The Impact of Trade Openness on Economic Growth in the Case of Turkey

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Abstract

International development scholars have advanced contrasting theoretical and empirical explanations for the relationship between trade and economic growth in the last fifty years. Turkey has great resource potential that may not be available in other countries .Turkey is one of the areas that have diversity in terms of trade components. Due to this condition, in 2014, Turkey was among the best countries in producing and exporting goods and services as well as in Trade Openness. This helped increasing the gross domestic product (GDP)**.** This study is analyzing the impact of trade openness on economic growth in the case of Turkey. We have applied the ARDL model to examine for a short and long run relationship between trade openness and economic growth over the sample period 1960 - 2014. Our results confirm co-integration among the series. Moreover, in the short run, trade openness promotes economic growth; while in the long run this relationship does not exist. Furthermore the results refer that in the long run this relationship is positive and statistically insignificant.

Keywords: Trade Openness, Economic Growth, ARDL Applications - Turkey

1. INTRODUCTION

The contemporary effort to make it easy to exchange goods and services, labor information, capital, and ideas across the borders is known as trade openness. The main aim is to integrate societies and economies at global level. Trade openness has helped movement of resources from developing to developed economies and improved technological advancement. Recently, world economies are reaping fruits (Benefits of) of trade openness due to the diffusion and absorption of technology. Progress of communication and transportation has helped rediscover the opportunities at global level and identify new international markets for exchange of goods and services. Openness allows foreign direct investment (FDI) in host country which encourages to economic growth by supplementing domestic capital, boosting productivity, redefining the concept of economic efficiency, and bringing the world together. In this background, the importance of a well-developed financial market can hardly concentrated in the spheres of economic growth.

This implies that openness adds to the meaning of economic cooperation on a larger scale where careful and well managed trade liberalization can be crucial to achieving sustainable economic growth in the short and long run.

The correlation between economic growth and trade openness has been investigated by academicians and policymakers since the last 5 decades. Despite the abundance of a bourgeoning literature on this topic the findings still failed to pin down the nature of the exact correlation between the series. On the other hand, previous literatures have produced two strands to better understand these relations: growth-led trade or trade-led growth hypotheses. That trade openness is an important engine of economic growth which is now well established in the literature. Through trade partners can mutually benefit and help increase the size of the pie. Trade openness seriously affects growth by adopting new and advance technology, and know-how from the technologically advanced countries which enhances the total factor productivity.

Among the important questions relating to economic growth and international trade is that whether more openness of a country always leads to increases to economic growth or not. One of the most believable arguments in favor of free trade respectively an outward-looking development policy is that international trade can play as an impetus for the flow of knowledge across international borders.

Previous literature believes that trade can serve as a catalyst for economic growth. Some researchers found a positive relationship between economic growth and trade(trade and economic growth) such as (Clark and Beckfield, 2009), trade flows (Muhammad Shahbaz (2012), Frankel and Romer, 1999), and trade liberalization (Greenaway et al., 1998; Sachs and Warner, 1995). However, opinions vary as to the purported mechanism linking exchange to growth. Previous theoretical study motivated states to import goods that the domestic economy is ill-suited to produce, as well as export goods that provide them with a comparative advantage.

Moreover, previous studies found that, trade relations form ''information bridges'' through which technical knowledge and innovation spread (Edwards, 1992; Grossman and Helpman, 1990; Romer, 1990). From this perspective, less developed nations may have much to gain by trading with advanced and economic integrated countries because the latter group provides access to the highest level of technical information available. By contrast, other literatures that have used structure based models highlight the relational

mechanisms that condition the returns to trade (Nemeth and Smith, 1985; Snyder and Kick, 1979). According to this investigation countries that are highly integrated in the world trade network enjoy leverage during exchange of goods and services, whereas isolated economies lack alternatives when sending and/or receiving goods. Therefore, when central states exchange goods with one another, differences in bargaining power result in superior terms of trade for the former.

