central Statistical Office of Saint Lucia. Moreover, economic growth is proxied by GDP growth rate.

### 3.2 Choice of variables

GDP per capita: The World Bank (2019) defines GDP per capita as "the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products." In order to attain the GDP per capita, GDP is divided by the midyear population.

Trade: Trade is defined as the summation of imports and exports of goods and services. It is calculated as a share of GDP (World Bank, 2019).

Industry (Ind): Industry includes the "value added in mining, manufacturing, construction, electricity, water, and gas. Value added is the net output of a sector after adding up all outputs and subtracting intermediate inputs" (World Bank, 2019).

Services (Serv): Services comprise of "value added in wholesale and retail trade (including hotels and restaurants), transport, and government, financial, professional, and personal services such as education, health care, and real estate services. Also included are imputed bank service charges, import duties, and any statistical discrepancies noted by national compilers as well as discrepancies arising from rescaling" (World Bank, 2019).

Agriculture (Agri): Agriculture includes the following, "forestry, hunting, and fishing, as well as cultivation of crops and livestock production" (World Bank, 2019)

Tourism: "International tourism receipts are expenditures by international inbound visitors, including payments to national carriers for international transport. These receipts include any other prepayment made for goods or services received in the destination country. They also may include receipts from same-day visitors, except when these are important enough to justify separate classification. For some countries they do not include receipts for passenger transport items" (World Bank, 2019).

### 3.3 Methodology

In order to study the relationship among the variables we employ ARDL model as suggested by Pacheco-Lo′pez (2005), Verma (2007) and Shrestha and Chowdhury (2005). Subsequently, this paper examines the relationship which exists among agriculture, industry, tourism, trade, services and economic growth in Saint Lucia over 1987–2017 in both the short run and long run. The latest and most robust ARDL bound test estimation test is utilized in order to analyze the relationship among the aforementioned variables (Pesaran et al., 2001). Before the ARDL estimation technique is implemented, there are a number of prerequisites which should be satisfied. Heteroscedasticity and auto correlation problems should not be present in the data. Moreover, the presence of any variable which is stationary at

l(2) will give spurious results. Subsequently, the data should be stationary at either I(0) or I(1) or on both. As a result, in order to avoid spurious results, I(2) variables should not be included in the model.

Ghatak & Siddiki (2001) posited that the ARDL model is the most appropriate method to test co-integration for a small sample size. Moreover, problems of endogeneity and serial correlation by an appropriate amplification are avoided by the ARDL model.

The Empirical Model adopted in this paper is as follows:

$$\text{growth}_t = \alpha_0 + \beta_0 Ind_t + \beta_1 Agri_t + \beta_2 Serv_t + \beta_3 Tour_t + \beta_4 Trade_t + \varepsilon_t \quad (1)$$

Where:

$Growth_t$ =log of GDP per capita at time t, expressed in US dollars

$Ind_t$= log of industry at time t, expressed in US dollars

$Serv_t$= log of services at time t, expressed in US dollars

$Agri_t$=log of agriculture at time t, expressed in US dollars

$TOUR_t$= log of tourist expenditure at time t, expressed in US dollars

$Trade_t$ = log of trade at time t, expressed in US dollars

t= represents the time from 1987–2017

ε= represents the error term and

$\beta_0$, $\beta_1$, $\beta_2$, $\beta_3$ and $\beta_4$ are the relevant parameters

The descriptive statistics for the variables are reported in the Table 1. Thereafter, the application of ADF test (Dickey and Fuller 1979) through Akaike Information Criterion (AIC) with constant is conducted in order to check the stationarity of all the variables. Subsequently, heteroscedasticity and serial correlation- LM were tested in order to ascertain the model's goodness of fit. Moreover, the ARDL bound testing approach was used to test whether there exists long-run cointegration among the variables. Finally, the short and long-run relationships are ascertained.

