

# Effect of Tourism on Irrational Industrialization Causing Dutch Disease

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## Abstract

This paper discuss about the effect of tourism on irrational industrialization causing Dutch Disease. We use regression coefficients of the SYS-GMM regression method then analyze the industrial structure effects of tourism development of eight (8) COMESA countries members during the period of 2003 to 2017, applying panel data approach. The result demonstrates that Dutch disease effect are significant and the temporal and spatial differences are obvious. This brings us to conclude that Tourism sector needs support and directive from the government, and decision maker ,they should seek for what help the Tourism to avoid any anomaly in the economy.

**Keywords:** Tourism, COMESA countries, Dutch disease

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## 1. INTRODUCTION

The Dutch disease phenomenon refers to the adverse effects of the supply of natural resources and production in tradable sectors specifically the manufacturing sector. Corden and Neary (1982) and Corden (1984) developed the core model of the Dutch disease that it explains a large amount of foreign money to inside the country will appreciate real exchange rate and cause both the spending and reallocation of resources between non-tradable and tradable sectors that it will lead the country to de-industrialisation.

The Dutch disease is generally related to the export of natural resources; however, it can be caused by any factors that increase the flow of foreign currency into a country. According to Copelend (1991), the tourism sector is one of the most important sectors that can be the cause of the Dutch disease. Holzner (2010) called the effect of the Dutch disease on tourism-dependent countries the —Beach Disease.

Formed in December 1994; COMESA was created to serve as an organization of free independent sovereign States that have agreed to cooperate in developing their natural and human resources for the good of all their people. It is the largest regional economic organization in Africa, with 19 member states and a population of about 390 million which the majority are from rural area and it includes: Burundi – Comoros - D.R. Congo - Djibouti - Egypt – Eritrea – Ethiopia – Kenya – Libya – Madagascar – Malawi – Mauritius – Rwanda – Seychelles – Sudan – Swaziland – Uganda – Zambia – Zimbabwe.). As the block has a great potential on tourism because of its countries members historic and geographic situations; it is important to analyze in what way this sector benefits COMESA to sidestep any disorder on its economic growth.

The aim of this study is to investigate whether the growing of tourism sector in COMESA Countries has caused resource movement and a spending effect that have led their economy to experience the Dutch disease.

## 2. Literature review

Tuncay N, Özcan C (2020) discuss about The effect of Dutch disease in the tourism sector: The case of Mediterranean countries. Purpose - A flourishing tourism sector can produce the same increase in income as that from natural resource exports. Unlike the oil, gas, and mineral extraction industries, which cause depletion of natural resources, the tourism industry has the potential to become a renewable industry, if well managed. In this context, the aim of this study is to investigate the existence of the Dutch disease effect in Mediterranean countries with high tourism dependence. Design - The data set used in this study was from 1996-2015, and it was obtained from the 2017 World Development Indicator [WDI] database. The logarithms of all variables were added to the model. In the study, 17 selected Mediterranean countries (Albania, Algeria, Bosnia and Herzegovina, Cyprus, Croatia, Egypt, France, Greece, Italy, Israel, Lebanon, Malta, Morocco, Slovenia, Spain, Tunisia, and Turkey) were used. Methodology - In the study, the methods used by Figini and Vici (2009), Holzner (2011), Ghali and Fidrmuc (2015) are followed. In addition, Panel AMG, CCE co-integration estimators were used. Findings -The panel data analysis results for the country group imply that the Dutch disease does not exist overall but, on the

other hand, the country based results reveal existence of the Dutch disease in some of the Mediterranean countries (Albania, Bosnia and Herzegovina, Croatia, Egypt, Greece, Italy, Morocco, and Turkey). Originality of the Research - The originality of this study is twofold. First of all, to our knowledge, this is the first study investigating the Dutch disease in the Mediterranean countries.

