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International Conflicts and Economic Growth: The Case of Turkey

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Abstract
In this paper, we have examined the asymmetric relationship between international conflicts and economic growth and found that in the long-run and short-run there is not any asymmetry in this subject. We have also found that growth rate should be tested with structural breaks because of some structural changes in Turkish economic performance. Our analysis indicate that there is a long-run and symmetric relationship between international conflict and economic growth in Turkey. As we looked at the long-run multiplier of our model, it is an important finding about international conflict. Any increases in international conflict cause a negative effect on growth in the long-run. Also with a seeing at a glance to short-run model, we discover that main effect of short-run shocks would be absorbed in model. And approximately 66% of shocks would be corrected each year. So we can conclude that international conflict has a negative impact on growth at long-run and economic system of Turkey could adapt with external shocks very quickly.

Key words: International conflict, economic growth, asymmetry relations.

INTRODUCTION

In the area of international relations, it is accepted that national interests play a role to shape the international relations. Although there is a disagreement about the definition of the concept of national interest, from a broader perspective, it is possible to define it as the social, economic and military goals of nations. In a narrow sense of definition of national interest, it means obtaining economic advantages from international relations. It could be said that one of the main objectives of improving and/or sustaining international political relations is economic interests. The aim of the study is to determine the effects of existing international conflict on economic growth. Therefore, it is important to determine how Turkey's diplomatic relations affected its economic activities. In this context, the direction and the size of causality between international economic and political relations become important.

In this study, we analyze the relationship between conflicts in Turkish foreign policy and its economic growth by using the quarterly data between the years 1987 and 2008. In section one, we provide a review of both theoretical and empirical literature. In the second section, we analyze the direction and scope of the relationship between foreign policy and economic growth for Turkey. The final section includes a discussion of the findings.

LITERATURE REVIEW

The effects of international conflicts on economic growth would arise through a number of channels. One such channel is the effect of foreign trade on international conflicts that varies in the view of different approaches. According to the liberal trade approach, economic activities, especially trade, could decrease conflicts between countries therefore, it could contribute to ensure an atmosphere of peace. There are comprehensive studies on the positive effect of international trade on economic growth. Balassa (1986), Dollar (1992), Sach and Warner (1995) asserted that outward-oriented economies grow faster than inward-oriented economies. Another group of authors, Saggi (2000), Coe and Helpman (1995) pointed out that international trade influences economic growth by technological spillover. In a similar vein, transnational connections, increasing communication, and institution building will also reduce conflict and contribute to peace-making. According to Kleinberg and Fordham (2013: 690), this view is based on two basic points. First, from economic perspective, a conflict in foreign policy would cause higher opportunity cost of loss in trade if the trading partner involves a major country. Second, countries that have advanced trade relations with others would not choose military options to solve problems in foreign policy.

Another approach is the Marxist-Leninist one according to which economic activities increase conflicts due to the very nature of capitalism. This approach argues that foreign trade increases conflicts among countries. In his analysis of capitalism, Lenin argued that in the 19. Century, monopoly capitalism replaced the competitive capitalism and this meant both monopolization and reactionary aspects of capitalism become dominant. In a similar vein, according to Luksemburg (1913), capital accumulation is associated with militarism. In addition, capitalism is known as a system in which economies are in destructive competitions. Mopolistic structure of capitalism and its emperialistic characteristics were later developed by Paul Baran and Paul Sweezy who are major Marxist economists. According to them, in the monopoly stage of imperialism free trade principles make deterioration of social structure of underdeveloped countries. Additionally, international trade is a tool to make such countries dependent on developed countries. According to this approach, trade between underdeveloped and developed economies would lead to capital flows from underdeveloped to developed economies. For these reasons, the nature of capitalism is not a peaceful system.

The relationship between international conflicts / disagreements and economy could be established by using military expenditures. Problems and conflicts among countries provoke insecurity that leads to an increase in military expenditures of countries. The effect of an increase in defense expenditures on economic growth varies both for studied period and country groups. It is claimed that the negative effect of the increase in defense expenditures on economic growth arise through "crowding out" (Smith, 1980; Rasler & Thomson, 1988; Deger, 1986; Antonakis, 1997). In their studies, Frederiksen and Looney (1982) analyzed that the relationship between economic growth and defense expenditures for underdeveloped countries. They claimed that the increase in defense spending has negative effects on economic growth for underdeveloped countries which have limited resources.