2. OPENNESS TO TRADE AND ECONOMIC GROWTH

The relationship between trade openness and economic growth is also a widely investigated in applied economics. The theoretical framework that formally relates openness to trade to economic growth is provided by Grossman & Helpman (1991). In this framework, trade openness is seen as having a positive effect on economic growth by facilitating technology spillovers, which, in turn, would increase international competitiveness, productivity, and export revenues. Other theoretical explanations suggest that trade openness might have a negative effect on economic growth, especially in the case of low income countries. Furthermore, this alternative view is based on the idea that the structural characteristics of low-income developing countries tend to reverse the terms of trade at their disadvantage.

Theoretically, therefore, causality between openness to trade and economic growth can run on both directions (see Vlastou 2010). Empirical evidence shows that the relationship between trade openness economic growth remains to be inconclusive result; the literature is full of mixed findings. Studies such as Bahmani-Oskooee & Niroomand (1999) or Edwards (1992) found a positive impact of trade openness on economic growth, while others found insignificant impact of trade openness on economic growth (see, Harrison & Hanson, 1999). In addition, Vlastou (2010) in a recent study concentrating on the relationship between trade openness and economic growth in 34 African countries over the period 1960 and 2003, he found that openness to trade has a negative impact on economic growth. He also found that the causality runs from openness to economic growth, and not in the opposite direction.

3. LITERATURE REVIEW

Economic literature provides an empirical and theoretical evidence of productivity and supply-side effects of trade openness on domestic output and hence on economic growth by increasing capital formation and total factor productivity. In cross-countries studies, for instance, Bhagwati (1978) and Krueger (1978) recommended that trade liberalization encourages specialization in industries which leads to improve the efficiency and productivity in the long run. Tyler (1981) studied in the case of OPEC and middle income countries' he suggested that a growth in manufacturing exports leads technological progress which increases economic growth. In the case of Japan, Korea, Turkey and Yugoslavia, Nishimizu and Robinson (1984) illustrated that growth in exports raises total factor productivity by increasing competitiveness and economies of scale while imports' growth retards growth in total factor productivity.

Theoretical literature on the relationship between trade and economic growth reveals that international trade may have long run impact on economic growth. For instance, Grossman and Helpman (1990), Rivera-Batiz and Romer (1991), Barro and Sala-i-Martin (1997) discussed that in the long run, trade openness may encourage to economic growth by diffusing technical knowledge by importing high-tech items and from the spillover effects of foreign direct investment (FDI) for instance, financial openness, from the collaboration with the sources of innovations. Sachs and Rajan and Zingales (2003) recommended that trade liberalization pushes the governments to launch a reforms program to face the competition in international market. On contrary, Redding (1999) pointed out that trade openness impedes economic growth through comparative disadvantage in the growth of productivity in specialized sectors of an economy. In such scenario, (Lucas, 1988; Young, 1991a, 1991b) found that protection policies may stimulate technological advancements and leads to economic growth.

Furthermore, Romer (1990) used cross-section data of 90 countries; investigated the relationship between trade openness and economic growth. He documented that trade openness may helps in getting a wide range of innovations to raise domestic production and leads to economic growth. Edwards (1989) and Villanueva (1994) pointed out that human capital formation tends to increase the positive impact of trade openness on economic growth. Greenaway et al. (2002) investigated short and long run impacts of trade liberalization on economic growth by using panel data approach, they documented that there is j-curve relationship between trade liberalization and economic growth; they also illustrated that trade increases economic growth at certain levels of trade liberalization and then declines it.

Furthermore, Irwin and Tervio (2002) tested the trade-growth nexus by using data from the pre-World War I, the interwar, and the post-war periods, they pointed out that trade openness stimulates economic growth even after controlling endogeneity of trade between the countries of globe. Also Dowrick and Golley (2004) illustrated that trade openness encourages economic growth by improving productivity and investment also raises economic growth.

