THE EFFECT ON CURRENT ACCOUNT OF NET TOURISM REVENUES IN TURKEY

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Abstract

Tourism is one of the important sectors of the national economy in terms of its contribution to the national revenue. Tourism revenues, particularly in economies that have problems with the export of value-added products provide foreign exchange inflow and play an important role in the financing and reducing foreign trade deficit and current account deficit. Net tourism revenues in Turkey and its effects on balance of payments and current account were analyzed. VAR analysis method was used to determine the relationship between variables. In addition, Granger causality and impulse-response analysis of the degree and direction of the relationship was tested. The analyzes performed and the resulting scores revealed tourism revenues having positive effects on the current account.

Keywords: Net Tourism Revenue, Current Account, Turkey, VAR

Introduction

Be it developed, developing or less developed nations, the tourism industry otherwise known as the service industry is playing an important role in addressing the bottlenecks arising from the declining exports in the goods production sector. It is providing an important source of revenue to close the trade deficit and also subsiding the effects on the economy arising from the crises from the real sector. In this perspective, in this study we take a look at the balance of payments and net tourism revenue in Turkey. The effects of tourism revenues on Turkey's chronic current account deficit have been studied and examined. In the theoretical part of the study, firstly information

on balance of payments and the current account are given. However, the study has tried to find out the importance of Turkey's tourism revenue and the tourism industry in the world perspective. The empirical part of the study aims to determine the relationship between tourism revenues and the current account deficit. To determine this relationship of variables, VAR analysis method was used. Also, in addition, the Johansen methodology and impulse-response analysis using Granger causality direction and degree of the relationship was tested. The results obtained revealed that the importance of the tourism sector in Turkey is obvious.

Balance of payments

This is the balance of payments in a country of residence (individuals, companies and government) in a given period of time (one year or quarter) and accounts records kept for international economic activities (www.apcentral.collegeboard.com). The transactions mentioned herein, includes transfers of domestic and foreign tradable goods, services and income flows, financial assets and liabilities (www.imf.org) . Each pair of economic transactions is registered by the double entry accounting system and consequently the two sides of the balance of payments (receivables and payables) are equal. It also shows balance of payments always balances (Fieleke, 1996). For example, when a trader exports something abroad, in exchange a financial asset (eg. cash) is obtained. Exported products concerned will be shown on the credit side, the financial assets are written on the debit side (Fiji Islands Bureau of Statistics, 2009).

Table 1: Balance of Payments in Double Entry

Debt Entry	Credit Entry
Goods and services Export	Goods and Services import
Domestic and foreign income accrued	Domestic and foreign expenditure accrued
Credit entries balance transfers	Debt entries balance transfers
A decrease in foreign assets of the economy or an increase in foreign liabilities	Increase in foreign assets of the economy or a decrease in foreign liabilities

Balance of payments examples of double-entry transactions are given below (TCMB, 2012).

1. Export price of the goods is deposited in the exporter's resident country foriegn currency denominated bank account, foreign currency deposits abroad by resident importer of total amount transferred from the 100 units.

	Debit	Credit
Current Account		
Export	100	
Capital and Financial Account		100

Other Investment/Assets/Currency and deposits		

2. From banks broad, local resident banks secured amount of 100 units is used as syndicated bank loan.

	Debit	Credit
Current Account		
Other Investment / Assets / Currency and deposits		100
Capital and Financial Account		
Other Assets / Liabilities / Loans	100	

3. Some payments that are not included in the cash payments are also recorded in the balance of payments

When importing goods;

	Debit	Credit
Current account		
Goods		100
Capital and Financial Account		
Other investments/Liabilities/Commercial loans	100	

Period/term in the payment of the cost of goods to the exporter;

	Debit	Credit
Capital and Financial Account		
Other Investment / Assets / Currency Assets	100	
Capital and Financial Account		
Other investments/Liabilities/Commercial loans		100

The Importance of Balance of Payments

The balance or imbalance of balance of payments reflects a country's improvement or deterioration of its solvency (paying power). This most of the times is interpreted as an indication of the country's international economic and financial reputation. Balance of payments, is a result of the economic and financial policies being followed. It may also be naturally said that this is an indicator of the successes of the implemetation of particular policies (Seyidoğlu, 2013).

Deficit or surplus in balance of payments incured has extensive implications on the economy. For example, the country's national income and employment levels, growth rates, currency exchange rates, inflation rates, interest rates, wage growth, income distribution and foreign debt as the main economic variables are often related to the balance of payments. Thus, there is need to continuously monitor statistics of external economic factors and ecomomic relationships to determine whether there is a problem that requires timely regulatory and policy measures for the healthy performance of balance of payments.

