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Tourism-Led Growth and Risk of the Dutch Disease: Dutch Disease in Turkey

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Abstract

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.

Keywords: Dutch Disease in Turkey, Beach Disease, ARDL, Non-ARDL, Structural VAR

1. Introduction

From an economic viewpoint, services performed in tourism sectors are classified as exports which have an important contribution to a country’s balance of payments. Balassa (1978) in the “new growth theory” explain that exports generate economic growth by increasing efficiency in the allocation of the production’s factors and also by growing their volume. The Tourism-led growth Hypothesis (TLGH) was directly derived from the export-led growth hypothesis (ELGH) that it can generate economic growth by increasing the amount of capital and labour within the economy, and also by expanding exports (Brida and Pulina, 2010). Also Following the empirical perspective, there are wide well-documented researches in favour of positive effect of tourism on economic development such as Balaguer and Cantavella-Jorda (2002) for Spanish, Dritsakis (2004) for Greece, Dubarry (2004) in case of Mauritius, Gunduz and Hatemi-J (2005) for Turkey, Nowak et al. (2007) for Spanish economy; Brida et al. (2008) for Colombia, in case of Mexico Carrera et al. (2008) that emphasis positive role of tourism in long-run economic growth. While, there are some critical views against TLGH. For example Copeland (1991) and Chao at al. (2006) discuss despite tourism increases consumption of Non-tradable goods and improve the term of trade; it can be decrease accumulation of capital in manufacturing sector. According Parrilla et al. (2005) out of hundreds of research about the role of tourism on economic growth by considering all the literature, just very few researchers were considered a clear analyzing with the long-run growth consequences of specializing in tourism-led growth. On the other hand, tourism sector is non-technology intensive sectors. Solow (1956), Lucas (1988), Romer (1990), and Sachs and J.W. McArthur (2002) stress on capital accumulation from high technology and innovation as necessary factors to long-run growth. Tourism sector makes countries - where to have tourism-led policy- sensitive to the Dutch Disease because of inflows foreign money (Sintes-Inchausti, 2015). Tourism-led growth policy or growth generated by tourism supporter must consider explaining following four ideas (Sintes-Inchausti, 2015) : The First one, Does the strength of tourism as a no-technology –intensive sector is alone able to promote long-run growth?, Does the capacity of tourism is able to give enough guarantee to capital inflows to capital accumulation? Third idea is related to Efficiency improving with increasing international competition in the tourism enterprises and the last one the promotion of increasing returns to scale.

Growth in the service sector does not provide as much economic development as in the manufacturing sector, because while the service sector is labour-intensive, the manufacturing sector is capital-intensive and learning base sector that it has multiple positive effects on economics, technology, and education. Thus, it will support long-term economic growth, accumulation of knowledge and development.

In the economic literature, the conditions that detract from the industrial sector's international competitiveness are termed the Dutch disease. Although some sources of foreign money have some short-term benefits, such sources do not support sustainable growth and economic development in the long term. Therefore, the main aim of this paper is to analyse whether Turkey is suffering from the Dutch disease due to the growth in its tourism sector over the last 40 years, and whether the tourism sector has changed the structure of the Turkish economy from one that is industry-based to one that is dependent on the service or non-tradable sector.

1.1 The Dutch Disease

The term 'Dutch disease' was used for the first time by The Economist in November, 1977. The Economist analysed the discovery of natural gas in the Netherlands in 1959 and its macroeconomic effects. Before 1959, the Netherlands had imported all of its gas. Then, after discovering gas, the country became a gas exporter, and received a great influx of foreign currency. This meant that the real exchange rate and prices in the Netherlands—especially the price of non-tradable goods—increased, which had a negative effect on the country's industrial sector. Thus, the Netherlands lost its competitiveness in the industrial sector and its growth declined.

One of the first researches about the negative effect of export of natural sources on economy was carried out by Meade and Russell (1957) for Australia's economy. According to this study the impact of international demand for raw material at the begging was positive effect on the Australian's balance of payment but net effect in the long run was negative.

Theoretically, the first research about the Dutch Disease was carried out by Corden and Neary (1982) and Corden (1984). Corden and Neary offered a theory which so – called ''The Core Model of Dutch Disease''.

According Corden (1984), an economy can be divided into three sectors booming, lagged sector, and non-tradable sectors. According to the Core Model, The hypothesis of Dutch Disease as considered in small open economy under full employment, free labor movement, restricted capital movement and absent of monetary policy, Discovering a new sources or any sources that can be give rise to a sharp foreign income inflow will appreciate exchange rate, therefore price of commodities and services abroad for import become relatively cheaper and production of manufacturing and agriculture sector (tradable sector) become uncompetitive that might disappear. And also decreasing the competitiveness of the traditional sector lets export to decline.

Under positive income elasticity, a possible shock (such as the discovery of new gas sources or a boom in tourism) can increase the relative prices of booming and lagged sectors and the demand for capital in the non-tradable sector (the spending effect). However, the growth of booming sectors can also increase the demand for labour. Firms that are active in the non-tradable sector will offer high wages to attract and employ workers. High wages in the non-tradable sector then encourage workers to move from the tradable sector to the non-tradable sector (the movement effect). As a result of the movement of resources, the output of the tradable sector decreases, which exposes the economy to the process of de-industrialisation.

1.2 Tourism Sector and Dutch Disease (Beach Disease)

Tourism is an important export factor in 83% of developing countries. The tourism sector is the main export factor in one third of this 83%. In the least developed 49 countries (LDC), tourism is an important growth factor. Tourism increased by 45% in the 1990-2000 period and by approximately 20% in developing countries (World Travel Origination (UNWTO, 2002).

Tourism sector can be cause to kind of Dutch Disease that Holzner (2011) called "Beach Disease". Beach

Disease refers to moving of employer and capital from manufacture sector to tourism (service) sector that it is cause of decreasing employment and production in the industrial sector that has not desirable effect at the long run (Holzner, 2011, p.923).

The idea of Beach Disease for first time was issued by Copeland (1991). Copeland (1991) explains that under especial condition, the appreciation of the real exchange rate is the only mechanism by which tourism can increase domestic welfare (in the absence of taxation and distortions such as unemployment). It can be hold by direct effect, which is the increase of the price of services, holding domestic spending constant, and an indirect spending effect, which is due to the change in domestic spending on services induced by the real income change. With international factor mobility the benefits of a tourism boom are even smaller as the price of nontradable sector is less responsive to demand shocks. According to Copeland (1991), if fixed factors in the non-tradable sector, such as land, are owned by foreign, rents will leave the country. Therefore, the country may end up worse off than before the tourist boom. But by the presence of domestic commodity taxes and optimal taxes policy can increase the benefits of tourism, since they allow for some rents from the unpriced natural amenities (Holzner, 2010, p.1).

Growth of the export related with tourism or natural sectors booming initially will fall the production of traditional tradable goods and increase in the production of non-tradable goods, public services and construction that this process will be cause of reallocation of resources that workers will leave their jobs and move to services sectors to yield more income that production of traditional and industry sectors such as manufacturing and agriculture sectors will fall. Figure 1 summarizes the process (Parrilla et al. 2005, p.5);

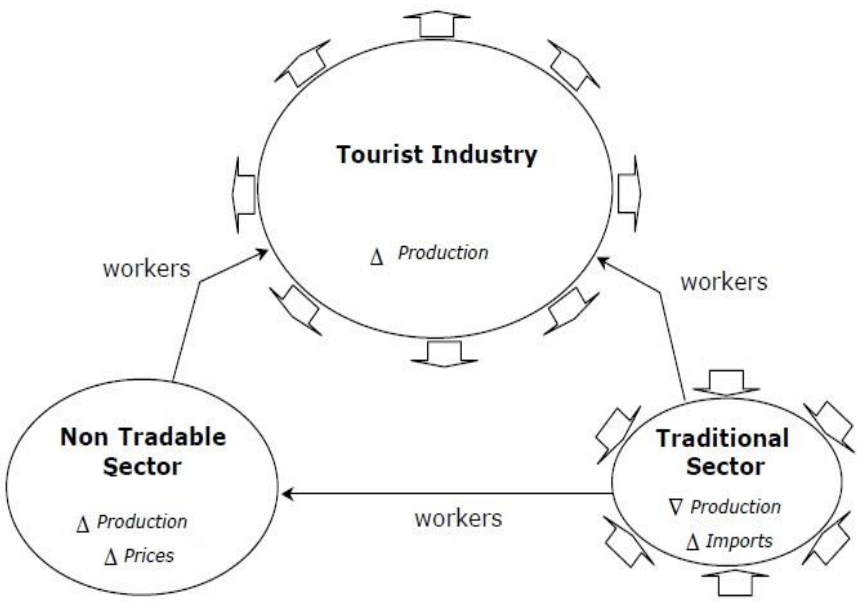

Figure 1. The effects of Dutch disease in a tourism economy

The manufacturing sector and especially the production of investment commodities are knowledge-intensive and offer a great potential for learning effects, innovations to produce new goods and find a new market that it will guarantee long-run growth and reduce unemployment. But tourism (service) sector is labor-intensive which is not knowledge-intensive, do not proper any learning effects, no accumulation of knowledge and whose products and services have low price elasticity (Kropp and Brussels, 2010, p.4-5).