Dollar and Kraay (2003) examined the impact of trade openness on economic growth and they

documented that more open economies with better institutions develop faster and countries trade more with better institutions. Moreover, by using panel data, Barro (2003) reported that economic growth is positively affected with favorable terms of trade but statistical insignificant. Yanikkaya (2003) investigated the impact of trade openness on economic growth for 120 countries by using two indicators of trade openness such as volume of trade (exports+ imports) as share of GDP and trade restriction on foreign exchange on bilateral payments. He reported that both indicators of trade have positive impact on economic growth through the improvement in total factor productivity. In addition, Santos-Paulino and Thirlwall (2004) examined the impact of trade liberalization on economic growth for 22 developing nations. Their results illustrated favorable impacts of trade liberalization on exports growth which leads to economic growth. Alcalà and Ciccone (2004) tested the impact of trade openness on economic growth and labor productivity. They pointed out that trade openness leads increase of labor productivity and economic growth as well. Also, Dollar and Kraay (2004) investigated the correlation between trade openness and changes in growth rates. Their results indicated that positive relationships between both variables still exist. Rassekh (2007) investigated the relationship between–trade openness and economic growth for 150 countries and he applied the growth model developed by Frankel and Romer (1999). His empirical evidence indicated that low income countries benefit more from international trade as compared to developed economies. Furthermore, this alternative view is based on the idea that the structural characteristics of low-income developing countries tend to reverse the terms of trade at their disadvantage.) Kneller et al. (2008) examined non-linear relationship between trade openness and economic growth. Their empirical evidence indicated that countries benefit more from trade liberalization who have lower rates of trade tax, high levels of human capital, and import raw material to stimulate their industrial and manufacturing sectors.

Apart from that, Chang and Ying (2008) examined the trade-growth correlation in African countries. Their results indicated that trade and improvements in cargo services have significant and positive impact on economic growth.

Furthermore, Foster (2008) applied quintile regression approach to investigate the impact of trade liberalization on economic growth by using cross-section data. His analysis revealed that trade liberalization has negative impact on economic growth in short span of time; while in the long run countries with low rate of economic growth benefit more from trade liberalization. Kim and Lin (2009) reinvestigated that whether trade openness contributes to economic growth or not, by applying instrument-variable threshold regression procedure and using data of 61 countries. Their empirical evidence indicated that a stable relationship exists between economic growth and international trade. Dufrenot et al. (2010) applied quintile regression model to consider the determinants of economic growth such as terms of trade, investment, inflation, government balance, and population growth. Their results concluded that developing countries are obtaining more fruits of trade openness as compared to developed economies.

Das and Paul (2011) have applied GMM approach to investigate the impact of trade openness on economic growth for 12 emerging Asian economies. Their findings indicated that trade openness has a positive impact on economic growth. In addition, Chansomphou and Ichihashi (2011) used structural break cointegration approach to investigate the impact of trade openness on economic growth of South East Asian economies before and after the Asian financial crisis. Their findings indicated that financial crisis affected Malaysia, Indonesia, and the Philippines economies while performance of Thailand is better before and after the economic crisis. They also found that trade openness has a positive impact on the output in the case of Indonesia and Malaysia but this effect is smaller in the case of Thailand, and trade openness accelerates economic growth in the Philippines before the economic crisis and after that economic growth is inversely impacted by trade. Kim et al. (2011) reinvestigated the trade-growth nexuses in low and high income countries by applying threshold regression approach. Their results disclosed that trade openness boosts capitalization, financial development, productivity, and economic growth in high income countries, and in low income countries the effect is negative and statistically significant.