Except governments, for all those involved with foreign trade and investment, companies and organizations, balance of payments is an important indicator. In addition to these, foreign stocks, bonds, treasury bills,

bank deposits as well as short and long-term financial assets investors, foreign direct capital investment planners have also a big interest in balance of payments developments.

World Bank and International Monetary Fund (IMF) also follows keenly the balance of payments of countries applying for loans in these institutions.

Accounts of balance of payments

The main accounts of the balance of payments are current account and capital & financial account (IMF, 2009).

Current Account

This is the most important item of the balance of payments. This includes the difference domestic and foreign goods, services, primary income (wages, investments, interest income and expense balance) and secondary income (unrequited transfers). Current account, first takes into account trade done with other countries. In this context, in the current account, exports of goods are added (+), while imports of goods are subtracted (-). The sum of goods transactions is called the trade balance. A positive trade balance for a country means that the sum of exports (the value of goods sold to other countries) is greater than the sum of imports (the value of goods purchased from other countries) (Ünsal, 2005).

Service transactions between a country and the rest of the world (trade services); tourism, transportation, insurance, financial services, education and shopping areas are included. The sum of country's goods and service transactions with other countries is called the balance of goods and services.

Individuals and companies in a country may have foreign assets (bonds, stocks, bank account). In return from for these assets they gain interest and profit income. In this case, for a positive net income, the country`s gains from foreign assets and investment income realised outside the country should be greater than foreign-owned assets and investment income (owned by foreign investors) realised inside the country.

The fourth and final type of current account transactions-a country's goods and services to other countries without payment or the complete opposite of this- non payment of goods and services obtained from other countries. These types of payments are located in the unrequited transfers section of the current account. Net unrequited transfers is positive, the transfers from the country to the other must be greater than the transfers from other countries.

Capital and Financial Accounts

We will analyse the capital account and the financial account in two ways. The capital account consists of capital transfers and non-manufactured goods and the purchase of non-financial assets / sales (Fabris and Kilibarda, 2008). While the financial account consists of direct investment (establishing a company in a foreign country, particpation of existing companies, profit capital to participation), portfolio investments (intake of mutual funds, bonds, stocks, etc. from foreign countries), other investments account consists of trade credits, loans, foreign exchange and deposits and reserve assets (monetary gold, special drawing rights (SDR)), currency and so on. If the country has current account deficit, it is financed by the capital - financial account surplus. However, if the current account deficit is more than the amount of any resulting capital inflows, the country's foreign exchange reserves are added. Rather to finance the current account deficit, capital inflows and exchange reserves are used. In this regard, the current account deficit for the country is highly dependent on the outside factors and the increase in external financing means. In this context, the importance of having satisfactory levels of foreign exchange reserves is obvious.

To equate capital and financial account in the main accounts of the balance of payments in the current account transactions, the net errors and omissions account is used. Payment of the balance of each transaction has two separate signs (credit and debit) due to the accounting system used to record the transactions. Every transaction is recorded with credits and debits of equal value, so the current account must always be equal in absolute value to capital and financial account. However, obtaining data from different sources, valuation, measurement and recording time creates differences; As a result, the difference in net errors and omissions is not truly reflected (TCMB, 2012).

The Sequence of Current Account in Turkey

Turkey's current account balance of payments sequence is examined (Table 2). Here it is seen that there are a few exceptions in the years being examined (www.tcmb.gov.tr). Especially in recent years, increases in the current account deficit is striking. This situation in Turkey's economy is an important indicator of foreign exchange deficit.

Table 2: A View of Turkeys Current Account of the Balance of Payments

YEAR	CAD	YEAR	CAD	YEAR	CAD	YEAR	CAD
1975	-1.648	**1985**	-1.013	**1995**	-2.339	**2005**	-21.449
1976	-2.029	**1986**	-1.465	**1996**	-2.437	**2006**	-31.836
1977	-3.140	**1987**	-806	**1997**	-2.638	**2007**	-37.781
1978	-1.265	**1988**	1.596	**1998**	2.000	**2008**	-40.372
1979	-1.413	**1989**	938	**1999**	-925	**2009**	-12.124
1980	-3.408	**1990**	-2.625	**2000**	-9.920	**2010**	-45.420