# 4. Findings and Discussion

## 4.1 Descriptive analysis

We present descriptive statistics in table 1 which contains mean, median, maximum, minimum and standard deviation values for all the variables. As indicated in the table 1, the agriculture sector has the lowest values among all the variables. Agriculture made almost 15% of GDP during the 1980's but now it has decreased to almost 3% of GDP. As a result of that, a higher standard deviation can also be seen in the case of agriculture.

Bananas were once Saint Lucia's main export crop and thus the island was heavily dependent on banana export. Bananas became Saint Lucia's major export crop by 1957 when it exceeded sugar which was previously the major export crop. The industry was a main source of foreign exchange for the island. Moreover, banana production is labor intensive and thus, it was once a major employer of the rural

labor force. However, the industry was plagued by low prices and rising costs. Moreover, the crop is in abundance in the African and Latin American region and consequently, this posed a threat to the Caribbean's banana exports to the British market which imports a great portion of fruits from the Caribbean region. Subsequently, the perishable nature of the bananas and its increased supply has led to a reduction in the price. Consequently, many Caribbean islands, including Saint Lucia have turned to tourism as their main source of foreign exchange hence the reason why agriculture's contribution to GDP has dwindled.

Furthermore, GDP appears to have a comparatively lower standard deviation which illustrates that the data was less dispersed and demonstrates the comparatively steadier and gradual growth of the island's GDP over the years. However, the standard deviation for tourism appears to be quite high which indicates the wide dispersion of the distribution. Over the years, the tourism industry has been affected by the huge swings in the global economy and demand. Specifically, the September 11th terrorist attacks on US soil led the number of tourist arrivals to Saint Lucia to decline slightly due to the amplified fear of travelers who travel by plane. Additionally, the substantial decline in tourist arrivals in 2006 can be attributed to a drop in arrivals from Saint Lucia's European markets specifically, Germany, France and the UK as many of those individuals chose to attend the 2006 FIFA world cup during the time they would usually choose to travel to the island. Of course, as predicted the number of arrivals plummeted after 2008 due to the 2007-2008 financial crisis. On the other hand, services appears to possess the lowest standard deviation which illustrates the distribution is less polarized.

**Table 1: Descriptive statistics**

| Variables | LOGGDP | LOGINDU | LOGAGRI | LOGSERVI | LOGTOUR | LOGTRADE |
|---|---|---|---|---|---|---|
| Mean | 8.890977 | 18.75891 | 1.409041 | 4.256608 | 6.730338 | 4.6335 |
| Median | 8.887131 | 18.75715 | 1.348029 | 4.26372 | 6.637649 | 4.617592 |
| Maximum | 9.063673 | 19.06253 | 2.418633 | 4.328121 | 7.610794 | 4.878299 |
| Minimum | 8.526016 | 18.18496 | 0.630766 | 4.123727 | 5.715382 | 4.405952 |
| Std. Dev. | 0.122252 | 0.215308 | 0.553493 | 0.052948 | 0.536211 | 0.120342 |
| Skewness | -1.0196 | -0.75397 | 0.219836 | -0.75924 | 0.097923 | 0.103628 |
| Kurtosis | 4.062652 | 3.063363 | 1.807666 | 2.995742 | 2.096326 | 2.525519 |
| Jarque-Bera | 6.82982 | 2.94225 | 2.086005 | 2.978303 | 1.068727 | 0.335109 |
| Probability | 0.032879 | 0.229667 | 0.352395 | 0.225564 | 0.586042 | 0.84573 |
| Observations | 31 | 31 | 31 | 31 | 30 | 30 |

Source: Authors' Calculation

### 4.2 Unit root test

Since, non-stationarity in the data can lead to spurious regression results so we check the stationarity of all the variables by applying ADF test (Dickey and Fuller 1979) through Akaike Information Criterion (AIC) with constant. All the variables are non-stationary at level, however, they become stationary at first difference

indicating ARDL as a suitable method. Also, ARDL model suggested that all variables should be stationary in I (0) and I (1) or I (1) for running the model. The results of the unit root test are reported in table 2.