2. Literature

As discussed above, the Dutch disease is generally associated with discovering and exporting natural resources; however, it can be caused by any factors that increase the flow of foreign currency into a country. With regard to the formal or classical approach to the mechanisms of the Dutch disease, there are six main factors that explain its causes.

The first is known as the core model of the Dutch disease, which explains the resource boom effect on other sectors, and especially on the manufacturing sector. The theory of the core model of the Dutch disease was provided by Corden and Neary (1982) and contributed to by Bruno and Sachs (1982), Buiter and Purvis (1983), Corden (1984), and Edwards (1984). The main ideas of the core model focus on the negative effect of booms in natural resources on lagged (industrial) sectors and the positive effect on the non-tradable sector. Following theoretical research, there are various studies into the effect exporting booming resources, especially for oil exporting countries. For example, many studies have focused on countries in the Persian Gulf to investigate the possible causality between oil exporting and the Dutch disease.

The second factor is remittances and money transferring. Although remittances are purported to be an important source of foreign currency, especially for developing countries, it can lead to a sudden increase in a country's exchange rate and a decrease in its competitiveness (and thus, to the Dutch disease). For example, studies by Pablo et al. (2007) on El Salvador, Bayangos and Jansen (2011) on the Philippines, and Makhlouf and Mughal (2013) on Pakistan, etc., have emphasised the macroeconomic effects of remittances and money transferring on the real exchange rate and competitiveness, and in reducing poverty and inequality, which leads a country's economy to experience the Dutch disease.

The third factor is tourism, which is the focus of this research. Tourism as a factor in the Dutch disease has mainly been researched by Copeland (1991), but other studies are notable, such as Ojaghlou (2019) on Turkey and Kenell (2008) on Thailand. In addition, Nowak and Sahli (2007) used general equilibrium model to study island economies; Balaguer and Cantavella-Jorda (2000) used the Johansen Cointegration Test to study Spain; Ghalia and Fidrmuc (2015) used regression testing for 133 countries; Sintes-Inchausti (2015) used GE for Spain; and Holzner (2010) used regression testing for 134 countries. Finally, Kropp and Brussels (2010) studied Greece and Mieiro, et al (2012) focused on Macau.

The fourth factor is foreign aid. From an economic perspective, the similarity between increased income from natural resources and the flow of foreign aid into a country has been indicated by Van Wijnbergen (1986) and Edwards and Van Wijnbergen (1989). Furthermore, studies such as the one by the World Bank (1984) on sub-Saharan countries in Africa, and by Van Wijnbergen (1986) and Ouattara and Strobl (2004) on various African countries, etc., have concerned the relationship between foreign aid and the Dutch disease.

The fifth factor is agriculture sector. Booms in export of agricultural products can increase the real exchange rate and reduce international competitiveness, which can lead a country into de-industrialisation. Notable examples of research into this factor are on the effect of exporting coffee in Colombia by Kamas (1986), Alicia and Constantino's (2013) study on the soy sector in Argentina, and the export of bananas between 1910 and 1950 in Columbia, as studied by Roca (1998).

The last factor is foreign direct investment (FDI). Betta et al.'s (2016) study on Colombia after 2011 is considered as an example of an alternative source of the Dutch disease.

3. Turkish Economy and Tourism Sector

The Turkish economy is one of the emerging markets that in the three-decade have experienced noticeable growth in tourism revenue. According to Turkish Statistical Institute in 2015, 2016 and 2017 respectively, almost 41, 31 and 39 million persons have visited Turkey. According to UNWTO, Turkey has taken among the top 10 most popular tourist arrivals in the world. According to Action Plan for Tourism Strategy prepared by Turkish Ministry of Culture and Tourism (2007)[1]; Turkey has plan to be a world brand in tourism and a major destination in the list of the top five countries receiving the highest number of tourism and highest tourism revenues by 2023.

Travel and tourism's contribution to GDP in Turkey has increased from 7.8 percent in 1995 to 12 percent in 2017 (world Bank Data base, 2018). According to World Travel & Tourism Council report in 2017 (WTTC) this rate in 2016 is 12.5 and Also total 2,197,600 jobs (8.1% of total employment in Turkey) were employed in Travel and Tourism sector in Turkey. Figure 2 shows Contribution of Travel and Tourism to Turkey's %GDP in Turkey (World Bank Indicators (2018)).

[1]Action Plan for Tourism Strategy prepared by Turkish Ministry of Culture and Tourism (2007), report.

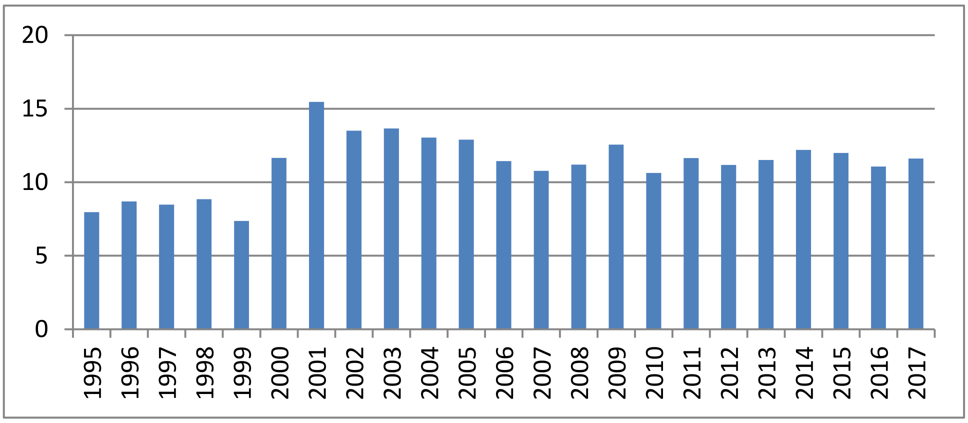

Figure 2. Contribution of Travel and Tourism to Turkey's %GDP

Figure 3, shows the size of the Manufacturing and travel and tourism revenue as a share of Turkish GDP. During the last 2 decades the relationship of Manufacturing and travel and tourism revenue was generally in opposite site (World Bank Database 2018);

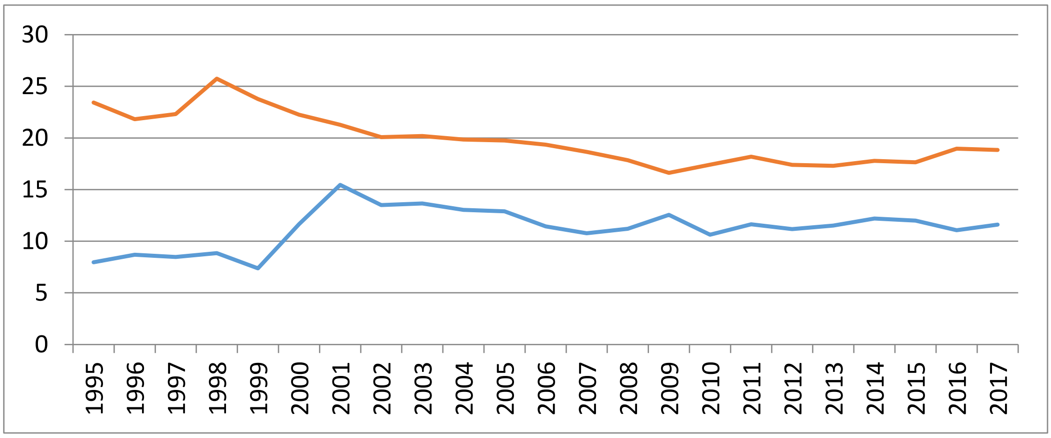

Figure 3. Manufacturing Vs. Travel and Tourism Revenue as Share of GDP

4. Methodology and Data

The analysis covers the period from 1976 to 2017 annual data Holzner (2010) used share of travel services exports in % of GDP ,Figini and Vici (2007) and Ghalia and Fidrmuc (2015) used share of receipts from international tourism in GDPas proxy for tourism capital. But because of lack of official data share of travel services exports in % of GDP and also international tourism in GDP for selected period in Turkey, following Ojaghlou (2019), we use travel services as share of service exports and also tourism income as share of GNP. To set up other variable we follow Ghalia and Fidrmuc (2015), Holzner (2010), Holzner (2011) Figini and Vici (2007). As proxy for growth we use % GDP growth, as proxy of human capital (h) we use gross secondary school enrolment ratio2. As a proxy of physical capital (k), we use Gross fixed capital formation % of GDP. Real exchange rate (RER) and for manufacturing, we use Manufacturing value added as % of GDP, and finally proxy for the tax we use net taxes on products as % of GDP.