DATA AND METHOD

In our paper we use quarterly data from 1987: Q1 to 2008: Q3 of Turkey by looking at its economic growth rate and a conflict index that is developed for the same period. Real growth rate is calculated by dividing Turkish nominal GDP by GDP deflator index which are obtained from International Financial Statistics of IMF website. Economic growth rate is calculated from real GDP. Conflict index source is International Country Risk Guide (ICRG) where data for the index are provided monthly, but in the present study, we used an average of three month.

We use asymmetric and nonlinear cointegration by threshold cointegration method that were introduced by Balke and Fomby, (1997). Granger and Yoon (2002) mentioned the hidden cointegration risk that may exist in the model when negative and positive components are cointegrated. Schorderet (2002, 2003) developed Granger and Yoon's (2002) arguments for estimation of hidden cointegration asymmetric effect. The asymmetric autoregressive distributed lad (ARDL) model combines a nonlinear long-run (cointegrating) relationship with nonlinear error correction by using partial sum decompositions.

Consider the asymmetric long-run relationship as:

$$y_t = \beta^{+}x_t^{+} + \beta^{-}x_t^{-} + u_t \qquad (1)$$

Where x_t a k × 1 vector of regressors decomposed as $x_t = x_0 + x_t^{+} + x_t^{-}$.
Where x^{+} and x^{-} are partial sum processes of positive and negative changes in x_t.

In our present study we will use ARDL to estimate asymmetric effect of index on real economic growth rate. Shin, Yu, and Greenwood-nimmo, (2014) introduced the nonlinear autoregressive distributed lag (NARDL) estimator that was derived from Pesaran, Shin, and Smith, (2001) seminal ARDL method work. Narayan, (2005) extended Pesaran et al., (2001) ARDL method for small observations. Therefore, in this study, we will use NARDL method by both Pesaran et al., (2001) and Narayan, (2005) statistics for determine existence of nonlinear cointegration.

We assume that index has following long-run relationship with real economic growth:

$$GRW_t = \alpha_0 + \alpha_1 IND_t + \epsilon_t$$

where GRW is the real economic growth rate respect to last years same quarter and IND is index of conflict. And $t = 1,2\ldots T$ is the number of periods. For ordinary error correction model (ECM) we can have the following equation:

$$\varDelta GRW_t = \beta_0 + \sum_{i=1}^{p} b_i \varDelta GRW_{t-i} + \sum_{i=0}^{q} c_i \varDelta IND_{t-i} + \theta\epsilon_{t-1} + u_t \qquad (2)$$

Where $\varDelta$ represents first difference operator. Here ϵ represents the error-correction term that produced by the OLS residuals series from the long-run cointegrating regression mentioned at equation no 1.

Due to Shin et al., (2014) method linear relationship between our variables could be estimated by error correction model:

$$\varDelta GRW_t = \gamma + \beta_1 GRW_{t-1} + \beta_2 IND_{t-1} + \sum_{i=1}^{p} b_i \varDelta GRW_{t-i} + \sum_{i=0}^{q} c_i \varDelta IND_{t-i} + u_t \qquad (3)$$

Here $\gamma = \beta_0 - \theta\alpha_0$, $\beta_1 = \theta$, $\beta_2 = -\alpha_1\theta$ and $\beta_1, -\frac{\beta_2}{\theta}$ are representing error-correction term and index coefficient in long-run. Where b_i and c_i are the short-run coefficients.

In order to determine asymmetric pass-through of index to growth, we follow Schorderet (2002, 2003) and Shin et al., (2014) approach. This approach requires decomposing the index variable into positive and negative shocks sub-variables. IND+ and IND- are therefore the partial sums of positive and negative changes in the index variable. We calculate them as follows:

$$IND_t^{+} = \sum_{i=1}^{t} \varDelta IND_i^{+} = \sum_{i=1}^{t} max(\varDelta IND_i, 0) \; ; \; IND_t^{-} = \sum_{i=1}^{t} \varDelta IND_i^{-} = \sum_{i=1}^{t} min(\varDelta IND_i, 0) \qquad (4)$$

Following equation (4), equation (3) can then be expressed by distinguishing long and short runs asymmetric relationships:

$$\Delta GRW_t = \gamma + \beta_1 GRW_{t-1} + \beta_2^{+} IND_{t-1}^{+} + \beta_2^{-} IND_{t-1}^{-} + \sum_{i=1}^{p} b_i \Delta GRW_{t-i} + \sum_{i=0}^{q} \left(\pi_i^{+} \Delta IND_{t-i}^{+} + \pi_i^{-} \Delta IND_{t-i}^{-} \right) + u_t \quad (5)$$

Where $\psi^{+} = \frac{-\beta_2^{+}}{\theta}$, $\psi^{-} = \frac{-\beta_2^{-}}{\theta}$ are positive and negative long-run coefficients of the index to economic growth rate respectively.