**Table 2: ADF Unit root test**

| | Level | | 1st Difference | |
|---|---|---|---|---|
| | t-statistics | p-value | t-statistics | p-value |
| GDP | -3.77512 | 0.0077*** | -5.40703 | 0.0001*** |
| Ind | -2.44932 | 0.1379 | -8.73716 | 0*** |
| Agr | -1.38642 | 0.5738 | -5.81193 | 0.0001*** |
| Serv | -1.73006 | 0.4065 | -7.06811 | 0*** |
| Tour | -1.23343 | 0.646 | -5.83384 | 0.0001*** |
| Trade | -1.01743 | 0.7335 | -7.56504 | 0*** |
| *, ** and *** shows significance at 1%, 5% and 10% respectively | | | | |

Source: Authors' Calculation

### 4.3 ARDL bound test approach

Results for ARDL bound test are presented in table 3. The table shows the value of F-statistics to be 4.200096 which is higher than upper bound (1) and lower bound I(0). That indicates that there is a long run cointegration among the variables and hence we find the long run cointegration relationship among the variables. Narayan (2005) pointed out the importance of the F-statistic being higher than the upper bound (1) and lower bound (0), otherwise the results will prove to be inconclusive.

**Table 3: ARDL bound test approach**

| K | F-statistic | Significance | Lower Bound I (0) | Upper Bound I (1) |
|---|---|---|---|---|
| 5 | 4.200096 | 10% | 2.26 | 3.35 |
| | | 5% | 2.62 | 3.79 |
| | | 2.50% | 2.96 | 4.18 |
| | | 1% | 3.41 | 4.68 |

Source: Authors' Calculation

### 4.4 Robustness

The following table, presents the results from the diagnostic tests ran. Breusch–Godfrey Serial Correlation LM Test, presented in Table 4, confirms no serial correlation. Furthermore, results also indicate the absence of autoregressive conditional heteroskedasticity suggesting that the model is robust and fits well.

**Table 4: Robustness**

| | $R^2$ | F-Statistics | Probability |
|---|---|---|---|
| Breush-Godfrey Serial Correlation LM Test | 2.970601 | 0.949476 | 0.4077 |
| Breusch Pagan Godfrey (Heteroskedasticity) | 11.87591 | 1.473064 | 0.2311 |
| Glesjer (Heteroskeadasticity) | 11.59997 | 1.414628 | 0.2533 |

Source: Authors' Calculation

### 4.5 Long Run Estimates

Subsequent to the results attained in Table 3, the long-run relationship can now be ascertained in the model. We find a positive significant relationship between tourism and gross domestic product indicating that tourism has a positive effect on the GDP of St. Lucia. Although this effect is relatively small, it contributes to the economic growth of the country. St. Lucia's tourism industry plays a vital role in the economic growth of the country and in the well-being of the people. On the other hand, the agriculture sector of the economy is negative and significant. This result can be attributed to the fact that agriculture's contribution to GDP has been on the decline while GDP has been gradually increasing over the years.

However, the viewpoint posited by Chang Pei-kang (1949) is agricultural development plays a vital role in industrialization. The gradual decline in Saint Lucia's agriculture sector is certainly less than ideal in that regard. Nevertheless, agriculture's role in attaining viable economic growth is still arguable. In the case of agriculture, the economy of the country resembles some African countries, where a negative relationship is found between agriculture and GDP (Benson and Clay 1994). Service sector and trade are found to be insignificant for the period chosen for the analysis.

**Table 5: Long-run estimates for the coefficients: GDP per capita as a dependent variable**

| **Variables** | **Coefficient** | **Std. Error** | **t-Statistic** | **Probability VALUE** |
|---|---|---|---|---|
| **LOG(IND)** | 2.016459 | 0.130611 | 15.43866 | 0.0000*** |
| **LOG(SERV)** | -0.07093 | 0.106703 | -0.66472 | 0.5147 |
| **LOG(AGR)** | -0.03535 | 0.016048 | -2.20287 | 0.0409** |
| **LOG(TOUR)** | 0.037491 | 0.010467 | 3.58174 | 0.0021*** |
| **LOG(TRADE)** | 0.009951 | 0.033575 | 0.296377 | 0.7703 |
| | -1.90777 | 0.15333 | -12.4423 | 0.0000*** |
| *, ** and *** show significance at 1%, 5% and 10% respectively | | | | |

Source: Authors' Calculation

The results presented in table 5 above also shows that the lagged error correction term, which shows the speed of adjustment of coefficient towards equilibrium, is negative and significant. This indicates that adjustments are corrected every year at a faster rate from the short term to the long term to reach towards the equilibrium economic growth.