1981	-1.936	**1991**	250	**2001**	3.760	**2011**	-75.082
1982	-952	**1992**	-974	**2002**	-626	**2012**	-48.497
1983	-1.923	**1993**	-6.433	**2003**	-7.554	**2013**	-64.940
1984	-1.439	**1994**	2.631	**2004**	-14.198		

Source: www.tcbm.gov.tr (CAD: Current Account Deficit)

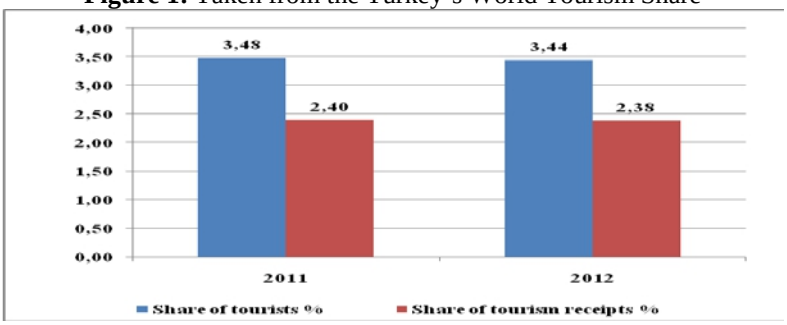
The rise in the current account deficit in Turkey primarily raises the question of sustainability. Sustainability of the current account deficit depends on the resources being used to finance it (YASED, 2011). Quality of financing of the current account deficit in Turkey is lower. Turkey's economy appears to depend on portfolio investments (hot money). In this context, for Turkey to achieve a sustainable current account deficit financing, it needs to increase long-term direct investment. The increase such investments in the financing of the current account deficit would play an important role.

Importance of tourısm ın terms of revenues to the turkısh economy

In many countries with tourism supply, the size of the current account deficit to a large extent depends on the revenue derived from the tourism industry revenue. Turkey which has a supply of tourism that can be spread to every month of the year and can earn more income derived this capacity as a country. Income from the tourism sector can be used in finacing foreign trade deficit. In this context, tourism revenues are undoubtedly one of the lifeguards for current account deficit (Sarıçay, 2012).

Tourism has become one of the largest and fastest growing sectors in the world in recent years. The number of international tourist arrivals and tourism revenues, particularly in recent years shows a steady increase (UNWTO, 2013). Worldwide increase in tourism has resulted in the increased importance of tourism as manifested in the positive outlook for tourism in Turkey. The number of tourists coming to Turkey as well as revenues from tourism have increased. When the tourism data were analyzed in 2012, Turkey was one of the 6 countries attracting more tourists.

Figure 1: Taken from the Turkey`s World Tourism Share



Source: It was prepared by us by using data obtained from UNWTO Tourism Highlights 2013

It can be noticed that there is a decrease in the number of tourists coming to Turkey and the decrease in her share of tourism revenues occuring in the world. This decrease in the number of tourists coming to Turkey. This situation and the low profiling of the tourists coming to Turkey refers to the inability of tourism to provide added value.

Table 3: International Competitiveness of Tourism Sector in Turkey (2012)

Competitiveness Indicators (Travel and Tourism Competitiveness Index)	No	Competitiveness Indicators (Travel and Tourism Competitiveness Index)	No
Policy rules and regulations	34	Tourism infrastructure	45
Environmental sustainability	95	Internet infrastructure	71
Security	79	Price competitiveness	112
Health and hygiene	64	Human Resource	68
Travel and tourism priority	63	Travel and tourism appeal	35
Air transport infrastructure	29	Natural Resources	78
Local transportation infrastructure	52	Cultural Resources	19
		General	**46**

Source: Blanke, Jennifer, Chiesa, Thea, "The Travel and Tourism Competitiveness Report 2013", World Economic Forum**.**

International competitiveness of the tourism sector in Turkey is examined. It is seen that the situation doesnt reflect the actual pontential (Blanke and Chiesa, 2013). Indeed, Turkey is the number 6 most visited country in the world, 46 in competitiveness index in (Table 3). Price competitiveness especially in the tourism sector is at a high rate of disadvantage, compared to an increase in the number of tourists and this results in the lower increase in the realized added value.