[2]Missing data(1985,1996,1997,1998,1999)points were interpolated by arithmetic mean

Table 1. Variables

Variables	Describe	Source
Tourism Capital I	Travel services as share of service exports	World Bank
Tourism Capital II	Tourism income as share of GNP	Türsab (Association of Turkish Travel Agencies)
Human capital (h)	Gross secondary school enrolment ratio	World Bank
Physical capital (K)	Gross fixed capital formation % of GDP	World Bank
Real exchange rate (RER)	Real exchange rate	Federal Rezerv Bankası (st.louis)
Manufacturing	Manufacturing value added as % of GDP	World Bank
Taxes	Taxes on products as % of GDP	Turkish Statistical Institute

Following Holzner (2011) and Ghalia and Fidrmuc (2015), we consider a growth model to analysis tourism effect on Turkey economic growth . This models has resulted from a Neoclassical growth model similar to the Solow (1956) with Cobb-Douglas production, Barron (1991), Barro and Martin (1990) growth model. These research lead to following baseline equation:

$$g = f(y_0, k, \mathrm{h}, \mathrm{X}) \quad (1)$$

Where g refers the growth of output per labor, y_0 initial output per labor, k refers to physical and h for human capital. Following aim of this research for analyzing the relationship between tourism and growth, the x should be a variable of tourism dependency of a country which can be considered as tourism capital. Holzner (2011) consider tourism as the variable which can represent some capital such as natural amenities, climate, and scenery, cultural heritage, and the hospitality of the local population. On the other hand, those factors can be a subset of the human capital variable. For example Ghalia and Fidrmuc (2015) by following above researcher and also Mankiw et al. (1992) and Sachs and Warner (1999) added some additional factor of growth augmenting the productivity of labor and capital that according to the author we can see most of the variable as falling within the labor coefficient in the Cobb-Douglas model. The testable version of equation (1) can be written as follow as:

$$g_i = \alpha_0 + \alpha_1 y_{0i} + \alpha_2 k_i + \alpha_3 h_i + \alpha_4 x_i + \in_i \quad (2)$$

But we also consider common models which have used in related literature. For our purpose, we applied The Autoregressive Distributed Lag (ARDL) bounds which have introduced by Pesaran and Shin (1999) and Pesaranet al. (2001). We first estimate the linear ARDL model outlined by equation (1) and then estimate the nonlinear ARDL model to recognize how taking asymmetric behaviors into account would change the result and uncover existence of long-run equilibrium relationships from tourism capital to other macroeconomics variables such as real exchange rate, growth and manufacturing sector. Estimating both these models help testing our hypothesis which is whether a more flexible and asymmetric model can capture long-run relationships between variables better than common more restrictive symmetric models.

The asymmetric ARDL model advanced by Greenwood-Nimmo et al. (2011) and Shin et al (2014) which it combines a nonlinear long run (cointegrating) relationship with nonlinear error correction by use of constructed partial sum decompositions. Consider the asymmetric long-run relationship:

$$y_t = \beta^+ x_t^+ + \beta^- x_t^- + u_t$$

Where x_t is a $k \times 1$ vector of regressors decomposed as

$$x_t = x_0 + x_t^+ + x_t^-$$

Where x^+_t and x_t- are partial sum processes of positive and negative changes in x_t defined by

$$x_t^{+} = \sum_{j=1}^{t} \Delta x_j^{+} = \sum_{j=1}^{t} \max(\Delta x_j, 0), x_t^{-} = \sum_{j=1}^{t} \Delta x_j^{-} = \sum_{j=1}^{t} \min(\Delta x_j, 0)$$

And β^{+}, β^{-} are the associated asymmetric long-run parameters. The model can be written in error-correction form as follows:

$$\Delta y_t = \rho y_{t-1} + \theta^{+} x_{t-1}^{+} + \theta^{-} x_{t-1}^{-} + \sum_{j=1}^{p-1} \gamma_j \Delta y_{t-j} + \sum_{j=0}^{q} (\pi_j^{+} \Delta x_{t-j}^{+} + \pi_j^{-} \Delta x_{t-j}^{-}) + \varepsilon_t$$, null hypothesis $\rho = \theta^{+} = \theta^{-} = 0$

The traverse between short-run disequilibrium and the new long-run steady state of the system can be written as follows by the asymmetric cumulative dynamic multipliers:

$$m_h^{+} = \sum_{j=0}^{h} \partial y_{t+j} \Big/ \vartheta x_t^{+}$$
$$m_h^{-} = \sum_{j=0}^{h} \partial y_{t+j} \Big/ \vartheta x_t^{-} \qquad h = 0, 1, 2, \ldots$$

where m_h^{+} and m_h^{-} tend toward the respective asymmetric long-run coefficients $\beta^{+} = \theta^{+} / -\rho$ and $\beta^{-} = \theta^{-} / -\rho$, respectively, as $h \to \infty$.

In our case NARDL and ARDL:

Model 1: $\Delta Growth_t = \alpha_0$

$$= \alpha_0 + \sum_{q=1}^{p1} \alpha_{1q} \Delta Growth_{i,t-q} + \sum_{q=0}^{p2} \alpha_{2q} \Delta y_{i,t-q} + \sum_{q=0}^{p3} \alpha_{3q} \Delta k_{i,t-q} + \sum_{q=0}^{p4} \alpha_{4q} \Delta h_{i,t-q} + \sum_{q=0}^{p5} \alpha_{5q} \Delta Tour(\mathrm{I})_{i,t-q}$$

$$+ \beta_1 Growth_{i,t-1} + \beta_2 y_{i,t-1} + \beta_3 k_{i,t-1} + \beta_4 h_{i,t-1} + \beta_5 Tour(\mathrm{I})_{i,t-1} + \varepsilon_t$$

Model 2: $\Delta Growth_t = \alpha_0$

$$+ \sum_{q=1}^{p1} \alpha_{1q} \Delta Growth_{i,t-q} + \sum_{q=0}^{p2} \alpha_{2q} \Delta y_{i,t-q} + \sum_{q=0}^{p3} \alpha_{3q} \Delta k_{i,t-q} + \sum_{q=0}^{p4} \alpha_{4q} \Delta h_{i,t-q} + \sum_{q=0}^{p5} \alpha_{5q} \Delta Tour(\mathrm{I})^{pos}{}_{i,t-q} + \sum_{q=0}^{p6} \alpha_{6q} \Delta Tour(\mathrm{I})^{neg}{}_{i,t-q}$$

$$+ \beta_1 Growth_{i,t-1} + \beta_2 y_{i,t-1} + \beta_3 k_{i,t-1} + \beta_4 h_{i,t-1} + \beta_5 Tour(\mathrm{I})^{pos}{}_{i,t-1} + \beta_6 Tour(\mathrm{I})^{neg}{}_{i,t-1} + \varepsilon_t$$

Model 3: $\Delta Growth_t = \alpha_0$

$$= \alpha_0 + \sum_{q=1}^{p1} \alpha_{1q} \Delta Growth_{i,t-q} + \sum_{q=0}^{p2} \alpha_{2q} \Delta y_{i,t-q} + \sum_{q=0}^{p3} \alpha_{3q} \Delta k_{i,t-q} + \sum_{q=0}^{p4} \alpha_{4q} \Delta h_{i,t-q} + \sum_{q=0}^{p5} \alpha_{5q} \Delta Tour(\mathrm{II})_{i,t-q}$$

$$+ \beta_1 Growth_{i,t-1} + \beta_2 y_{i,t-1} + \beta_3 k_{i,t-1} + \beta_4 h_{i,t-1} + \beta_5 Tour(\mathrm{II})_{i,t-1} + \varepsilon_t$$

Model 4: $\Delta Growth_t = \alpha_0$

$$+\sum_{q=1}^{p1}\alpha_{1q}\Delta Growth_{i,t-q}+\sum_{q=0}^{p2}\alpha_{2q}\Delta y_{i,t-q}+\sum_{q=0}^{p3}\alpha_{3q}\Delta k_{i,t-q}+\sum_{q=0}^{p4}\alpha_{4q}\Delta h_{i,t-q}+\sum_{q=0}^{p5}\alpha_{5q}\Delta Tour(\mathrm{II})^{pos}{}_{i,t-q}+\sum_{q=0}^{p6}\alpha_{6q}\Delta Tour(\mathrm{II})^{neg}{}_{i,t-q}$$

$$+\beta_1 Growth_{i,t-1}+\beta_2 y_{i,t-1}+\beta_3 k_{i,t-1}+\beta_4 h_{i,t-1}+\beta_5 Tour(\mathrm{II})^{pos}{}_{i,t-1}+\beta_6 Tour(\mathrm{II})^{neg}{}_{i,t-1}+\varepsilon_t$$

ARDL Bound Test is applicable to any time series as long as it is not I(2). In other words, it can be applied to I(0) variables or I(1) variables or even a combination of I(0) and I(1) variables. Table 2 shows result of unit root test:

Table 2. Unit Roots Test:

methods	Augmented Dickey Fuller (ADF)				Phillips Perron (PP)			
	level		Frist differences			level	Frist differences	
Variable	Constant	Constant and Trend	Constant	Constant and Trend	Constant	Constant and Trend	Constant	Constant and Trend
Growth	-6.12(0)***	-6.16(0)***	-6.88(1)***	-6.78(1)***	-6.1(3)***	-6.2(4)***	-14.(5)***	-14.06(5)***
GDP Per Capital	2.01(0)	-0.68(0)	-5.33(0)***	-6.13(0)***	3.9(5)	-0.68(3)	-5.35(2)***	-6.38(5)***
Manufacturing	-1.87(0)	-2.10(0)	-7.24(0)***	-7.3(0)***	1.76(2)	2.01(0)	-7.3(2)***	-7.89(5)***
Human Capital	-0.29(0)	-2.58(0)	-7.24(0)***	-7.3(0)***	1.76(2)	2.01(0)	-7.3(2)***	-7.89(5)***
RER	-1.9(0)	-1.8(0)	-7.29(0)***	-7.6(0)***	1.88(2)	1.69(1)	-7.3(2)***	-7.23(3)***
Taxes	-0.29(0)	-1.67(0)	-6.59(0)***	-6.5(0)***	-0.44(4)	1.75(3)	-6.6(4)***	-6.51(4)***
Physical Capital	-2.20(0)	-2.13(0)	-5.7(0)***	-5.6(0)***	2.33(1)	-2.28(1)	-5.6(4)***	-5.5(5)***
TOUR I	-1.52(0)	-2.15(0)	-6.07(0)***	-6.1(0)***	-2.12(5)	-3.8(0)**	-6.1(2)***	-6.12(2)***
TOUR II	-2.34(0)	-3.79(0)**	-6.01(1)***	-5.9(1)***	-1.53(0)	2.2(0)	8.4(29)***	-6.9(16)***

Note. The sighs *,** and *** following the t-statistics represen 10%, 5%, and less that 1% significance level, respectively and parantes shows optimul lag.