## 5. Conclusion

The main aim of the following study was to investigate the existence of any relationship between tourism and economic growth. The various industries' contributions to economic growth were also examined. Results suggest strong evidence of the influence of tourism on the economic growth of Saint Lucia. Industry also plays a vital role in the development of Saint Lucia. However, there exists a negative relationship between agriculture and economic growth. A similar negative relationship had also been observed in the case of some African countries. The negative behavior between agriculture and economic growth needs further investigation.

We also suggest that labor should be moved from agriculture to other sectors of the economy as there possibly exists a problem of over employment in the agricultural sector. Perhaps further contributions to tourism and industry would yield favorable results as their contributions to economic growth are positive. Although, the work of Chang Pei-kang (1949) emphasized the importance of agricultural development in industrialization, the results yielded in this study uncovered the negative relationship between agriculture and economic growth. This result can be attributed to the oversupply of crops to the European market from African and Latin American countries. This has led to a reduction in prices while costs soar. In an attempt to maintain foreign exchange inflows, the island's focus has shifted from agriculture to tourism. Consequently, this negative relationship can be explained by the gradual increase in GDP and steady decline in agriculture.

## References

[1] Balaguer, J., & Cantavella-jordá, M. (2000). Tourism as a long-run economic growth factor : the Spanish case Tourism as a long-run economic growth factor : the Spanish case. Tourism, (October 2011), 37–41. Retrieved from http://web2011.ivie.es/downloads/docs/wpasec/wpasec-2000-10.pdf

[2] Benfica, R., Cunguara, B., & Thurlow, J. (2019). Linking agricultural investments to growth and poverty: An economywide approach applied to Mozambique. Agricultural Systems, 172, 91–100. https://doi.org/10.1016/j.agsy.2018.01.029

[3] Benson, C., & Clay, E. (1994). The Impact of Drought on Sub-Saharan African Economies. IDS Bulletin, 25(4), 24–32. https://doi.org/10.1111/j.1759-5436.1994.mp25004004.x