Zhang H, Yang Y (2019) studying Prescription for the tourism-induced Dutch disease: A DSGE analysis of subsidy policies. Their study adopts an innovative macroeconomic modelling tool, dynamic stochastic general equilibrium modelling, to investigate the effects of external inbound tourism booms on the national economic account of a small open economy. The results confirm the existence of Dutch disease, but tourism booms also bring welfare gains to the destination country. We further model the effects of two strategies to mitigate the Dutch disease by assuming that the government can tax the tourism sector and subsidize the manufacturing sector in two ways: production subsidies and investment subsidies. The results show that the effectiveness of production subsidies is very modest, while investment subsidies can almost completely overturn the Dutch disease. In terms of welfare, investment subsidies lower welfare gains in the very short term, but the positive effects persist over the longer term, which is different from the production subsidy case. Last, practical implications are provided.

OJAGHLOU M (2019) talk about The Dutch disease phenomenon refers to the adverse effects of the supply of natural resources and production in the tradable sectors specifically the manufacturing sector. Corden and Neary (1982) and Corden (1984) developed the core model of the Dutch disease that it explains a large amount of foreign money to inside the country will appreciate real exchange rate and cause both the spending and reallocation of resources between non-tradable and tradable sectors that it will lead the country to de-industrialisation The Dutch disease is generally related to the export of natural resources; however, it can be caused by any factors that increase the flow of foreign currency into a country. According to Copelend (1991), the tourism sector is one of the most important sectors that can be the cause of the Dutch disease. Holzner (2010) called the effect of the Dutch disease on tourism-dependent countries the “Beach Disease”. The aim of this study is to investigate whether the growing tourism sector in Turkey has caused resource movement and a spending effect that have led the Turkish economy to experience the Dutch disease. The Turkish economy is one of the emerging markets that in the past few decades has experienced noticeable growth in the tourism sector, to the extent that, according to the World Travel and Tourism Council (WTTC, 2017), travel and tourism’s contribution to GDP in Turkey was 12.5% in 2016. By using several methods, such as non-linear and linear ARDL bounds tests and structural VAR, this study aims to investigate whether the Turkish economy experienced Beach Disease over the period from 1976 to 2017. Empirical evidence demonstrates that due to the growth of the tourism sector, the Turkish economy is suffering from symptoms of Beach Disease, such as de-industrialisation and resource allocation to non-tradable sectors. The results show that the Turkish economy has suffered from the Dutch disease due to a growing tourism sector, which has led to de-industrialisation and unstable long-term growth.

Cloquet I (2016) looks into tourism non-growth at the early stage of destination development, an under-researched phenomenon. More specifically, it examines the constraining effects of structural environment on tourism growth, with a focus on the leisure travel industry. The study involves the designing of a two-layered analytical framework, drawing on destination development theory and Jessop's strategic-relational approach to structure-agency. The framework is applied to the case of Gabon, using primary and secondary data collected through various techniques. The results highlight how the Dutch disease and institutional behaviours have determined most variables that directly affect destination development in the country. Although tourism is able to emerge in variety of forms in an unfavourable structural environment it cannot grow further. They also suggest that concentrating efforts on operational obstacles in such circumstances is unlikely to be fruitful unless power relationships and ruling elites' interests are directly addressed in business development strategies.

Inchausti-Sintes F (2015) talk about Tourism is seen as a possible substitute for weakened domestic demand and, thus, an opportunity for to economic revitalisation the economy. Nevertheless, tourism also has profound consequences on the economy at the microeconomic level regarding resource allocation, exchange rate appreciation and demand for non-tradable goods, which can trigger the so-called Dutch Disease. A recursive-dynamic CGE model is developed to assess this possibility. Tourism implies a boost in the economy, although the Dutch Disease acts at the sectoral level causing a shift in resources towards non-tradable sectors which may jeopardize productivity gains, generate a persistent appreciation of the real exchange rate and thus affect the economic growth in the long term.