In the case of single-country studies, Deme (2002) investigated trade and growth nexus in the case of Nigeria. His results confirmed that long run relationship exist between trade and economic growth, and he concluded that trade plays an important role to raise economic growth. Jin (2003) used data of North Korean economy to test the impact of trade liberalization on economic growth. His findings indicated that trade openness increases domestic productivity which leads the improvements in living standards of the nation by increasing per capita income. This implies that an increase in trade openness boosts the Philippines economic growth. Pernia and Quising (2003) examined the nexus between trade openness and regional economic development in the case of the Philippines. Their results disclosed that trade openness promotes regional development by enhancing human capital formation and reducing poverty.

In the case of Turkey, Utkulu and Ozdemir (2004) applied endogenous growth theory to consider the relationship between trade openness and economic growth. Their empirical evidence indicated that trade policy have short and long- run effects on economic growth while investments in physical and human capital are determinants of economic growth.

In the case of Indonesia, Simorangkir (2006) applied SVAR model to consider the relationship between trade openness and economic growth. His analysis revealed that, trade and financial openness have a negative effect on domestic output and hence on economic growth. This result illustrates that lack of diversification in Indonesian products created low demand in international market and resulted in low domestic production. Jin (2006) examined the relationship between trade openness and economic growth in the case of Korea and Japan. Their analysis showed that trade openness has a negative effect on economic growth due to inverse impact of financial markets over macroeconomic performance.

Awokuse (2008) reexamined trade openness and growth nexus by using time series data and Granger causality tests and impulse response in the case of Argentina, Colombia and Peru. Their empirical evidence indicated that the exports led-growth hypothesis in Argentina and Peru. Rao and Rao (2009) investigated the impact of trade openness on economic growth in Fiji Island. His findings indicated that trade openness contributes to economic growth positively and significantly as well as to total factor productivity. Moreover, Daumal and Ozyurt (2010) investigated the relationship between trade and economic growth in the case of Brazil. Their results showed that trade openness have positive impact on economic growth by improving quality of human capital and boosting the industrial sector.

Katircioglu et al. (2007) examined relationship between international trade and economic growth in the case of India. Their results disclosed that imports and exports are main drivers of long run growth. Similarly, Jenkins and Katircioglu (2010) investigated direction of causality between trade openness, exchange rate and economic growth and the long run effect of trade openness on economic growth in the case of Cyprus. Their findings indicated that long run relations between these variables exist and the export-led growth while imports do not Granger cause economic growth. Furthermore, Katırcıoglu (2010) explored the relationship between economic growth and trade openness in the case of North Cyprus. The empirical results confirmed the existence of export-led-growth effect and reject the hypothesis of import led- growth does not exist.

In the case of Australia, Singh (2011) applied single-equation IV-GMM, DOLS, FMOLS, NLLS and system-based ML approaches to examine the relationship between trade openness and economic growth. His results showed that the presence of long run relationship between the variables. He also found that exports have significant and positive effect on economic growth.

Recently, in the case of Pakistan, Hye (2011) considered trade-led growth hypothesis. The analysis revealed that human capital and trade openness accelerate economic growth, and suggesting that the performance of human capital must be improved through technical training and education to attain fruits of trade openness on economic growth, and he concluded that negative effects of trade openness on economic growth exist.

Additionally, Shahbaz et al. (2011a) tested the impact of trade openness on economic growth in the case of Pakistan, by considering exports as an indicator of trade openness after financial reforms regime. The empirical results confirmed that long run relationship does exist between economic growth and trade openness. Further, results illustrated that export-leads growth hypothesis and exchange rate changes reduce domestic output while capital stock improves the volume of domestic output and hence economic growth. Finally, Klasra (2011) examined the association between trade and economic growth in Turkey and Pakistan, and he realized the positive impact of trade on economic growth in both countries.

4. DATA SOURCES

The five variables are used in this study such as Gross domestic product per Capita, Trade index, Export as a share of GDP, Import as a share of GDP, and Gross Capital Formation by using time-series data for over the span 1960–2014 as illustrated in table1. The data are collected from World Development Indicator (WDI 2010).