Table 4: Tourism Revenues According to Tourists (2005-2013)

YEARS	FOREIGN TOURISTS			LOCAL TOURISTS			TOTAL TOURISTS		
	TR (*1000$)	TN	AE ($)	TR (*1000$)	TN	AE ($)	TR (*1000$)	TN	AE ($)
2005	15.725.813	20.522.621	766	4.374.383	3.601.880	1.214	20.322.112	24.124.501	842
2006	13.918.757	19.275.948	722	4.463.614	3.872.721	1.153	18.593.951	23.148.669	803
2007	15.936.347	23.017.081	692	4.703.850	4.197.907	1.121	20.942.500	27.214.988	770
2008	19.612.296	26 431 124	742	5.418.439	4 548 855	1.191	25.415.067	30 979 979	820
2009	19.063.702	27 347 977	697	5.690.629	4 658 172	1.222	25.064.482	32 006 149	783
2010	19.110.003	28.510.852	670	5.558.366	4.517.091	1.231	24.930.997	33.027.943	755
2011	22.222.454	31.324.528	709	5.638.484	4.826.800	1.168	28.115.692	36.151.328	778
2012	22.410.364	31.342.464	715	6.354.378	5.121.457	1.241	29.007.003	36.463.921	795
2013	25.322.291	33.827.474	749	6.760.180	5.398.752	1.252	32.310.424	39.226.226	824

Source: www.ktbyatirimisletmeler.gov.tr,

Note: TR: Tourism income, TN: Tourist No, AE: Average Expenditure.

The number of foreign visitors and tourism revenues derived therefrom, despite the increase in the overall, there is a notewhorthy

reduction in average spending trends. The number of domestic visitors and average expenditure patterns can be said to be relatively stable.

Promotion of tourism in Turkey is analyzed according to year. The number of documents required in subsidized, interms of total investment amount, it can be said that there is a general increase in the numbers (Table 5).

Table 5: Tourism Incentives, Investment, Employment in Turkey

YEARS	Incentives Document Number	Total Investment Amount	Employment	Number of Beds
2005	228	1.874.053.533	36.295	84.946
2006	146	1.009.130.543	14.889	47.426
2007	156	875.173.715	11.352	36.463
2008	158	803.919.163	13.864	43.875
2009	166	880.687.650	12.280	51.592
2010	317	1.838.011.777	18.805	104.075
2011	280	1.743.741.022	13.094	88.047
2012	313	2.147.488.457	17.011	90.327

Source: www.ktbyatirimisletmeler.gov.tr

However, the increase in incentives and the size of its contribution to employment is not satisfactory.

Table 6: The Share in Balances of Services of Net Tourism Revenues (1984-2013)

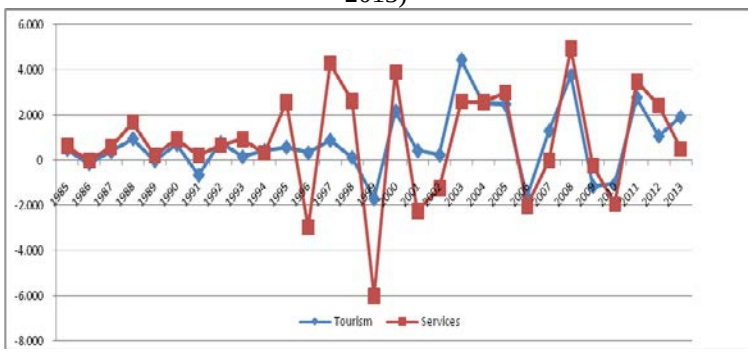
YEAR	NTR	BS	(%) share	YEAR	NTR	BS	(%) share
1984	271	986	**27,5**	**1999**	3.732	7.502	**49,7**
1985	770	1.600	**48,1**	**2000**	5.923	11.375	**52,1**
1986	637	1.590	**40,1**	**2001**	6.352	9.136	**69,5**
1987	1.028	2.162	**47,5**	**2002**	6.599	7.885	**83,7**
1988	1.997	3.833	**52,1**	**2003**	11.051	10.472	**105,5**
1989	1.992	4.028	**49,5**	**2004**	13.597	13.030	**104,4**
1990	2.705	4.966	**54,5**	**2005**	16.087	16.016	**100,4**
1991	2.062	5.164	**39,9**	**2006**	14.468	13.985	**103,5**
1992	2.863	5.807	**49,3**	**2007**	15.781	13.954	**113,1**
1993	3.025	6.740	**44,9**	**2008**	19.541	18.884	**103,5**
1994	3.455	7.052	**49,0**	**2009**	18.405	18.625	**98,8**
1995	4.046	9.620	**42,1**	**2010**	17.391	16.684	**104,2**
1996	4.385	6.657	**65,9**	**2011**	20.171	20.152	**100,1**
1997	5.286	10.912	**48,4**	**2012**	21.251	22.562	**94,2**
1998	5.423	13.518	**40,1**	**2013**	23.180	23.067	**100,5**