As Table 2 shows; all variables are I(1) or I(0). As expected growth series is I (0), Tourism capital as share of GNP also can be considered as I(0) and the other variables are I(1). Table 3, shows the estimation of classical growth models for both NARDL and ARDL models.

Table 3. Long Run Coefficients of Classical Growth Model [3]

	MODEL 1	MODEL 2	MODEL 3	MODEL 4
Dependent variables	Growth ARDL (4,1,1,1,3)	Growth Non-linear ARDL (4,3,0,2,3,1)	Growth ARDL (4,0,1,1,2)	Growth Non-linear ARDL (1,4,4,4,2,2)
C	5.67***	5.16***	4.28***	2.20
GDP Per Capital	-0.00**	-0.00***	-0.00	-0.00
Physical Capital	-0.01	-0.046	0.02	0.12
Human Capital	0.04*	-0.00	-0.01	0.09
Tourism Capital I	-0.05**	-	-	-
Tourism Capital $(I)^{POS}$	-	-0.02*	-	-
Tourism Capital $(I)^{NEG}$	-	-0.06***	-	-
Tourism Capital (II)	-	-	0.18	-
Tourism Capital $(II)^{POS}$	-	-	-	-2.48*
Tourism Capital $(II)^{NEG}$	-	-	-	-2.70
F-Bounds	116.7***	11.71***	64.2***	4.15***
EC_{t-1}	-1.02***	-1.28***	-1.06***	-0.85***
Serial Correlation LM (Breusch-Godfrey)	F=0.72 (0.49)	F=0.84 (0.44)	F=0.05 (0.95)	F=2.4 (0.15)

Note. The sighs *,** and *** following the t-statistics represen 10%, 5%, and less that 1% significance level,

[3] For the stability of all models, CUSUM and CUSUM Squares is tested and there is no problem of stability for the all models.

respectively and parantes shows probublity .

Within the significant coefficients; in the Model 1 and 2, the estimated coefficient of the GDP per capita has a negative sign (same as Holzner (2011)'s finding), coefficient of the human capital is positive and significant in the model 1. All The estimated coefficient of tourism capitals in all models are negative and also all significant excepted model 3 and model 4 (negative coefficient of NARDL) are significant. Therefore tourism has negative effect on economic growth in the long run. All models are cointegrated 1% level and sigh of coefficient of ECt-1 is negative and significant[4]. There is no problem of serial correlation in all models.

One of the most important variables in the Dutch disease theory is the real exchange rate. According to theory of Dutch Disease, large inflow of foreign capital (tourism capital) leads to an appreciation of the real exchange rate and thus it leads country to lost its international competitiveness of the tradable sector (manufacturing and classic tradable sector). Therefore, in the table 4, long run relationship between real exchange rate and tourism capitals and also long run relationship between manufacturing rate and tourism capitals is investigated.

Table 4. Effect of Tourism Capitals to Manufacturing and RER

MODELS	Method	Independent variable Long run coefficient	Serial Correlation LM (Breusch-Godfrey) F-stat	Heteroskedasticity Test: ARCH, F-stat	F bound
MODEL 5 (RER=f(Tourism I))	ARDL (5,3) ECT: -0.41^{***}	1.02^{***} (t.stat:3.77)	0.09 (prob: 0.91)	0.332 (prob: 0.56)	7.70^{***}
MODEL 6 (RER=f(Tourism II))	ARDL (2,3) ECT: -0.16^{**}	14.2 (t.stat:1.43)	1.01 (prob: 0.37)	0.003 (prob:0.95)	4.53^{**}
MODEL 7 (Manufacturing=f(Tourism II))	ARDL(1,0) ECT: -0.15^{**}	-0.72 (t.stat: -0.73)	1.19 (prob: 0.32)	0.055 (prob: 0.81)	1.4
MODEL 8 (Manufacturing =f(Tourism I)	ARDL (1,3) ECT: -0.215^{***}	-0.213^{***} (t.stat: -0.3.11)	0.68 (prob: 0.51)	1.11 (prob: 0.29)	4.57^{***}

Note. The sighs *,** and *** following the t-statistics represen 10%, 5%, and less that 1% significance level, respectively and parantes shows probublity .

As table 4 shows, the model 5, 6 and 8 are cointegrated (model 7 is not cointegrated). In model 5 and 6 shows tourism capitals has positive long run effect on real exchange rate. The coefficient of model 6 is not statistically significant. Although coefficient of the tourism in the model 7 is not statistically significant, as model 7 and 8 show, tourism capitals have negative long run effect on manufacturing sector. There is no problem of Serial Correlation and stability in models. Therefore by considering the results of table 3 and 4, we can say there are symptoms of Dutch Disease because of tourism sector in Turkey. Because tourism capital appreciates the real exchange rate that it will cause of spending and resource movement effect. For clear understanding of effect of tourism capital to real exchange rate and growth we test asymmetric effect of tourism on these variables. The Figure 4, shows Multiplier Non-Liner ARDL Effect of Tourism on real exchange rate and growth. The results are almost same with table 4 and 3. The differences of Tourism Capital^{POS} ,Tourism Capital^{NEG} have overall negative effect on growth and also differences of Tourism Capital(I)^{POS}, Tourism Capital(I)^{NEG} have generally positive effect on real exchange rate. Although The effect of differences of Tourism Capital(II)^{POS} and Tourism Capital (II)^{POS} are negative, it's get positive effect after half of the period.

[4]In thesimple case of ARDL(1,1):

Y = alpha + beta*Y(-1) + gamma*X + delta*X(-1)

the coefficient of the ECM term in the error correction representation is:-(1-beta)

And in that case if (beta< 0) then –(1-beta) can be below -1 but not below -2. Of course when beta > 0 then the coefficient cannot go below -1.For more information refer to worked out from equation (21.168) in the Microfit 5 manual Witten by BahramPesaran and M. Hashem Pesaran.