Following (Shin et al., 2014) equation (5) could be divided into long run asymmetry and short-run symmetry (displayed in equation (6)) and also long run symmetry and short-run asymmetry (displayed in equation (7)).

when asymmetry exist only in the long-run:

$$\Delta GRW_t = \gamma + \beta_1 GRW_{t-1} + \beta_2^{+} IND_{t-1}^{+} + \beta_2^{-} IND_{t-1}^{-} + \sum_{i=1}^{p} b_i \Delta GRW_{t-i} + \sum_{i=0}^{q} \pi_i \Delta IND_{t-i} + u_t \quad (6)$$

when asymmetry exist only in the short-run:

$$\Delta GRW_t = \gamma + \beta_1 GRW_{t-1} + \beta_2 IND_{t-1} + \sum_{i=1}^{p} b_i \Delta GRW_{t-i} + \sum_{i=0}^{q} \left(\pi_i^{+} \Delta IND_{t-i}^{+} + \pi_i^{-} \Delta IND_{t-i}^{-} \right) + u_t \quad (7)$$

All (5), (6), (7) equations present the long-run cointegration between growth rate and positive and negative components of the index.

In addition to Pesaran et al., (2001), the linear ARDL approach (Shin et al., 2014) proposes the bounds test in order to check for existence of long-run asymmetric cointegration. Bounds test is used for jointly testing all lagged level repressors. There are two ways to check existence of long-run cointegration: t-statistics (Banerjee, Dolado, & Mestre, 1998) and F-statistics (Pesaran et al., 2001). The null hypothesis of t-statistics approach was defined as $\beta_1 = 0$ against alternative hypothesis $\beta_1 < 0$. Where the null hypothesis of F-statistics is defined as $\beta_1 = \beta_2 = 0$ against alternative hypothesis $\beta_1 \neq 0$ or $\beta_2 \neq 0$ for long-run symmetry case . In the case of long-run asymmetry, the null hypothesis would be $\beta_1 = \beta_2^{+} = \beta_2^{-} = 0$. Calculated F values must be compared with tabulated F values (Pesaran et al., 2001) and in the case of small observations it should be compared with formalized F-Values (Narayan, 2005).

Existence of the long-run symmetry should be tested by Wald test of the null hypothesis of $\beta_2^{+} = \beta_2^{-}$. For checking short-run asymmetry, the null hypothesis of $\sum_{i=0}^{q} \pi_i^{+} = \sum_{i=0}^{q} \pi_i^{-}$ should be used. If null hypothesis of symmetry is to be rejected, it means that our model allows asymmetric effect.

By rejecting the null hypothesis of symmetry, asymmetric dynamic multiplier of change of index IND^{+} and IND^{-} would be found as:

$$m_h^{+} = \sum_{i=0}^{h} \frac{\partial GRW_{t+i}}{\partial IND_t^{+}} \; ; \; m_h^{-} = \sum_{i=0}^{h} \frac{\partial GRW_{t+i}}{\partial IND_t^{-}} \quad (8)$$

Where $h \rightarrow \infty$, $m_h^{+} \rightarrow \psi^{+}$ and $m_h^{-} \rightarrow \psi^{-}$. The dynamic multipliers could capture the positive and negative shocks of the index on the growth rate from an initial equilibrium to the new equilibrium (Shin et al., 2014).

ECONOMETRIC RESULTS

All variables used in the ARDL model must be integrated in order either with zero or one (Pesaran et al., 2001). So for avoiding from I (2) we must check used variables unit root tests. Therefore before estimating ARDL model, unit root test should be performed for all variables.