Table1

Variable	Description	Source
GDPC	Gross domestic product per Capita	WDI (2014)
TI	Trade Index	WDI (2014)
EX	Export as share of GDP	WDI (2014)
IM	Import as share of GDP	WDI (2014)
GCF	Gross Capital Formation	WDI (2014)

5. THEORETICAL FRAMEWORK

To analyze time series data in different order I(1) and I(0) together, Pesaran et al. (2001) suggested, the Autoregressive distributed lag approach (ARDL) to test for co-integration as an alternative to co-integration model for Engle-Granger (1987). The study uses the ARDL model to investigate the long run and the short run relationship between variables. The ARDL bound testing approach for co-integration can be written as following:

$$\Delta GDPC_t = \alpha_0 + \sum_{i=1}^{p} \alpha_1 \Delta GDPC_{t-i} + \sum_{i=0}^{p} \alpha_2 \Delta TI_{t-i} + \sum_{i=0}^{p} \alpha_3 \Delta EX_{t-i}$$

$$+ \sum_{i=0}^{p} \alpha_4 \Delta IM_{t-i} + \sum_{i=0}^{p} \alpha_5 \Delta GCF_{t-i}$$

$$+ b_1 GDPC_{t-1} + b_2 TI_{t-1} + b_3 EX_{t-1} + b_4 IM_{t-1} + b_5 GCF_{t-1} + \mu_t$$

Here Δ is the first difference operator; $\Delta GDPC_t$ refers for the natural log of Gross domestic product per capital, ΔTI_t refers for the natural log of Trade Index, ΔEX refers for the natural log of Export, ΔIM refers for the natural log of Import, ΔGCF refers for the natural log of Gross Capital Formation and μ_t refers for the error correction term.

The *F* test is used to determine whether the long-run relationship exists between the variables through testing the significance of the lagged levels of the variables. When the long-run relationship exists, the *F* test will illustrate which variable should be normalized.

The null hypotheses of no co-integration amongst the variables are

$H_0: b_{1i} = b_{2i} = b_{3i} = b_{4i} = b_{5i} = 0$

Against the alternative hypothesis

$H_1: b_{1i} \neq b_{2i} \neq b_{3i} \neq b_{4i} = \neq b_{5i} = 0$

For i=1, 2, 3, 4, 5.

The *F* test has a standard distribution which depends on; (1) whether the variables are included in the ARDL model are I(0) or I(1); (2) the number of independent variables; (3) whether the ARDL model contains an intercept and a trend; and (4) the sample size of the variables. According to Narayan (2005), the rejection of the null depends on the F-test and the critical bound tabulated value for small sample size.

The long run relationship among the variables exists if the calculated value of F - statistic is greater than the upper critical bound (UCB), and if the calculated value of F- statistic is less than the lower critical bound (LCB), the long run relationship does not exist. If the calculated value of the F-statistic comes in between the range of LCB and UCB, then the long run relationship is inconclusive, Mintz (1990) . The optimal lag can be selected using the model selection criteria like Akaike Information Criterion (AIC). Narayan (2005) stated the maximum lags for small sample size is two lags.

6. EMPIRICAL RESULTS AND DISCUSSIONS.

The primary and main step is to test the integration order of the variables to ensure that no variable is integrated at I(2) before applying the ARDL bounds testing approach to cointegration. The assumption of bounds test is that the variables should be stationary at I(0) or I(1) or I(0)/I(1). If any variable is found to be integrated at I(2) or beyond then F-test provides biased results that make long run relationship inappropriate and unreliable. We have also applied the Augmented Dickey–Fuller (ADF) (Dickey and Fuller, 1981) and the Phillips–Peron (PP) (Phillips and Peron, 1988) unit root tests with intercept and, with intercept and trend to avoid this problem. The results are reported in Table 2. The results shows that the variables have indicated unit root problem at their level form and found to be integrated at I(1).

Table 2 ADF and PP unit root tests on log levels of variables.