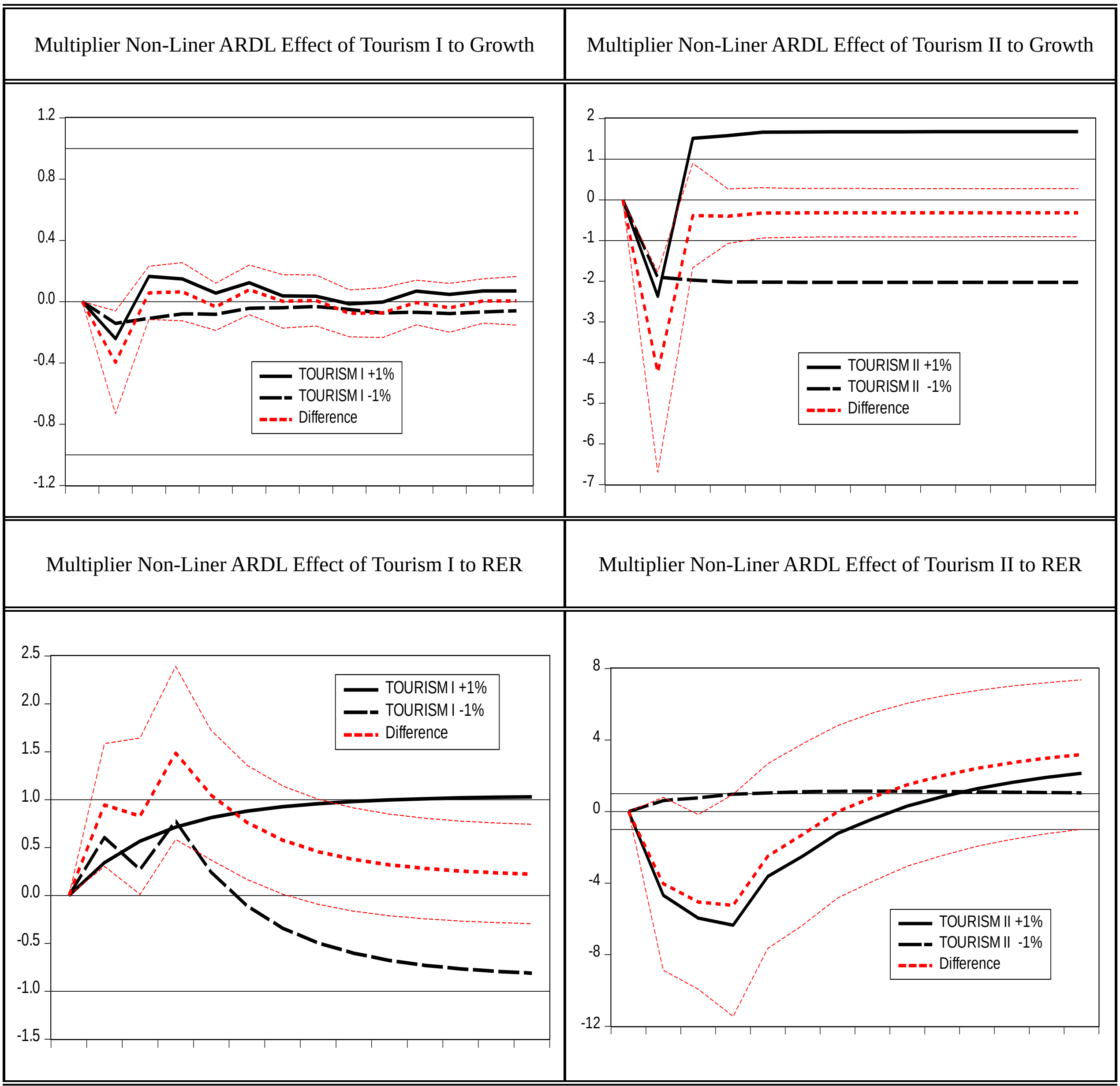

Figure 4. Multiplier Non-Liner ARDL Effect of Tourism on Real Exchange Rate and Growth

Following Holzner (2011), the direct effect of tourism on growth will be tested by using Non ARDL Method via two models in the table 5. The results show the all tourism capitals have negative effect on growth and all are statistically significant (except Tourism(I)^{pos}).

Model 9: $\Delta Growth_t = \alpha_0$

$$+\sum_{q=1}^{p1}\alpha_{1q}\Delta Growth_{i,t-q}+\sum_{q=0}^{p2}\alpha_{2q}\Delta y_{i,t-q}+\sum_{q=0}^{p3}\alpha_{3q}\Delta k_{i,t-q}+\sum_{q=0}^{p4}\alpha_{4q}\Delta h_{i,t-q}+\sum_{q=0}^{p5}\alpha_{5q}\Delta RER_{i,t-q}$$

$$+\sum_{q=0}^{p6}\alpha_{6q}\Delta tax_{i,t-q}+\sum_{q=0}^{p7}\alpha_{7q}\Delta manu_{i,t-q}+\sum_{q=0}^{p8}\alpha_{8q}\Delta Tour(\text{I})^{pos}{}_{i,t-q}+\sum_{q=0}^{p9}\alpha_{9q}\Delta Tour(\text{I})^{neg}{}_{i,t-q}$$

$$+\beta_1 Growth_{i,t-1}+\beta_2 y_{i,t-1}+\beta_3 k_{i,t-1}+\beta_4 h_{i,t-1}+\beta_5 RER_{i,t-1}+\beta_6 tax_{i,t-1}+\beta_7 manu_{i,t-1}+\beta_8 Tour(\text{I})^{pos}{}_{i,t-1}$$

$$+\beta_9 Tour(\text{I})^{neg}{}_{i,t-1}+\varepsilon_t$$

Model 10: $\Delta Growth_t = \alpha_0$

$$+\sum_{q=1}^{p1}\alpha_{1q}\Delta Growth_{i,t-q} + \sum_{q=0}^{p2}\alpha_{2q}\Delta y_{i,t-q} + \sum_{q=0}^{p3}\alpha_{3q}\Delta k_{i,t-q} + \sum_{q=0}^{p4}\alpha_{4q}\Delta h_{i,t-q} + \sum_{q=0}^{p5}\alpha_{5q}\Delta RER_{i,t-q}$$

$$+\sum_{q=0}^{p6}\alpha_{6q}\Delta tax_{i,t-q} + \sum_{q=0}^{p7}\alpha_{7q}\Delta manu_{i,t-q} + \sum_{q=0}^{p8}\alpha_{8q}\Delta Tour(\mathrm{II})^{pos}{}_{i,t-q} + \sum_{q=0}^{p9}\alpha_{9q}\Delta Tour(\mathrm{II})^{neg}{}_{i,t-q}$$

$$+\beta_1 Growth_{i,t-1} + \beta_2 y_{i,t-1} + \beta_3 k_{i,t-1} + \beta_4 h_{i,t-1} + \beta_5 RER_{i,t-1} + \beta_6 tax_{i,t-1} + \beta_7 manu_{i,t-1} + \beta_8 Tour(\mathrm{II})^{pos}{}_{i,t-1}$$

$$+\beta_9 Tour(\mathrm{II})^{neg}{}_{i,t-1} + \varepsilon_t$$

Table 5. Direct effect of tourism on growth

Variables	Growth Non Liner ARDL (3,2,2,2,3,3,3,3,2)	Growth Non Liner ARDL (3,3,3,3,32,3,3,3)
C	34.15	32.24
GDP per capital	-0.00**	-0.00*
Physical capital	-0.15	-0.00
Human capital	0.2	0.18
Real Exchange Rate	-0.04	-0.11**
Taxes	-1.002	-0.132
Manufacturing	-1.01	-0.77
$Tourism^{pos}I$	-0.027	-
$Tourism^{neg}I$	-0.059*	-
$Tourism^{pos}II$	-	-2.56**
$Tourism^{neg}II$	-	-2.85*
F-Bounds	13.35***	6.004***
EC_{t-1}	-1.05***	-1.95***
Serial Correlation LM (Breusch-Godfrey)	F=4.82 (0.089)	F=0.59 (0.52)

Note. The sighs *,** and *** following the t-statistics represen 10%, 5%, and less that 1% significance level, respectively and parantes shows probublity.

4.1 Interactive Production Function Estimates

Hozlner (2011) following Canning and Bennathan (2000) allows the Cobb-Douglas production function to take more complex functional form given by:

$$f(k_{it}, \mathrm{h}_{it}, \mathrm{x}_{it}) = \alpha_1 k_{it} + \beta_1 h + \gamma_1 x_{it} + \alpha_2 k_{it}^2 + \beta_2 h_{it}^2 + \gamma_2 x_{it}^2 + \psi_{kh} k_{it} h_{it} + \psi_{kx} k_{it} x_{it} + \psi_{hx} h_{it} x_{it}$$

This form of the trans-log production function allows for different degrees of substitutability and complementarily between the different types of capital (Canning and Bennathan, 2000). The test able version of above equation can be written following form;

$$y_{it} = Y_t + \alpha y_{it-1} + \alpha_1 k_{it} + \beta_1 h + \gamma_1 x_{it} + \alpha_2 k_{it}^2 + \beta_2 h_{it}^2 + \gamma_2 x_{it}^2 + \psi_{kh} k_{it} h_{it} + \psi_{kx} k_{it} x_{it} + \psi_{hx} h_{it} x_{it}$$

Holzner (2011) and Canning and Bennathan (2000) use panel data in their studies. While, we use time series in our study that there is high collinearity between variables. Therefore we use growth as proxy for y_{it} and also Ghalia and Fidrmuc (2015) used growth as depended variable with interactive between trade and tourism without logarithms. The result is in Table 6.

Table 6. Estimation of Interactive production function

	MODEL 11	MODEL 12
Dependent variables	Growth ARDL (1,0,1,1,0,1,0,1,0,0,1)	Growth ARDL (2,0,2,0,0,2,0,0,1,0,2)
C	13.00	94.73**
Lagged GDP Per Capital	-0.003***	-0.003***
Physical Capital	-1.21	-11.42**
Human Capital	-2.85***	-2.30***
Tourism Capital I	0.52	2.12
Physical Capital* Physical Capital	-0.23***	0.00
Human Capital* Human Capital	0.01***	0.01
Tourism Capital I* Tourism Capital I	-0.01**	-0.91
Human Capital* Phisical Capital	0.19***	0.19***
Phisical Capital *Tourism Capital I	-0.02*	-0.24
Human Capital *Tourism Capital I	0.01**	0.11*
F-Bounds	13.71***	9.05***
EC_{t-1}	-1.15***	-0.88***
Serial Correlation LM (Breusch-Godfrey)	F=0.50 (0.61)	F=1.45 (0.24)

Note. The sighs *,** and *** following the t-statistics represen 10%, 5%, and less that 1% significance level, respectively and parantes shows probublity .

The important results to analyze in models are the coefficients of the squared and the interactive terms. In model 11among the squared terms human capital coefficient is significant and positive. But the squared terms physical capital coefficient is negative and significant. This implies that investment in human capital has increasing returns and investment in physical capital has decreasing returns. Regarding the interactive terms, the interaction effects between tourism and human capital are positive and significant but interaction effects between tourism and physical capital are negative and significant. In model 12 only interaction effects between tourism and human capital are positive and significant. Therefore investment in traditional physical capital, such as an airport, museum, or other touristic places has negative effect on long run growth but investment in human capital has positive effect on long run growth in Turkey.