Source: It was prepared by us by using data obtained from www.tcmb.gov.tr

The share of net tourism revenues (NTR) are examined in the balance of services (Table 6); we can see that the ratio is increasing with years. Likewise, in 1984, while the ratio of net balance of payments to current account balance of services (BS) in tourism revenues was at 27.5 percent it

was 100.5 percent in 2013. This shows that the net tourism revenue is the most important item in the services account. In recent years,the surplus in net tourism revenues that resulted in the services account surplus is indicator of this importance.

Figure 2: Changing in Net Tourism Revenues and Changing in Balance of Services (1985-2013)



Source: It was prepared by us by using data obtained from www.tcmb.gov.tr.

Figure 2, shows a change in net tourism revenues by year in the balance of services. According to this figure, the positive and negative changes in the balance of services is directly influenced by the obvious changes in tourism revenues. Because of the negative change in net tourism income in the years, the change in the balance of services in general is also negative.

Table 7: Foreign Trade Deficit to Coverage Ratio of Net Tourism Revenues (1984-2013)

YEAR	NTR	FTD	CR (%)	YEAR	NTR	FTD	CR (%)
1984	271	2.910	9,3	**1999**	3.732	9.771	38,2
1985	770	2.976	25,9	**2000**	5.923	22.057	26,9
1986	637	3.018	21,1	**2001**	6.352	3.363	188,9
1987	1.028	3.206	32,1	**2002**	6.599	6.390	103,3
1988	1.997	1.813	110,1	**2003**	11.051	13.489	81,9
1989	1.992	4.190	47,5	**2004**	13.597	22.736	59,8
1990	2.705	9.448	28,6	**2005**	16.087	33.080	48,6
1991	2.062	7.290	28,3	**2006**	14.468	41.058	35,2
1992	2.863	8.076	35,5	**2007**	15.781	46.852	33,7
1993	3.025	14.081	21,5	**2008**	19.541	53.021	36,9
1994	3.455	4.167	82,9	**2009**	18.405	24.850	74,1
1995	4.046	13.152	30,8	**2010**	17.391	56.413	30,8
1996	4.385	10.264	42,7	**2011**	20.171	89.137	22,6
1997	5.286	15.048	35,1	**2012**	21.251	65.331	32,5
1998	5.423	14.038	38,6	**2013**	23.180	79.859	29,0

Source: It was prepared by us by using data obtained from www.tcmb.gov.tr

Turkey's balance of payments surplus in the services account deficit of the balance of the foreign trade deficit (FTD) is consistently smaller than the results (Table 7). In Turkey, tourism is the most important item in the

services balance. It is therefore also an important item in the reduction of international trade deficit. Thus, tourism plays a very strategic role.

Lıterature survey

In a literature review conducted on tourism income, be it domestic or international, the relationship between economic growth and GDP is outstanding. Tourism revenue and current account as two variables in the few studies conducted have a positive correlation.

Table 8: Samples of Domestic and International Studies Conducted

Author	Methodolgy	Country	Result
Bahar (2006)	VAR, Granger Causality	Turkey	The effects of tourism revenues on the growth.
Gökovalı and Bahar (2006)	Panel Data	13 Mediterrane an country	The effects of tourism revenue and the fixed capital investment on growth.
Aslan (2008)	Granger Causality, Cointegration	Turkey	Tourism to promote economic growth hypothesis.
Kızılgöl and Erbaykal (2008)	Granger Causality	Turkey	Economic growth from tourism renenues and an emerged unidirectional causal relationship.
Bahar and Bozkurt (2010)	Panel Data, GMM	21 countries	Significant correlation between tourism and economic development in developing developing countries.
Hepaktan and Çınar (2010)	Casualty	Turkey	The tourism sector has a positive impact on the balance of payments and employment.
Özdemir and Öksüzler (2006)	Cointergration, VECM	Turkey	Both short and long-term economic growth, a unidirectional relationship from tourism have been identified.
Dilber (2007)	Input-Output	Turkey	Tourism in Turkey, although it had a high value-added power forward and backward linkage coefficients are high.
Çetintaş and Bektaş (2008)	ARDL, Granger Causality, Cointegration	Turkey	Tourism is a major source of economic growth, the long-term effects are available.
Kutlar and Sarıkaya (2012)	ARIMA, VAR, Cointergration	Turkey	The relationship between GDP and Long-term tourism revenues, the number of incoming tourists and the number of Turkish citizen tourists going abroad.
Arslantürk and Atan (2012)	VAR, Granger Causality	Turkey	Tourism revenue causal relationship between economic