[4] Brida, J. G., Cortes-Jimenez, I., & Pulina, M. (2014). Has the tourism-led growth hypothesis been validated? A literature review. Current Issues in Tourism, Vol. 19, pp. 394–430. https://doi.org/10.1080/13683500.2013.868414
[5] CEPAL(ECLAC). (2017). Preliminary Overview of the Economies of Latin America and the Caribbean.
[6] CEPAL(ECLAC). (2018). Preliminary Overview of the Economies of Latin America and the Caribbean.
[7] Chang, P.-K. (1949). Agriculture and industrialization. In Agriculture and Industrialization. Cambridge, Massachusetts: Harvard University Press.
[8] Christiaensen, L., Demery, L., & Kuhl, J. (2011). The (evolving) role of agriculture in poverty reduction-An empirical perspective. Journal of Development Economics, 96(2), 239–254. https://doi.org/10.1016/j.jdeveco.2010.10.006
[9] Dasgupta, S., & Singh, A. (2005). Will services be the new engine of Indian economic growth? Development and Change, 36(6), 1035–1057. https://doi.org/10.1111/j.0012-155X.2005.00449.x
[10] Diao, X., Hazell, P., & Thurlow, J. (2010). The Role of Agriculture in African Development. World Development, 38(10), 1375–1383. https://doi.org/10.1016/j.worlddev.2009.06.011
[11] Dickey, D. A., & Fuller, W. A. (1979). Distribution of the Estimators for Autoregressive Time Series With a Unit Root. Journal of the American Statistical Association, 74(366), 427. https://doi.org/10.2307/2286348
[12] Eugenio-Martin, J. L., Martín Morales, N., & Scarpa, R. (2011). Tourism and Economic Growth in Latin American Countries: A Panel Data Approach. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.504482
[13] Ghatak, S., & Siddiki, J. U. (2001). The use of the ARDL approach in estimating virtual exchange rates in India. Journal of Applied Statistics, 28(5), 573–583. https://doi.org/10.1080/02664760120047906
[14] Gottlieb, C., & Grobovšek, J. (2019). Communal land and agricultural productivity. Journal of Development Economics, 138, 135–152. https://doi.org/10.1016/j.jdeveco.2018.11.001
[15] Gunduz, L., & Hatemi-J, A. (2005). Is the tourism-led growth hypothesis valid for Turkey? Applied Economics Letters, 12(8), 499–504. https://doi.org/10.1080/13504850500109865
[16] Jain, D., Nair, K. S., & Jain, V. (2015). Factors Affecting GDP (Manufacturing, Services, Industry): An Indian Perspective. Studies Pune Annual Research Journal of Symbiosis Centre for Management Studies Annual Research Journal of SCMS, 3(3), 38–56. Retrieved from https://scmspune.ac.in/chapter/Chapter 3.pdf
[17] Johnson, D. G. (1993). Role of agriculture in economic development revisited. Agricultural Economics, 8(4), 421–434. https://doi.org/10.1016/0169-5150(93)90044-D

[18] Johnston, B., Mellor, J. (1961). The role of agricultural in economic development. The American Economic Review(4), 566–593.
[19] Kim, H. J., Chen, M. H., & Jang, S. C. S. (2006). Tourism expansion and economic development: The case of Taiwan. Tourism Management, 27(5), 925–933. https://doi.org/10.1016/j.tourman.2005.05.011
[20] Kwofie, C., & Ansah, R. K. (2018). A Study of the Effect of Inflation and Exchange Rate on Stock Market Returns in Ghana. International Journal of Mathematics and Mathematical Sciences, 2018. https://doi.org/10.1155/2018/7016792
[21] Lanza, A., Temple, P., & Urga, G. (2003). The implications of tourism specialisation in the long run: An econometric analysis for 13 OECD economies. Tourism Management, 24(3), 315–321. https://doi.org/10.1016/S0261-5177(02)00065-1
[22] Lee, C. C., & Chang, C. P. (2008). Tourism development and economic growth: A closer look at panels. Tourism Management, 29(1), 180–192. https://doi.org/10.1016/j.tourman.2007.02.013
[23] Lewis, W. (1954). Economic development with unlimited supply of labor. 22(2), 139-191. doi:https://doi.org/10.1111/j.1467-9957.1954.tb00021.x
[24] Lin, C. Y.-Y., Edvinsson, L., Chen, J., & Beding, T. (2013). National Intellectual Capital and the Financial Crisis in China, Hong Kong, Singapore, and Taiwan. In Springer Briefs in Economics (Vol. 8). https://doi.org/10.1007/978-1-4614-5984-2
[25] Liu, A., & Wu, D. C. (2019). Tourism productivity and economic growth. Annals of Tourism Research, 76, 253–265. https://doi.org/10.1016/j.annals.2019.04.005
[26] Marin, D. (1992). Is the export-led hypothesis valid for industrialized countries? Review of Economics and Statistics, 74, 678-688.
[27] Matsuyama, K. (1996). Agricultural productivity and economic growth: Empirical analys is on the contemporary developing countries. Journal of Economic Theory, 58(2), 317–334.
[28] Morris, C. (2018). Trends in FDI. Retrieved from The Star: https://stluciastar.com/trends-in-fdi/
[29] Narayan, P. K. (2005). The saving and investment nexus for China: Evidence from cointegration tests. Applied Economics, 37, 1979–1990. doi:10.1080/00036840500278103
[30] Nikoli, G., & Lazakido, A. (2019). The contribution of Tourism to the greek economy: Case of the Greek Tourism Sector. Advances in Management & Applied Economics, 9(6), 21–28. Retrieved from https://www.scienpress.com/journal_focus.asp?main_id=55&Sub_id=IV&Issue=1155215
[31] Oh, C. O. (2005). The contribution of tourism development to economic growth in the Korean economy. Tourism Management, 26(1), 39–44. https://doi.org/10.1016/j.tourman.2003.09.014