4.2 Transmission Channel from Tourism Capital

Christiano at al. (1999) and Breitung (1997) emphasis on advantages of SVAR method for transmission channel. Therefore SVAR method have used for transmission channel. Rubio-Ramirez at al. (2010) describe three type of (A-B, S; short run and F; long run) matrix for Structural VAR system. Our analyses focus on long run effect of tourism on Turkey economy so we consider F (long run Restriction matrix). The identifying restriction and relationship between A, B and F matrix:

$$A^{*}e = B^{*}u$$
$$e = S^{*}u$$
$$\phi^{*}e = F^{*}u$$

and short run S model is following type:

$$e_t = S^{*}u_t$$
$$\textstyle\sum_e = S'S''$$
$$(I - A_1 - A_2 - \ldots - A_p)^{-1} e_t = \phi^{*}e_t = F^{*}u_t$$
$$\textstyle\sum_e = \phi^{-1}FF'\phi^{-1'}\ldots \tag{15}$$
$$\phi = (I - A_1 - A_2 - \ldots - A_p)^{-1}$$

for 3*3 model: $A = \begin{pmatrix} 1 & 0 & 0 \\ \gamma_1 & 1 & 0 \\ \gamma_2 & \gamma_3 & 1 \end{pmatrix}$, $B = \begin{pmatrix} \tau_1 & 0 & 0 \\ 0 & \tau_2 & 0 \\ 0 & 0 & \tau_3 \end{pmatrix}$ and $F = \begin{pmatrix} \vartheta_1 & 0 & 0 \\ \vartheta_2 & \vartheta_3 & 0 \\ \vartheta_4 & \vartheta_5 & \vartheta_6 \end{pmatrix}$

According to Ashley and Verbrugge (2009) modeling VAR in levels models are appropriate in the contextof impulse response function confidence interval estimation. Also Peersman (2005), Sousa and Zaghini (2004), Rüffer and Stracca (2006) use I(0) instead of instable (I(1)) data for impulse response function. Therefore we estimate F long run tringle matrix of impulse response function of SVAR. The result summarized Figure 5:

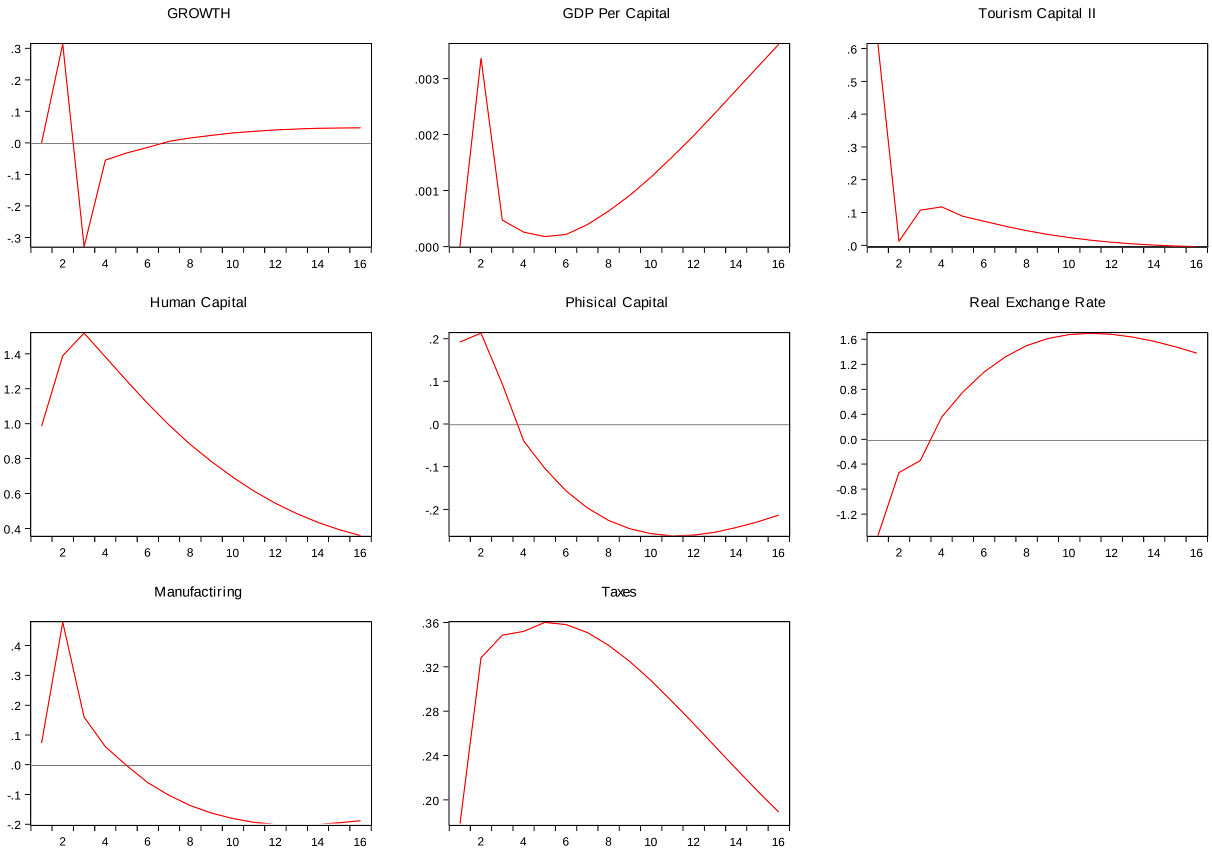

Figure 5. Long rung respond of Variables to Tourism Capital II

Following a one shock to the long-term tourism capital, growth appears to rise sharply. It falls immediately to negative aria till period 6 and then it gets ineffective. GDP per capital, human capital and taxes respond positively in all periods. Respond of Real exchange rate appears to increase but in first four periods negative and then respond positively. It confirms previous result which duo to shock to tourism capital II, spending and resource movement effect happens. So that as long as real exchange rate is negative manufacturing sector respond positive, when real exchange rate become positive, manufacturing starts responding negatively.

Table 7. SVAR, LM (serial correlation) Test and VAR Residual Heteroskedasticity Tests

	LM (Autocorrelation		Heteroskedasticity
Lag	LRE*	Rao F	χ^2
1	79.67(0.089)	1.30 (0.116)	579.80 (0.44)
2	66.76 (0.38)	1.03(0.42)	

In response to a one shock to the long-term tourism capital I, as same Figure 5, growth appears to rise sharply and falls immediately to negative and become positive again and then it gets ineffective. GDP per capital appears both positive and negative. Human and physical capital and taxes first respond positively and then negatively. Respond of Real exchange rate appears to increase and positive which It confirms previous result again that duo to shock to tourism capital II, spending and resource movement effect happens. So that manufacturing sector respond generally negative. Both of SVAR models have no Serial Correlation in 5% level of significant.

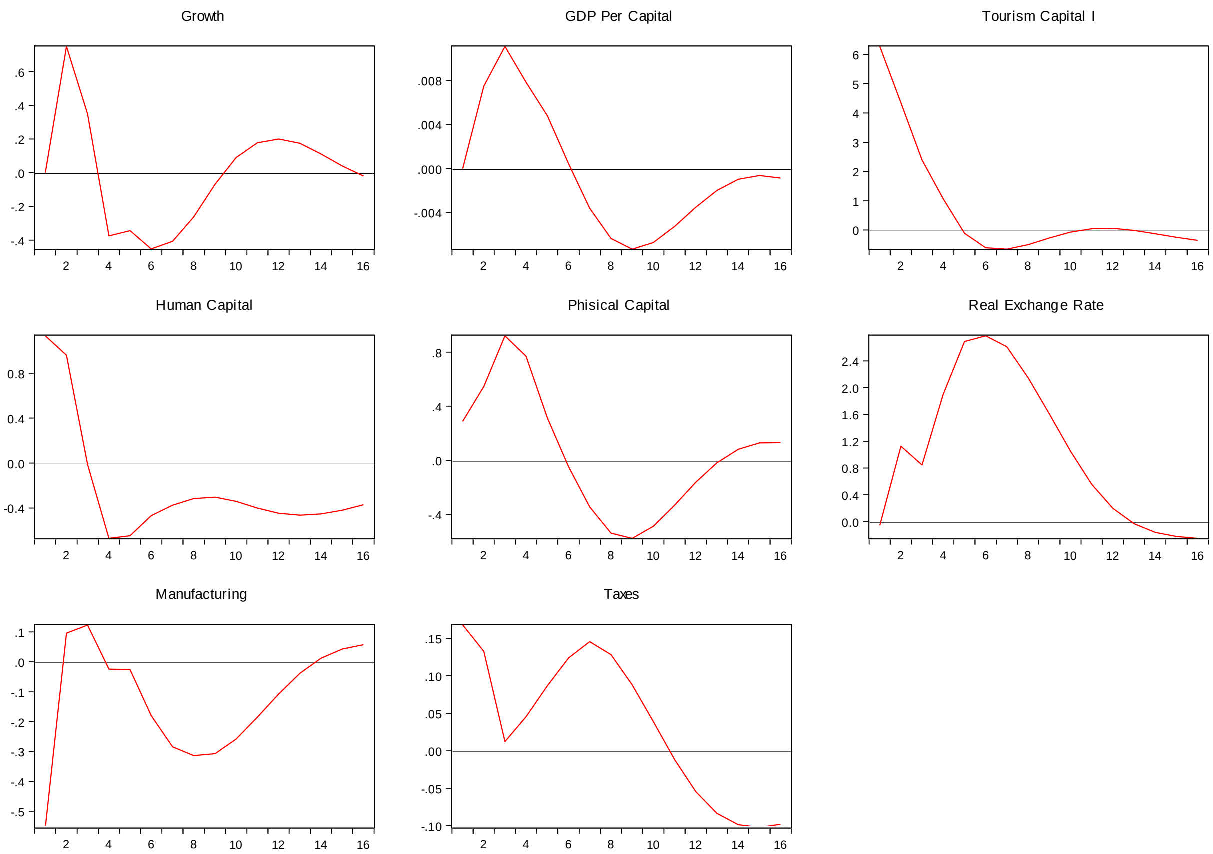

Figure 6. Long rung respond of Variables to Tourism Capital I

Table 8. SVAR, LM (Serial correlation) Test and VAR Residual Heteroskedasticity Tests