			growth and tourism income has an effect on economic growth.
Kulendran and Wilson (2000)	VAR, Granger Causality	Australia	It has been observed that there is a strong relationship between International tourism and international trade.
Shan and Wilson (2001)	VAR, Granger Causality	China	It has been observed that there is a strong relationship between ınternational tourism and international trade.
Chen and Chiou-Wei (2009)	VAR, Granger Causality	Taiwan and South Korea	Taiwan and South Korea's economic growth in the tourism hypothesis supported.
Kim and et al. (2006)	VAR, Granger Causality	Taiwan	The relationship between GDP and the number of tourists.
Narayan and Prasad (2003)	Granger Causality	Fiji	The relationship between economic growth and tourism revenues.
Durbarry (2004)	Granger Causality	Mauritius	The relationship between economic growth and tourism revenues.
Khalil and et al. (2007)	Granger Causality	Pakistan	The relationship between economic growth and tourism revenues.
Samimi and et al. (2011)	VAR, Granger Causality	Developing countries	Long-term relationship between economic growth and tourism. Interdependent relationship.
Lashkarizadeh and et al. (2012)	VAR, Granger Causality	Iran	Long-term relationship between economic growth and tourism. Interdependent relationship.
Srinivasan and et al. (2012)	ARDL	Sri Lanka	Tourism revenues on economic growth both short and long-term effects are positive.
Fayissa and et al. (2007)	Panel Data	42 African Country	The effect of tourism income on GDP and economic growth.
Lorde and et al. (2010)	VECM, Granger Causality	Barbados	The weak effect of tourism revenue on the sustainability of the current account deficit.
Walterskirchen (1998)	Comparison by year	Austria	The current account deficit is the most important reason is the lack of tourism revenues.
Kara and et al. (2012)	Engle-Granger, VAR, Granger Causality	Turkey	The positive effect of tourism revenues on current account deficit.

Set of data and methods

The study was aimed at determining the relationship between Tourism income (TI) and the Current Account Deficit (CAD) . VAR analysis method was used to determine the relationship bween the variables. In

addition, the Johansen methodology was also used and tested using the Granger causality impulse-response analysis relationship, direction and degree.

Time series econometrics approach assumed the variables taken in the models to be stationary. This is an assumption required for effective and consistent estimates. The average of a time series, variance and covariance discussed if time remains constant throughout the series, is called stationary series. However, when the impact of transport on economic time series tends to increase with time (with trend) it is not stationary in most cases.

In the absence of the stationary time series $y_t = \beta_1 + \beta_2 x_t + u_t$ may be counterfeit and the results obtained from such regressions can be misleading. Nonstationarity in multivariate models have been developed using different methods. With these methods, multivariate models and economic models were designed inorder not to loose the long-term equilibrium relationship. The presence of cointegration between the variables means there is "real long-term relationship". If the variables are not cointegrated, then there arises a problem of false regression and the econometric studies would be completely meaningless.

Because of Sims (1980) lack of externality exactness, VAR method with its specifications and explainatory variables was argued to be more appropriate to use. If externalities assumption is invalid, the system of economic relations research equations (simultaneous equations) must be modeled using (Brooks, 2008: Oh, 2005: Song et al., 2003). The purpose of the VAR model is not for parameters estimates, it is to determine the relationship between economic variables (Sims, 1980: Song et al., 2003: Song and Witt, 2000).

Co-integration theory allows non-stationary linear combination of the series used to test whether there is a long-run equilibrium relationship with the stationary and non stationary variables.

Co-integration analysis of the series are not stationary even in the case of a long-term relationship between the series and the assumption is that this relationship may exist in a stable structure. In other words, the co-integrated series of each variable in the system is assumed to be unique and that they are under the influence of permanent exogenous shocks rather than a common stochastic trend. If the co-intergrated series are on the same degree of stabilty, there may exist a relationship between the co-integrated series. The series have the same effect because of the stochastic trend established regression but a false regression may potray a significant regression Johansen (1988) co-integration test in the same order which is in stable series of systems of equations. The systems are located in each variable level and lagged where the values are based on VAR (Vector Auto Regression) analysis (Tarı and Yıldırım, 2009).