Variables	ADF test		PP test	
	Intercept	Intercept and trend	Intercept	Intercept and trend
ln(GDPC)	-0.151851	-3.569254[b]	-0.151851	-3.912335[b]
ln(EX)	-1.881816	-2.874363	-1.890887	-3.224302
ln(IM)	-1.871607	-3.543828[C]	-1.861164	-3.543828[b]
ln(TI)	-1.880808	-3.158084	-1.883170	-3.429651[c]
ln(GFC)	-0.743771	-2.937208	-0.743771	-3.104668

[a,b,c] *Denotes significant at 1%, 5%, and 10%.*

The Table 3 reports results of unit root test. The results revealed that all the series are non-stationary at level but stationarity of the variables is fulfilled at their 1st differenced form with intercept and trend. This implies that the variables are integrated at I(1). We can easily apply the ARDL bounds testing approach to cointegration following the unique order of integration of the variables. This shows that there is no violation of Pesaran et al. (2001) cointegration test's assumptions.

Table 3 ADF and PP unit root tests on first differences of log levels of variables.

Variables	ADF test		PP test	
	Intercept	Intercept and trend	Intercept	Intercept and trend
ln(GDPC)	-8.463735[a]	-8.320217[a]	-8.462052[a]	-8.320217[a]
ln(EX)	-8.024123[a]	-7.861516[a]	-8.024123[a]	-7.849595[a]
ln(IM)	-7.303934[a]	-7.192711[a]	-7.710365[a]	-7.561135[a]
ln(TI)	-7.275746[a]	-7.126822[a]	-7.365910[a]	-7.207367[a]
ln(GFC)	-9.353554[a]	-9.338701	-9.363672[a]	-9.338701[a]

[a,b,c] *Denotes significant at 1%, 5%, and 10%.*

Furthermore, the computation of the ARDL bounds testing is sensitive with lag length selection. The inappropriate selection of lag length may provide biased results. Therefore, it is necessary to have exact information about lag order of the series to avoid the problem of bias of the ARDL F-statistics (Shahbaz, 2010). We follow the Schwarz Bayesian Criterion (SBC) criteria for selection of lag length. Lütkepohl (2006) reported that dynamic link between the series can be captured by lag length selection.

The information about lag order once we used exports, imports and terms of trade as indicators of trade openness. The results indicated cointegration for long run relationship between economic growth and trade openness. The break point in trade series is due to the implementation of trade reforms in removing trade deficit under the umbrella of structural adjustment program forced by IMF. This implies that long run results are robust.

Moreover, Table 4 represents the co-integration test analysis, and the existence of a long run relationship has been established among the model's variables. Results explain that the computed F-statistics are 3.6207 the relevant critical value bounds at ten percent level (with unrestricted intercept and no trend) are 3.6207 and for the lower and upper bounds respectively. Then, the computed F-statistics is higher than the critical value of the upper bound, the null hypothesis of no long run co-integration correlation among the variables can be simply rejected.

TABLE 4 Results from bound tests.

Lag Structure:					ARDL(1,0,0,0,0)	
F-statistics	1% Critical value		5% Critical value		10% Critical value	
	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)
3.6207 ***	3.593	4.981	2.670	3.781	2.259	3.264
K=5, N=50						

The critical value according to Narayan (2005) (Case III: Unrestricted intercept and no trend)
(***) Significant at 10%

After finding the existence of cointegration between trade openness and economic growth as shown in Table 4, the next step is to explore the short and long run marginal impacts of trade and gross capital formation on economic growth in the case of Turkey.

The results for the long run reported in Table 5 show that export is positively linked to economic growth but it's statistically insignificant. These findings are similar with Shahbaz et al. (2011b) who found a positive relationship between exports and economic growth. The impact of trade and imports on economic growth are also positive and statistically insignificant. The impact of terms of gross capital formation on economic growth is positive and statistically significant at 1% level. This indicates that a 1% improvement in terms of gross capital formation raises economic growth by 1.0127 % by remaining other things constant. The same findings are reported by Dufrenot et al. (2010) in the case of developing economies.