In the first stage the order of integration was tested using the Augmented Dickey Fuller (ADF), Elliott-Rothenberg-Stock DF (DFGLS), Phillips Perron (PP), Kwiatkowski Phillips Schmidt Shin (KPSS), Zivot and Andrews (ZA) and Lumsdaine and Papell (LP) unit root tests.

Table 3.1: Unit Root Tests Statistics

Variable	Level	Model	ADF	DFGLS	PP	KPSS	ZA	LP
INDEX	Level	Constant	-3.544616*	-3.03709*	-3.592563*	0.204402*	-6.24519*	-7.1178*
INDEX	First Difference	Constant	-9.143849*	-9.198767*	-10.72674*	0.131008*	-6.347188*	-8.5494*
INDEX	Level	Constant + Trend	-3.531076**	-3.356528**	-3.565896**	0.201416*	-6.102434*	-7.0325**
INDEX	First Difference	Constant + Trend	-9.112186*	-9.214405*	-11.42748*	0.068798*	-6.408264*	-9.2100*
INDEX	Level	Trend					-4.720142**	-5.6218
INDEX	First Difference	Trend					-6.05352*	-7.8942*
INDEX	Level	None	-0.401167		-0.228701			
INDEX	First Difference	None	-9.198767*		-10.82567*			
RNGNP_G	Level	Constant	-3.825197*	-2.691902*	-4.768979*	0.100292*	-4.627535***	-5.2387
RNGNP_G	First Difference	Constant	-7.39981*	-1.323433	-10.53293*	0.024833*	-7.241513*	-7.8880*
RNGNP_G	Level	Constant + Trend	-3.78611**	-3.415291**	-4.800354*	0.056231*	-4.785891	-5.5303
RNGNP_G	First Difference	Constant + Trend	-7.366326*	-5.088201*	-10.46346*	0.024018*	-7.354676*	-7.9231*
RNGNP_G	Level	Trend					-3.999179	-4.8157
RNGNP_G	First Difference	Trend					-6.924416*	-7.1295*
RNGNP_G	Level	None	-2.067801**		-3.693246*			
RNGNP_G	First Difference	None	-7.450086*		-10.59927*			
*- stationary at 1% , **-stationary at 5% , ***-stationary at 10%								

While all traditional unit root tests including ADF, PP, DFGLS and KPSS reveal that both variables are stationary at level, ZA and LP tests reveal stationarity at level only for INDEX and non-stationary for Real Growth Rate.

Table 3.2: The results of model estimations

Variable	Symmetric	Short-run Asymmetric	Long-run Asymmetric	Long-run and Short-run Asymmetric
β_1	-0.700993* [-5.754671]	-0.678914* [-5.507488]	-0.712425* [-5.778706]	-0.686908* [-5.438490]
γ	4.229708 [0.844120]	5.091865 [1.007976]	2.538465*** [1.804642]	3.413338 [2.118796]***
β_2^-	-	-	-0.105443 [-0.196304]	-0.148234 [-0.274437]
β_2^+	-	-	-0.045755 [-0.083639]	-0.118116 [-0.213793]
β_2	-0.121355 [-0.226913]	-0.158745 [-0.296293]	-	-
b_1	0.233577*** [1.903806]	0.186939 [1.456492]	0.239673*** [1.942039]	0.194506 [1.483567]
b_2	0.332513* [2.877089]	0.288341** [2.390337]	0.336766* [2.899945]	0.292921** [2.397774]
b_3	0.495111* [4.503138]	0.488190* [4.426063]	0.499845* [4.522240]	0.491491* [4.410258]
π_0^-	-	1.760272 [1.435381]	-	1.683663 [1.341630]
π_0^+	-	0.833205 [0.884481]	-	0.921559 [0.937002]
π_1^-	-	1.498589 [1.174001]	-	1.468637 [1.140417]
π_1^+	-	-0.231633 [-0.274123]	-	-0.203206 [-0.237773]
π_0	1.142135*** [1.682213]	-	1.195435*** [1.744135]	-
π_1	0.443496 [0.705124]	-	0.436981 [0.692282]	-
Bounds F-statistic	17.04301	12.71674	11.45268	10.23631
Short-run Wald F-Statistic	-	1.834682	-	1.366400
Long-run Wald F-Statistic	-	-	0.508149	0.114206
R-squared	0.418918	0.434730	0.423106	0.435678
F-statistic	7.312277*	5.896178*	6.417437*	5.249857*
Akaike info criterion	5.733087	5.756132	5.751170	5.779770
Schwarz criterion	5.973031	6.056062	6.021107	6.109693
Hannan-Quinn criterion	5.829216	5.876293	5.859315	5.911947

We have used the Zivot and Andrews (1992) test for checking integration order of variables. Zivot and Andrews method allow for one break in the intercept of the trend function or one break in intercept and slope. Lumsdaine and Papell (1997) introduced a novel procedure to capture two structural breaks in a series. They proved that unit root tests that allow for two structural breaks are more powerful than those which allow for a single break.