The system equation is defined as follows (Özgen and Güloğlu, 2004).

$$y_t = \alpha_1 + \sum_{i=1}^{p} b_{1i} y_{t-i} + \sum_{i=1}^{p} b_{2i} x_{t-i} + v_{1t} \quad (1)$$

$$x_t = c_1 + \sum_{i=1}^{p} d_{1i} y_{t-i} + \sum_{i=1}^{p} d_{2i} x_{t-i} + v_{2t} \quad (2)$$

P is the length of the delay in the above model, v zero mean, covariance with its own lagged values of zero and constant variance, with normal distribution shows a period of random error. The assumption is that the VAR model error is uncorrelated with their own lagged values to bring no restriction on the model, because the variable length of the delay can be overcome by increasing the autocorrelation problem. The optimal lag lengths in the VAR model with such criteria like Akaike, Schwarz, Hannan-Quinn may be determined. Cointegre models of the relationship between variables in the presence of a vector is necessary to determine direction. In practice, the time series of past values, predictions of present and future values of the series refers to whether the causality relationship will help or not. To test the casuality VAR model, Granger (1974),

$$\mathbf{y_{1t}} = \alpha + \sum_{i=1}^{n} \beta_i \mathbf{y_{1t-i}} + \sum_{i=1}^{n} \gamma_i \mathbf{y_{2t-i}} + \mathbf{u_t} \quad (3)$$

equation is used. Two variables in the equation are assumed to be generally stationary. Imposed constraints,

$$\gamma_1 = \gamma_2 = \cdots = \gamma_n = 0 \quad (4)$$

If these constraints, F or L are accepted according to the statistics, then the result that $\mathbf{y_{2t}}$, is not Granger cause of $\mathbf{y_{1t}}$ is concluded.

The VAR causality assessment on the future value of each variable in the system shows which variables have statistically significant effects. However, their relationship to F test results or how long these effects will last cannot be explained. That is, whether the effects F-test results on changes in the value of a variable on other variables in the system would be positive or negative cannot be shown. This information can be obtained by the VAR impulse-response and variance decomposition analysis (Brooks, 2008).

On macroeconomic aggregate, whichever is the most influential variable in determining the variance decomposition can be used as an effective policy tool. However, to determine how influential this variable is, the impulse-response functions can be used (Sarı, 2008). Put them in stimulus-response functions of a standard deviation in one of the random error period of the internal variables and they will reflect the impact of current and future values. Thus, as a result of policy shocks that may occur in the future, other variables will show how and in what way they react.

Below are the results from variables analysis obtained using Phillips Peron (PP) unit root test.

Table 9: PP Unit Root Test Results

VARIABLES	LEVEL	1. DIFFERENCE	VERDICT
TOURISM INCOME(TI)	-1.81101 (3)	-5.27* (1)	I(1)
CURRENT ACCOUNT DEFICIT (CAD)	-0.80042 (1)	-11.248 (1)	I(1)
CRITICAL VALUE % 1	-2.59794	-2.59842	
% 5	-1.94546	-1.94553	
% 10	-1.6138	-1.61376	

Note**:** If the values in the brackets are for the PP test, the bandwidth indicates the values

All the variable levels in Table 9 above include a non-static unit root. The variable`s first differences is seen when they are in steady state. Hence Series I (1) shows an integrated feature. In a Granger cointergration test among the variables the cointergre agent vectors use the eigenvalues and trace (mark) statistics. Below is a model showing Granger cointegration results.

Table 10: Granger Cointegration Test Results

	Unrestricted Cointegration Rank Test (Trace)				
	Number of samples				
First Model	Hypothesis CAD, TI	Eigenvalues	**Trace(Mark)** Statistics	**0.05** Critical Value	**Mac Kinnon** Probability
	r ≤ 0	0.332234	27.86348	12.3209	0.0001
	r ≤ 1	4.97E-07	3.43E-05	4.129906	0.9988

Table 10 is an analysis of the relationship between current account and the tourism revenues measurements geared to model Trace (mark) statistic value than the critical value (27.863>12.3209) are seen to be large between the variables and agent vectors. cointegre agent present in the model vector determines the required direction of the relationship between variables. In practice, y_{2t} of the past values of the time series, y_{1t} series forecasting the current and future value refers to whether the casualty relationship will be helpful or not. For the VAR model, Granger (1974) test,

$$y_{1t} = \alpha + \sum_{i=1}^{n} \beta_i y_{1t-i} + \sum_{i=1}^{n} \gamma_i y_{2t-i} + u_t \quad (5)$$

equation is used. Two variables in the equation are assumed to be generally stationary. Imposed constraints,

$$\gamma_1 = \gamma_2 = \cdots = \gamma_n = 0 \quad (6)$$

If the constraints, F or L are statistically accepted, the assumption that y_{2t}, is not Granger cause of y_{1t} is concluded. Granger causality results are shown below.