TABLE 5 Long run relationships
ARD (2,0,0,2,1) selected based on Schwarz Bayesian Criterion

Dependent variable is dLGDPC			
Variable	*Coefficient*	t-Statistic	*Probability*
Constant	-13.1065	-2.4971	.016
$\ln(EX_t)$	.75391	.32315	.748
$\ln(IM_t)$	-.13720	-.035964	.971
$\ln(TI_t)$	-1.3893	-.23248	.817
$\ln(GCF_t)$	1.0127 [a]	6.0390	.000
R-squared	.99857		
F-statistic	3.6207		
DW-statistic	1.7505		

[a] *Significant at 1%.*

Moreover, all variables are also passes all diagnostic tests against serial correlation (Durbin Watson test

and Breusch– Godfrey test), heteroskedasticity (White heteroskedasticity test), and normality of errors (Jarque–Bera test). The Ramsey RESET test also suggests that the model is well specified as shown in Table 6.

TABLE 6 Results of diagnostic tests.

Test statistics:	x^2 statistic	Probability
Jarque-Bera(normality)	.572	n/a
LM test (1) correlation	.276	.333
ARCH test	.819	.294
Ramsey RESET test	.797	.819
CUSUM test	Stable	Stable
CUSUMQ test	Stable	Stable

The results of Table 7 show the short run relationship between trade openness and economic growth. The results indicate that trade index has a positive impact on economic growth and statistically significant at 1% level. Meaning that, a 1% increase in combined effect of trade is linked with 0.21958 % boost in economic growth. This illustrates that trade openness in the country which increases domestic output and hence exports that contributes to economic growth.

TABLE 7 Short run relationships
ARD (2,0,0,2,1) selected based on Schwarz Bayesian Criterion

Dependent variable is dLGDPC

Variable	Coefficient	t-Statistic	Probability
Constant	-.10972	-2.3052	.026
$\ln(GDPC_t)$	.082717	.31844	.752
$\ln(EX_t)$	.082717	.31844	.752
$\ln(IM_t)$	-.015054	.41737	.971
$\ln(TI_t)$	.21958 [a]	3.7390	.001
$\ln(GCF_t)$	.52968 [a]	15.2059	.000

[a] Significant at 1%.

Overall results imply that trade stimulates economic growth in the short-run through economies of scale, efficient allocation of resources, increase in domestic capacity utilization, improved productivity due to spillover effects. All these factors create ground for competitive environment in domestic industries and thereby enhance share in international market (Din, 2004).

Financial development opens opportunities for entrepreneurial talent, allows human capital formation and facilitates trade related activity by offering financial resources at cheaper cost. The enhancement of physical and human capital in the country not only adds the confidence of foreigners but also to the local investors. These together create synergy for enhanced domestic output and hence economic growth (Shahbaz, 2009).

Finally, when analyzing the stability of the long-run coefficients together with the cumulative sum (CUSUM) and the cumulative sum of squares (CUSUMQ) which are applied Following as Pesaran cited in Bahmani-Oskooee (2001), the stability of the regression coefficients is evaluated by stability tests and they can explain whether or not the model equation is stable over time. This stability test is appropriate in time series data, especially when we are unsure about when structural change may be have taken place. CUSUM and CUSUMQ statistics are plotted against the critical bound of 5% significance. According to Bahmani-Oskooee and Wing NG (2002), if the plot of these statistics remains within the critical bound of the 5% significance level, the null hypothesis (i.e. That all coefficients in the error correction model are stable) cannot be rejected. The plot of the cumulative sum of the recursive residual is presented in graph 1-2. As shown, the plot of both the CUSUM and the CUSUMQ residual are within the boundaries. That is to say that the stability of the parameters has remained within its critical bounds of parameter stability. It is clear from both the graphs presented in Figure (1-2) that both the CUSUM and the CUSUMQ tests confirm the stability of the long-run coefficients.