	LM (Autocorrelation		Heteroskedasticity
Lag	LRE*	Rao F	χ^2
1	86.72(0.078)	1.49 (0.088)	1183.05 (0.25
2	61.27 (0.57)	0.88(0.67)	

5. Results and Discussion

The first objective of the study was to determine whether rapid growth in the tourism sector has led the Turkish economy to experience the Dutch disease. The results highlight that the tourism sector in Turkey has a high potential to increase the real exchange rate, resource movement and spending effect that has led the Turkish economy into the process of de-industrialisation known as the Dutch disease. This result corresponds with the theories and previous studies conducted by Copelend (1991), Parrilla et al. (2005), Kenell (2008), Kropp and Brussels (2010), Mieiro, et al (2012), etc. By comparing the results with those of Holzner (2010), there are some differences, especially in the potential risk of experiencing the Dutch disease. Holzner (2010) used cross-country analysis and concluded that tourism does not seem to lead to a contraction in the manufacturing sector. However, Holzner (2010) recommended that revenue from the tourism sector in developing countries with a potential for tourism can be invested both in the tourism sector and by the manufacturing sector.

Due to the lack of official data on tourism revenue as a share of GDP for a selected period, we decided to use two proxies: tourism revenue as a share of GNP and travel services as a share of service exports. One concern about the findings is about management of the tourism income. Money gained from tourism should be used to develop the infrastructure not only services sector, roads and airports but also should use for developing the other sectors especially manufacturing sector. Although we followed related studies, literature on the effect of the tourism sector on the Dutch disease is limited, and thus identifies a deficiency in research on the topic, especially with regard to tourism-oriented countries.

6. Conclusions and Policy Implications

The purpose of this study was to investigate the Beach Disease effect or the Dutch disease effect of the flow of foreign currency from tourism into Turkey. In other words, we analysed whether the growing tourism sector in Turkey has caused symptoms of the Dutch disease to emerge, such as the reallocation of resources between different sectors (moving production factors to non-tradable sectors), decreasing production in the tradable sector, decreasing international competitiveness, and consequently de-industrialisation and decreasing long-term growth. Beach Disease is a term that was used for the first time by Holzner (2011) to describe the danger of the Dutch disease as a result of rapid growth in the tourism sector. Following Copeland (1991), Chao et al. (2006), Holzner (2010), Hozland (2011), Ghalia and Fidrmuc (2015), we applied various econometrics models based on ARDL, non-ARDL and a structural VAR approach to investigate the effect of tourism revenue on Turkey's long-term growth using yearly time series over the period from 1976 to 2017.

According to our findings, the growing tourism sector and its revenue have had the same effect as the natural revenue effect, and have the potential to lead Turkey's economy to experience the Dutch disease.

According to estimation of growth model, the relationship between tourism and the manufacturing production is negative. A booming tourism sector increases the real exchange rate due to the diminishing competitiveness of tradable sectors, and in particular, production in the manufacturing sector decreases, and also increasing in tourism sector as a part of the non-tradable sector in Turkey, has reallocated production factor to moving labour and other factors toward the non-tradable sectors that it has negative effect on manufacturing sectors.

These results demonstrate that the effect of the interaction between tourism and physical capital on economic growth is negative. This means that investments in building new hotels, roads, airports, etc., have a negative effect on long-term growth. Conversely, interaction between human capital and tourism has a positive effect on economic growth, which means that investment in training workers in the tourism sector will have a positive effect on Turkey's long-term growth. In addition, the result of SVAR indicates that tourism capital increases the real exchange rate and decreases manufacturing production, which is a symptom of the Dutch disease in Turkey.

In conclusion, with regard to the results of the tourism-led growth policy, especially in the last two decades, the Turkish economy has suffered from the Dutch disease due to growth in the tourism sector, which caused de-industrialisation and unstable long-term growth. Therefore, Turkish authorities should consider managing income from tourism.

As Van Wijnbergen[5] stated, 'To refer to a vast, valuable energy resource as the source of a "disease" sounds rather ungrateful'; the main problem related to the Dutch disease is not the export of energy, but the mismanagement of resources. In our case, if tourism income is spent on improving the supply side, such as investments in infrastructure (especially in the manufacturing sector), education, government institutions and health care, then there will be productivity benefits for the whole economy. These could offset any lack of balance in exchange rates and loss of competitiveness from the Beach Disease (Dutch disease) effect.

References

Alicia, P., & Constantino, A. (2013). *The Takeover of Soy and Dutch Disease in Argentina: An Agricultural Curse?* 44(175). https://probdes.iiec.unam.mx/en/revistas/v44n175/body/v44n175a4_3.php

Ashley, R. A., & Verbrugge, R. J. (2009). To Difference or Not to Difference: A Monte Carlo Investigation of Inference In Vector Autoregression Models. *International Journal of Data Analysis Techniques and Strategies, 1*(3), 242-274. https://doi.org/10.1504/IJDATS.2009.024295

Balaguer, J., & Cantavella-Jorda, M. (2002). Tourism as a Long-Run Economic Growth Factor: The Spanish case. *Applied Economics, 34*(7), 877-884. https://doi.org/10.1080/00036840110058923

Barro, R. J., & Martin, S. X. (1990). *Economic Growth and Convergence across The United States*, NBER Working Paper No. 3419, Issued in August 1990. https://doi.org/10.3386/w3419

Barron, R. J. (1991). Economic Growth in a Cross Section of Countries. *The Quarterly Journal of Economics, 106*(2), 407-443. https://doi.org/10.2307/2937943

Bayangos, V., & Jansen, K. (2011). *Remittances and Competitiveness: The Case of ThePhilippines*. World Development, 39 (10), 1834-1846. https://doi.org/10.1016/j.worlddev.2011.04.019

Betta, A., Godin, A., & Missaglia, M. (2016). *Finance, foreign (direct) investment and dutch disease: the case of Colombia.* Levy Economics Institute of Bard College, Working Paper, No. 850, pp. 265–289.

[5]The Economic Journal Vol. 94, No. 373 (Mar., 1984), pp. 41-55 (15 pages)

https://doi.org/10.1007/s40888-016-0030-6

Breitung, J. (1997). Recent Developments in Econometric Structural Models: Structural Vector Autoregressions. *IFO studies, 44*(4), 371-392.

Brida, J. G., & Pulina, M. (2010). *A Literature Review on The Tourism-Led-Growth Hypothesis*. CRENoS Working Papers, No. 2010_17.

Brida, J., Juan S. P., Wiston A. R., María Jesús S. D., & Sandra, Z. A. (2008). The Tourism-led Growth Hypothesis: Empirical Evidence from Colombia". MPRA Paper. *Tourismos: An International Multidisciplinary Journal of Tourism, 2.4*(2009), 13-27.

Bruno, M., & Sachs, J. (1982). Energy and Resource Allocation: A Dynamic Model of the "Dutch Disease". *Review of Economic Studies, 49*(5), 845-859. https://doi.org/10.2307/2297191

Buiter, W. H., & Purvis, D. D. (1983). *Oil, Disinflation, and Export Competitiveness: A Model of the "Dutch Disease*. NBER W.P., December (592).

Canning, D., & Bennathan, E. (2000). *The Social Rate of Return on Infrastructure Investments*. paper produced as a part of the World Bank research project 'Infrastructure and Growth: A Multicountry Panel Study', July 2000. https://doi.org/10.1596/1813-9450-2390

Carrera, E. J. S., Risso, W. A., & Brida, J. G. (2008). Tourism's impact on long-run Mexican economic growth. *Economics Bulletin, 23*(21), 1-8.