Chao C, Sgro P (2013) discuss about An expansion of inbound tourism increases the demand for locally produced non-traded goods and services, thereby raising the relative prices of them. In the short run, the increase in tourism can bring benefits in terms of raising tax revenues, increasing sectoral employment and improving environmental quality. Nonetheless, in the long run, costs for the increase in tourism may arise. A tourism boom can cause ‘Dutch Disease’ in lowering capital formation of the non-tourism sectors. Moreover, the expansion of tourism can reduce foreign reserves of the economy. Therefore, how to balance the short-run benefits versus long-run costs is of concern to policy makers in attracting international tourists to the economy.

Holzner M (2011) analyses empirically the danger of a Dutch Disease Effect in tourism dependent countries

in the long run. Data on 134 countries of the world over the period 1970-2007 is used. In a first step the long-run relationship between tourism and economic growth is analysed in a cross-country setting. The results are then checked in a panel data framework on GDP per capita levels that allows to control for reverse causality, non-linearity and interactive effects. It is found that there is no danger of a Beach Disease Effect. On the contrary, tourism dependent countries do not face real exchange rate distortion and deindustrialisation but higher than average economic growth rates. Investment in physical capital, such as for instance transport infrastructure, is complementary to investment in tourism.

Tahir U, Deng Q, Li S, et al. (2011) presents a dynamic heterogeneous panel data model in which the reaction the real exchange rate to external finance includes interactions with the measure of trade openness, fiscal, monetary and nominal exchange rate policies of twenty-four primary-exporting Sub-Saharan African countries from 1978-2001. As expected, a rise international transfers by itself exerts an upward pressure on the real exchange rate. However, this estimated positive effect of capital inflows was offset by associated policy interventions to liberalise trade controls and address problems of credit rationing in private sector. This augurs well for the achievement of the Millennium Development Goals.

### 3. Empirical models

#### 3.1 Methodology

##### 3.1.1 Empirical Specifications

$$\text{LnPrimary} = \alpha_0 + \alpha_i + \alpha_t + \alpha_1 \text{LNTTA} + \alpha_2 \text{Control} + \varepsilon_{it}$$

$$\text{LnSecondary} = \alpha_0 + \alpha_i + \alpha_t + \alpha_1 \text{LNTTA} + \text{Control} + \varepsilon_{it}$$

$$\text{LnTertiary} = \alpha_0 + \alpha_i + \alpha_t + \alpha_1 \text{LNTTA} + \alpha_2 \text{Control} + \varepsilon_{it}$$

Where Primary is an indicator for proportion of primary industry in GDP; Secondary is an indicator for proportion of second industry in GDP; Tertiary is an indicator for proportion of second industry in GDP; LNTTA is an indicator for proportion of tourism revenue industry in GDP;  $\alpha_i$  is country fixed effect and  $\alpha_t$  is time fixed effects.

If  $\alpha_i + \alpha_t + \alpha_1 \geq 1$ , it means the growth rate of specific industry is faster or equal than tourism growth, thus a strong synergy exist between tourism and specific industry.

If  $0 \leq \alpha_i + \alpha_t + \alpha_1 < 1$ , it means the growth rate of specific industry is slower than tourism growth, thus a weak synergy exist between tourism and specific industry.

If  $\alpha_i + \alpha_t + \alpha_1 < 0$ , it means a dutch disease exists.

##### 3.2 Data Sources and Variable Definitions

The study used secondary data to analyze the effect of tourism on irrational industrialization causing dutch disease, the yearly variables for 14 years period from 2003 to 2017. The analysis used Primary as an indicator for proportion of primary industry in GDP; Secondary as an indicator for proportion of second industry in GDP; Tertiary as an indicator for proportion of second industry in GDP; LNTTA as an indicator for proportion of tourism revenue industry in GDP;  $\alpha_i$  as country fixed effect and  $\alpha_t$  as time fixed effects. All of our data are collected from world bank data base.