[32] Pacheco-López, P. (2005). The effect of trade liberalization on exports, imports, the balance of trade, and growth: The case of Mexico. Journal of Post Keynesian Economics, 27(4), 595–617. https://doi.org/10.1080/01603477.2005.11051459

[33] Pacheco-López, P., & Thirlwall, A. P. (2007). Trade liberalisation and the trade-off between growth and the balance of payments in Latin America. International Review of Applied Economics, 21(4), 469–490. https://doi.org/10.1080/02692170701474587

[34] Pesaran, M. H., Shin, Y. and Smith, R. P. . (2001). Bounds testing approaches to the analysis of level relationships. Journal of Applied Econometrics, 16, 289-326.

[35] Samad, A. (2018). Is Trade an Engine of Growth ? VEC-Granger Causality Evidence from ASEAN Countries. Advances in Management & Applied Economics,8(6),1–15.Retrievedfrom https://www.scienpress.com/journal_focus.asp?main_id=55&Sub_id=IV&Issue=759647

[36] Shrestha, M., & Chowdhury, K. (2005). ARDL Modelling Approach to Testing the Financial Liberalisation Hypothesis. In Economics Working Papers.

[37] Spencer, A. (2018). Travel and Tourism in the Caribbean. In Travel and Tourism in the Caribbean. https://doi.org/10.1007/978-3-319-69581-5

[38] Spencer, A., & Spencer, A. (2019). Tourism and Economic Realities in the Caribbean. In Travel and Tourism in the Caribbean (pp. 47–71). https://doi.org/10.1007/978-3-319-69581-5_3

[39] Tang, J., & Wang, W. (2004). Sources of aggregate labour productivity growth in Canada and the United States. Canadian Journal of Economics, 37(2), 421–444. https://doi.org/10.1111/j.0008-4085.2004.00009.x

[40] The World Bank. (2019). Doing Business 2019. In World Bank. https://doi.org/10.1596/978-1-4648-1326-9

[41] Uzun, V., Shagaida, N., & Lerman, Z. (2019). Russian agriculture: Growth and institutional challenges. Land Use Policy, 83, 475–487. https://doi.org/10.1016/j.landusepol.2019.02.018

[42] Vanegas, M., & Croes, R. R. (2003). Growth, development and tourism in a small economy: evidence from Aruba. International Journal of Tourism Research, 5(5), 315–330. https://doi.org/10.1002/jtr.441

[43] Verma, R. (2007). Savings, investment and growth in India: An application of the ARDL bounds testing approach. South Asia Economic Journal, 8(1), 87–98. https://doi.org/10.1177/139156140600800105

[44] Vodenska, M. (2013). New Marketing Approaches and Emerging Tourism Products. International Journal of Management Cases, 15(4), 122–132.

[45] World Bank. (2019). Doing Business 2019: Training for Reform. In World Bank. https://doi.org/10.1596/978- 1-4648-1326-9

[46] World development indicators (WDI). (2019). Retrieved from World Bank: https://databank.worldbank.org/data/source/world-development-indicators

[47] Zhang, L., Pang, J., Chen, X., & Lu, Z. (2019). Carbon emissions, energy consumption and economic growth: Evidence from the agricultural sector of China's main grain-producing areas. Science of the Total Environment, 665, 1017–1025. https://doi.org/10.1016/j.scitotenv.2019.02.162

[48] Zhao, J., & Tang, J. (2018). Understanding agricultural growth in China: An international perspective. Structural Change and Economic Dynamics, 46, 43–51. https://doi.org/10.1016/j.strueco.2018.03.006