Chao, C. C., Bharat R. H., Jean-Pierre L., Pasquale M. S., & Eden, S. H. (2006). Tourism, Dutch Disease And Welfare In An Open Dynamic Economy. *The Japanese Economic Review, Japanese Economic Association, 57*(4), 501-515. https://doi.org/10.1111/j.1468-5876.2006.00400.x

Christiano, L. J., Martin, E., & Charles L. E. (1999). *Monetary policy shocks: What have we learned and to what end?* Chapter 2, Handbook of Macroeconomics, Volume 1, Part A, 1999, pp. 65-148. https://doi.org/10.1016/S1574-0048(99)01005-8

Copeland, B. R. (1991). Tourism, Welfare and De-industrialization in a Small Open Economy. *Economica, 58*(232), 515-529. https://doi.org/10.2307/2554696

Corden W. M. (1984). Booming Sector and Dutch Disease Economics: Survey and Consolidation. *Oxford Economic Papers, 36*(3), 359-380. https://doi.org/10.1093/oxfordjournals.oep.a041643

Corden W. M., & Neary J. P. (1982). Booming Sector and De-Industrialisation in a Small Open Economy. *The Economic Journal, 92*(368), 825-848. https://doi.org/10.2307/2232670

Dritsakis, N. (2004). Tourism as a long-run economic growth factor: An empirical investigation for Greece using causality analysis. *Tourism Economics, 10*(3), 305-316. https://doi.org/10.5367/0000000041895094

Dubarry, R. (2004). Tourism and economic growth: The case of Mauritius. *Tourism Economics, 10*(4), 389-401. https://doi.org/10.5367/0000000042430962

Edwards, S. (1984). *Commodity Export Boom and The Real Exchange Rate: The Money-Inflation Link*. NBER W.P., October (1741). https://doi.org/10.3386/w1741

Edwards, S., & Van Wijnbergen, S. (1989). *Disequilibrium and Structural Adjustment*. In And ,H.C.and Srinivasan, T., editors, Hand book of development economics, volume II, pp. 1481_1533. Amsterdam: North Holland. https://doi.org/10.1016/S1573-4471(89)02015-2

Figini, P., Castellani, M., & Vici, L. (2007). *Estimating Tourist External Effects on Residents: a Choice Modeling Application to Rimini.* https://doi.org/10.2139/ssrn.999927

Ghalia, T., & Fidrmuc, J. (2015). The Curse of Tourism? *Journal of Hospitality and Tourism Research, 42*(6), 979-996. https://doi.org/10.1177/1096348015619414

Greenwood-Nimmo, M., Shin, Y., & Till, V. T. (2011). *The Asymmetric ARDL Model with Multiple Unknown Threshold Decompositions: An Application to the Phillips Curve in Canada*. http://www.greenwoodeconomics.com/(MG2)IMK_multi.pdf

Gunduz, L., & Hatemi, J. A. (2005). Is the tourism-led growth hypothesis valid for Turkey? *Applied Economics Letters, 12,* 499-504. https://doi.org/10.1080/13504850500109865

Holzner, M. (2010). Tourism and Economic Development: The Beach Disease? *Tourism Management, 32*(2011), 922-933. https://doi.org/10.1016/j.tourman.2010.08.007

Holzner, M. (2011). *Tourism and Economic Development: The Beach Disease?*. wiiw Working Papers, No: 66.

Kamas, L. (1986). Dutch Disease Economics And The Colombian Export Boom. *World Development, 14*(9), 1177-1198. https://doi.org/10.1016/0305-750X(86)90119-1

Kenell, L. (2008). *Dutch Disease and Tourism: The Case of Thailand*. Master Thises, Lund University Department of Economics.

Kropp, M., & Brussels, K. R. (2010). *Greece and Its Structural Correlation With East Germany*. http://www2.euromemorandum.eu/uploads/wg4_kropp_kulke_greece_and_its_strucutral_correlation_with_east_germany.pdf

Lucas, R. E. Jr. (1988). On The Mechanics of Economic Development. *Journal of Monetary Economics, 22,* 3-42. https://doi.org/10.1016/0304-3932(88)90168-7

Makhlouf, F., & Mughal, M. (2013). Remittances, Dutch Disease, and Competitiveness: A Bayesian Analysis. *Journal of Economic Development, 38*(2), 67-97.

Mankiw N. G., Romer, D., & Weil, D. N. (1992). A Contribution to the Empirics of Economic Growth. *The Quarterly Journal of Economics, 107*(2), 407-437. https://doi.org/10.2307/2118477

Meade, J. E., & Russell, E. A. (1957). The Wage and Cost of The Living Balance of Payments. *The Economic Record, The Economic Society of Australia, 33*(64), 23-28. https://doi.org/10.1111/j.1475-4932.1957.tb01272.x

Mieiro, S., Nogueira, P. R., & Alves, J. (2012). Gaming Tourism Boom, Foreign Currency Inflows, and Dutch Disease Effects: An Empirical Model for Macau. *International Journal of Trade, Economics and Finance, 3*(6), 421. https://doi.org/10.7763/IJTEF.2012.V3.238

Nowak, J. J., & Sahli, M. (2007). Coastal Tourism and 'Dutch Disease' in a Small Island Economy. *Tourism Economics, 13*(1), 49-65. https://doi.org/10.5367/000000007779784452

Nowak, J. J., Sahli, M., & Isabel, C. J. (2007). Tourism, Capital Good Imports and Economic Growth: Theory and Evidence for Spain. *Tourism Economics*, *13*(4), 515-536. https://doi.org/10.5367/000000007782696113

Ojaghlou, M. (2019). *Turizm Sektörü Ve Hollanda Hastaliği: Türkiye Örneği.* Unpublished PhD Thesis, Karadeniz Technical University, Trabzon, Turkey.

Ouattara, B., & Strobl. E. (2004). Aid, Policy and Growth: Does Aid Modality Matter? *Review of World Economics, 144*(2), 347-365. https://doi.org/10.1007/s10290-008-0150-3

Pablo, A. A., Emmanuel, K. K. L., & Federico, S. M. (2007). Remittances and the Dutch disease. *Journal of International Economics, Elsevier, 79*(1), 102-116. https://doi.org/10.1016/j.jinteco.2009.06.007

Parrilla, J. C., Font, A. R., & Nadal, J. R. (2005). *Dutch Disease in Tourism Economies. Evidence from Spain*. CRE Working Papers (Documents de treball del CRE) 2005/01, Centre de Recerca Econòmica (UIB ·"Sa Nostra"), revised Jan 2005.

Peersman, G. (2005). What Caused The Early Millenium Slowdown? Evidence Based on Autoregressions. *Journal of Applied Econometrics, 20,* 185-207. https://doi.org/10.1002/jae.832

Pesaran, M. H., & Shin, Y. (1999). *An Autoregressive Distributed Lag Modelling Approach to Cointegration Analysis*. Econometrics and Economic Theory in the 20th Century: The Ragnar Frisch Centennial Symposium, Strom, Cambridge University Press.

Pesaran, M. H., Shin, Y., & Smith, R. (2001). Bounds Testing Approaches to the Analysis of Level Relationships. *Journal of Applied Econometrics, 16*(3), 289-326. https://doi.org/10.1002/jae.616

Roca, A. M. (1998). *Dutch Disease And Banana Exports In The Colombian Caribbean, 1910- 1950*. American Studies Association, The Palmer House Hilton Hotel, Chicago, Illinois, September 24-26, 1998.

Romer, P. M. (1990). Endogenous Technological Change. *Journal of Political Economy, 98,* 71-102. https://doi.org/10.1086/261725

Rubio-Ramirez, J., Waggoner, D. F., & Zha, T. (2010). Structural Vector Autoregressions: Theory of Identification and Algorithms for Inference. *Review of Economic Studies, 77*(2), 665-696. https://doi.org/10.1111/j.1467-937X.2009.00578.x

Rüffer, R., & Stracca, L. (2006). *What Is Global Excess Liquidity, And Does It Matter?* ECB Working Paper Series, No. 696.

Sachs, J. D., & McArthur, J. W. (2002). *Technological Advancement and Long-Term Economic Growth in Asia.* Technology and The New Economy, MIT Press.

Sachs, J. D., & Warner, A. M. (1999). The Big Rush, Natural Resource Booms And Growth. *Journal of Development Economics, 59*(1), 43-76. https://doi.org/10.1016/S0304-3878(99)00005-X

Sintes-Inchausti, F. (2015). Tourism: Economic Growth, Employment and Dutch Disease. *Annals of Tourism Research, Elsevier, 54*(C), 172-189. https://doi.org/10.1016/j.annals.2015.07.007

Solow, R. (1956). A Contribution to The Theory of Economic Growth. *Quarterly Journal of Economics, 70,* 65-94. https://doi.org/10.2307/1884513

Sousa, J., & Zaghini, A. (2004). *Monetary Polıcy Shocks In The Euro Area And Global Liquidity.* ECB Working Paper Serıes No. 309 / February 2004.

The Dutch Disease. The Economist, November 26, 1977, 82-83.

UNWTO. (2002), Tourism Highlights, 2002 Edition.https://www.eunwto.org/doi/book/10.18111/9789284406876

Van Wijnbergen, S. (1986). *Aid, export promotion and the real exchange rate : an African dilemma?.* Country Policy Department discussion paper ; no. CPD 1985-54.

World Travel and Tourism Consul (WTTC), Annual Report, (2017) For Turkey.

World Travel and Tourism Consul (WTTC), Annual Report, (2018) For Turkey.