### 4. Empirical Results

#### 4.1 Analysis on tourism and industrial synergy

**Table1: The unit root test based on Panel Data**

VARIABLES	LL	IPS			LM				
	Period effect	No effect	period	Period effect	No effect	period	Period effect	No effect	period effect
Inprimary <sub>it</sub>	-2.3780	-3.0351		-1.6109	-1.8987		22.6874	0.0000	
Insecondary <sub>it</sub>	-2.1828	-4.7446		-1.4507	-1.5968		7.2496	0.0000	
Intertiary <sub>it</sub>	-1.0758	-3.3286		-1.3790	-1.4940		16.2797	0.0000	
Lnnta <sub>it</sub>	-1.8135	-3.5988		-1.5501	-1.9217		18.8036	0.0000	
Control <sub>it</sub>	-15.6203	-14.4207		-0.0285	-1.3211		23.5284	0.0000	

Source: Author

\* It is significant at the 5% level. In two tests LL and IPS have verified that there is no unit root in the panel data; primary sector, secondary sector and tertiary sector data are not included. But in LM test there is in panel data.

**Table2: The quantitative regression analysis of the industrial structure effect of tourism**

VARIABLES	lnprimary		lnsecondary		Intertiary	
	OLS	SYS-GMM	OLS	SYS-GMM	OLS	SYS-GMM
lnprimary <sub>it</sub>	-	-	-	-	-	-
	0.340(0.096)	1.598(0.724)				
lnsecondary <sub>it</sub>	-	-	0.982(0.008)	-	-	-
				3.907(0.816)		
Intertiary <sub>it</sub>	-	-	-	-	-	3.881(0.7699)
					0.024(0.846)	
Lnnta <sub>it1</sub>	0.000(0.972)	0.069(0.759)	-	-	-	-
Lnnta <sub>it2</sub>	-	-	0.012(0.021)	0.408(0.463)	-	-
Lnnta <sub>it3</sub>	-	-	-	-	-	-0.168(0.768)
					0.002(0.596)	
Control <sub>it1</sub>	0.007(0.303)	0.038(0.712)	-	-	-	-
Control <sub>it2</sub>	-	-	-	0.048(0.916)	-	-
			0.028(0.007)			
Control <sub>it3</sub>	-	-	-	-	0.001(0.813)	-0.083(0.778)
R-squared	0.9963	0.9935	0.8850	-1.2078	0.9711	0.4797
Adj-R2	0.9962	0.9933	0.8819	-10.2798	0.9703	0.4627

Source: Author

The test is significant at the 5% level of significance. Therefore, in comparison, the SYS-GMM regression method is a more effective method. Therefore, this study mainly uses the regression coefficients of the SYS-GMM regression method to analyze the industrial structure effects of tourism development. From the regression coefficients of the explanatory variables of the regression equation in Table , the regression coefficients of ln for the primary, second, are -1.598 and -3.907 <0, it means a dutch disease exist. And tertiary is 3.881 ≥1, meaning the growth rate of specific industry is faster or equal than tourism growth, thus a strong synergy exist between tourism and specific industry.

#### 4.2 An Analysis of Inequality Measures by Theil Index

This study also consists in seeing the difference of all the effects of tourism studied previously since the number of tourism, the number of population and the reception conditions are very different in each COMESA country.