Table 11: Granger Causality Analysis Results

Granger Causality Test				
Causality Direction	**Observation**	**F-Statistics**	**Probability**	**Verdict**
Tourism Revenues are not the cause of Current Account	70	10.057	0.002	Refutable
Current Account is not the cause of Tourism Revenues		2.1198	0.1283	Irrefutable

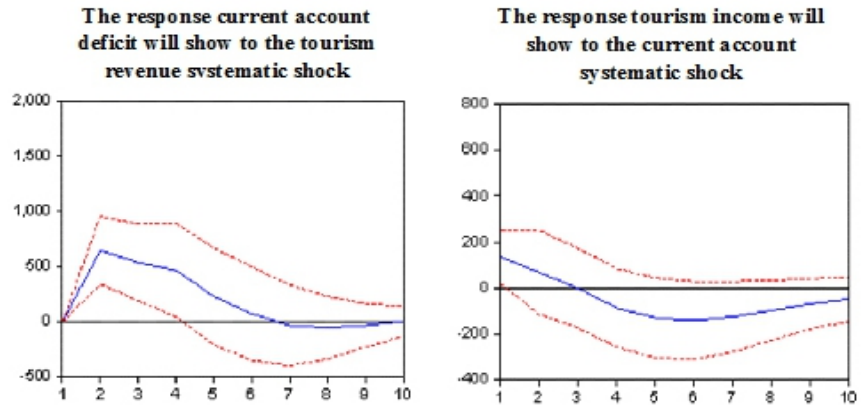
*Optimal lag length is 2.

Analyzing the results of causality from tourism revenues above, it can be seen that its one directional relationship effect to current account deficit is noticeable. Tha is, tourism revenue has an effect of relieving the current account deficit.

The assessment of VAR`s causality on the future value of each variable in the system in which variables in the model show to have statistically significant effects. However, the sign of relationships F test results cannot explain how long this will last. So, the F-test results of changes in the value of a variable on other variables in the system would not show whether the other variables have a positive or negative effect. This information can be obtained by the impulse-response and variance decomposition analysis (Brooks, 2008).

The effects on macro-economic aggregates and how many periods it lasted can be used as an effective policy tool and this variable is determined by the impulse-response functions (Sarı, 2008). Stimulus-response functions of a standard deviation shock in one of the random error periods of the internal variables reflects the impact of current and future values. Thus, as a result of policy shocks that may occur in the future, the attitude of other variables in terms of how and in what manner they will react to the shocks will be determined.

Figure 3: Impulse-Response Analysis Results



The effect of one unit of tourism revenue shock on the Current Account for a period of six (6) months will be a positive one, but this is ending after a six month period. In response to a shock in the current account, the impact on tourism revenues is negative for a period of six months and after that it decreases until when the effect ends after a period of 12 (twelve) months. Thus, theoretically it can be expected that tourism revenue has positive effect on the current account assets.

Conclusıon and recommendatıons

As it is worldwide, tourism in Turkey in recent years has become one of the largest and fastest growing industries. Especially during the crises that arise and become an epidemic in the real and financial sectors. Tourism has become of more strategic importance both for public and private investors. For the stability and sustainability of revenues, tourism in Turkey like in many countries has become one of the key sectors.

Turkey's current account deficit in absolute terms, in terms of both rise in ratio to GDP and deficit financing raises the issue of sustainability. And indeed in Turkey`s savings deficit. Turkey each year struggles to close the balance in its current account deficit partly arising from its dependence on foreign income sources. In this case she will need more savings from the foreign incomes. Quality of financing of the current account deficit is lower. The Turkish economy has shown to depend on portfolio investments (hot money). From this perspective, tourism revenues, which have shown to contribute to the reduction of internal and external deficits in the context of the realization of economic development is of strategic importance. Data obtained and applied in this study and the analyzes clearly show this situation.

Nonetheless, the results obtained show net tourism revenue in Turkey has the effect of reducing the current accoun deficit. In this context, for Turkey to address its current account deficit financing problem, her comparative advantage means that this problem can be addressed by putting more emphasis on the promotion of tourism and other tourism related alternatives.

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