7. CONCLUSION

Trade openness promotes economic growth through various channels e.g., achieving efficiency in the allocation of resources due to export oriented policies; attracting foreign direct investment; providing access to advanced technology to enhance domestic production; creating economic and financial integration; enhancing total factor productivity, to name a few. In line with the theoretical arguments, the present study examines whether trade openness promotes or impedes economic growth in the short and long run. Using ARDL bounds testing approach which developed by Pesaran (2001). The findings suggest that economic growth gets boosted from gross capital formation and trade index which help sustained economic growth in the short and long run.

Moreover, Leamer (1995) and Vamvakidis (2002) discussed that proper implementation of economic and trade policies enables an economy neutralize external shocks and the benefit from trade openness. For trade to have meaningful effect on economic growth, Turkey should concentrate more on financial development. The

latter not only contributes to economic growth through capital formation but also promotes trade activity by making financial resources available at lower cost; attracting foreign direct investment as well as facilitating development of advanced technology. Grossman and Helpman (1991), Young (1991a, 1991b) and Rivera-Batiz (1991) highlight the role of human capital in economic development. Trade openness promotes economic growth through spillover effects and diffusion of advanced technology brought from the developed world.

Our findings confirm positive and strong complementarily relationship between trade openness and gross capital formation in accelerating economic growth in the short and long run. This shows that human capital plays a vital role in economic growth. The magnitude of economic growth due to trade openness and financial development depends upon the availability of human capital in the country especially skilled ones. The government should focus on developing human capital, financial sector and trade expansion through appropriate economic and trade policies for sustained long run economic growth.

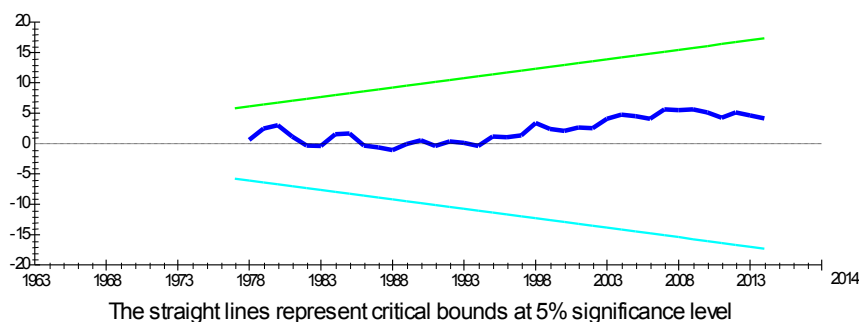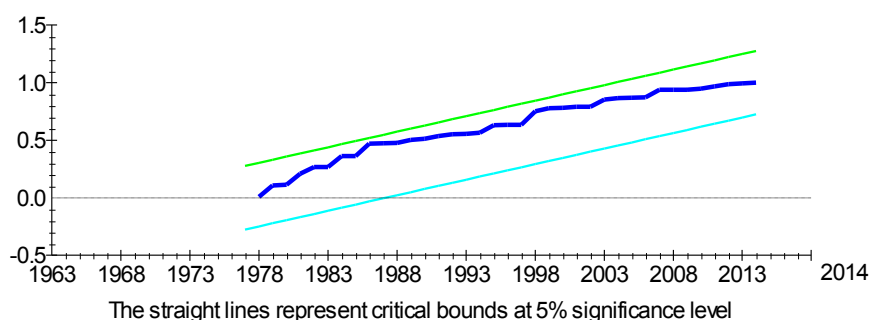**APENDIX:**
FIGURE 1 **CUMULATIVE SUM OF RECURSIVE RESIDUALS.**

The straight lines represent critical bounds at 5% significance level

FIGURE 2 **CUMULATIVE SUM OF SQUARES OF RECURSIVE RESIDUALS**

The straight lines represent critical bounds at 5% significance level

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