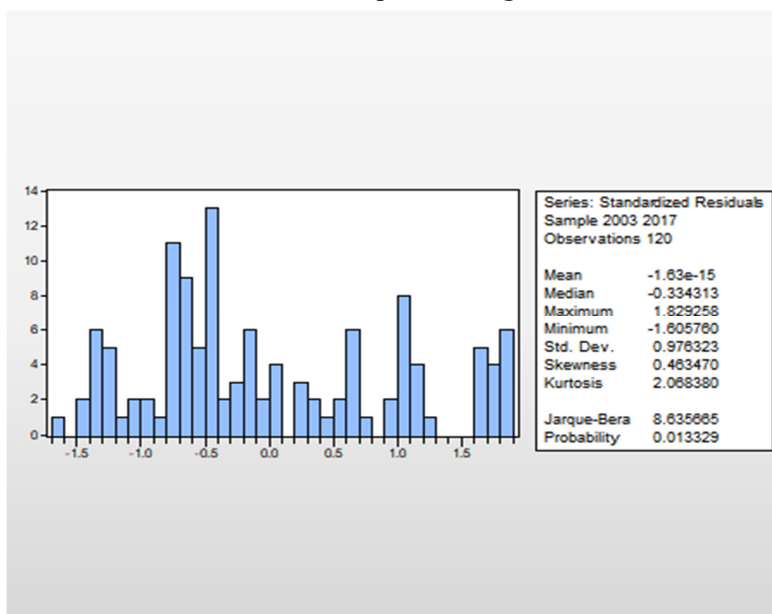
**Table3: Panel Least squares**

Variables	Coefficient	Std. Error	T-Statistic	Prob
LNNTA	0.238866	0.068817	3.4710447	0.0007
LNPOP	-0.122848	0.074097	-1.657941	0.1000
LNTTR	-0.470070	0.323536	-1.452914	0.1489
c	7.114719	1.876733	3.791013	0.0002
R-square	0.102902	Mean depend var		6.775707
Adjusted R-square	0.079701	S.D. dependent var		1.030798
S.E of regression	0.988868	Akaike info criterion		2.848253
Sum squared resid	113.4317	Schwarz criterion		2.941169
Log likelihood	-166.8952	Hannan-Quinn criter.		2.885986
F-statistic	4.435265	Durbin-Watson stat		0.193619
Prob( F-statistic	0.005458			

Source: Author

R-squared is 0.102902 < Durbin-Watson stat (0.193619), it confirms that the regression is not spurious. The probabilities of LNPOP (0.1000) and LNTTR (0.1489) are more than 5% of level of significant. Then, LNPOP and LNTTR cannot explain the variable LNGDP. But the probabilities of lnets (0.0000), and LNNTA (0.0007) are less than 5% of level of significant. So, LNNTA can explain the variable LNGDP. Prob( F-statistic) is significant.

**Graph 1: Histogram**



Source: Author

The result show that the probability equals to 1,3% less that 5% so we reject the null hypothesis ,In statistics, the Jarque–Bera is a goodness-of-fit test of whether sample data have the skewness and kurtosis matching a normal distribution. In our case here it is 8.63 far from zero, it signals the data do not have a normal distribution.

The kurtosis is 2.068 less than 3, then the dataset has lighter tails than a normal distribution. The skewness is 0.46 , it is positive, the data are positively skewed or skewed right, meaning that the right tail of the distribution is longer than the left.

## CONCLUSION

The main feature of the Dutch Disease, for whatever reason is, there is a large amount of foreign exchange entry into the country. Due to excessive foreign exchange inflows, national currency is valued, and overvalued national currency causes weakening of the external competitiveness of the country's industry and the country's economy is severely injured.

As the purpose of this research is to investigate whether the Dutch Disease exists or not in COMESA countries that have high dependence on tourism. Therefore, in this study, the existence of a long-term Dutch Disease effect was studied econometrically for some selected COMESA countries with high tourism dependence.

During the period of 2003-2017, econometric analyzes of the long-term effects of the

tourism sector on total production were made by using data from eight (8) COMESA countries. In the study, the econometric model was estimated by using the regression coefficients of the SYS-GMM regression method to analyze the industrial structure effects of tourism development .

The influence coefficient of the primary industry  $\ln nta$  is relatively large, reaching 0.069, indicating that the development of COMESA's  $\ln primary$  is still in the labor-intensive stage; the influence coefficient of the secondary industry  $\ln nta$  is relatively large, reaching 0.408, indicating that COMESA's  $\ln secondary$  is developing Capital investment has a decisive impact; the impact coefficient of the tertiary  $\ln nta$  is relatively small, reaching -0.168, indicating that the development of COMESA's tertiary industry is not also in the labor-intensive stage; the improvement of technical efficiency has relatively no impact on the development of the three industries. Especially the primary industry.

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