The next step after checking of unit root tests is determining of ARDL order by using an information criterion. As for information criteria, Schwartz criterion was used to find best ARDL model in this study. Schwartz criterion suggest that ARDL(3,1) is the best model for all of symmetric, only short-run asymmetry, only long-run asymmetry, and short-run and long-run asymmetric models. Therefore, the third lag of growth variable and the first lag of index variable should be used for ARDL model. Symmetric, only short-run asymmetric, only long-run asymmetric and short-run and long-run asymmetric models were estimated with ARDL (3,1) and all results are presented in Table 3.2.

Table 3.2: ARDL (3,1) Estimation Results

As it can be seen from Table 3.2 all null hypotheses about asymmetry were accepted. Therefore, we can reject all asymmetric effects of index variable on growth at all situations including the short-run, the long-run and both asymmetric effect. With these values, only symmetric model should be used for checking the existence of cointegration between economic growth and index variables. As estimations for symmetric model, $\beta_1, -\frac{\beta_2}{\theta}$ are representing error-correction term and index coefficient in longrun, respectively. In our estimation, we have found that the long-run relation between variables is negative and the index negatively affects growth in the long-run.

And Pesaran I (0) bound value for this model is 4.94 where I(1) value is equal to 5.73. Narayan (2005) suggests different table values for models with lower than hundred observations. The Narayan I(0) value for this model is: 5.06 and I(1) value is: 5.93 . Wald-F values estimated for symmetric model 17, 04 that implies that no co-integration hypothesis is rejected. According to the symmetric model, results of the model is significant and there is no autocorrelation, heteroscedasticity and normality problem.

The result of estimation of equation Error Correction Model (2) is in table of 3.2.

Table 3.2: The Result of Error Correction Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
β_0	0.043387	0.455810	0.095187	0.9244
b_1	0.194962	0.115276	1.691252	0.0951
b_2	0.292812	0.107226	2.730785	0.0079
b_3	0.472429	0.107081	4.411883	0.0000
c_0	1.396060	0.620538	2.249756	0.0275
c_1	0.263248	0.597516	0.440571	0.6608
θ	-0.664555	0.115173	-5.770059	0.0000
	R-squared	0.411896		
	F-statistic	8.404545		
	Prob(F-statistic)	0.000001		

As shown in table 3.2 the error correction model is valid. Furthermore, the coefficient of the model is negative, significant and between zero and one, therefore error correction mechanism works in this system.

Furthermore, we examine the stability of the long-run coefficients together with the short-run dynamics by applying the cumulative sum (CUSUM) and cumulative sum squares (CUSUMSQ). The tests are applied to the residuals of both the long-run and the short-run models.

Specifically, the CUSUM test makes use of the cumulative sum of recursive residuals based on the first set of n observations and is updated recursively and plotted against break points. If the plot of CUSUM statistics stays within the critical bounds of 5% significance level [represented by a pair of straight lines drawn at the 5% level of significance whose equations are given in Brown, Durbin, and Evans (1975)], the null hypothesis that all coefficients in the error correction model are stable cannot be rejected. If either of the lines is crossed, the null hypothesis of coefficient constancy can be rejected at the 5% level of significance. A similar procedure is used to carry out the CUSUMSQ test, which is based on the squared recursive residuals.

Finally, we have examined the stability of the long-run coefficients together with the short-run movements for the equations. For the test, we have applied cumulative sum (CUSUM) and cumulative sum squares (CUSUMSQ) tests proposed by Durbin, Brown and Evans (1975). This same procedure has been utilized by Bahmani-Oskooee and Chi Wing Ng (2002) and Rehman and Afzal (2003) to test the stability of the long-run coefficients. The tests have been applied to the residuals of the ECM model.

Figure. 1: Plots of CUSUM and CUSUMQ statistics for coefficients Stability in ARDL model

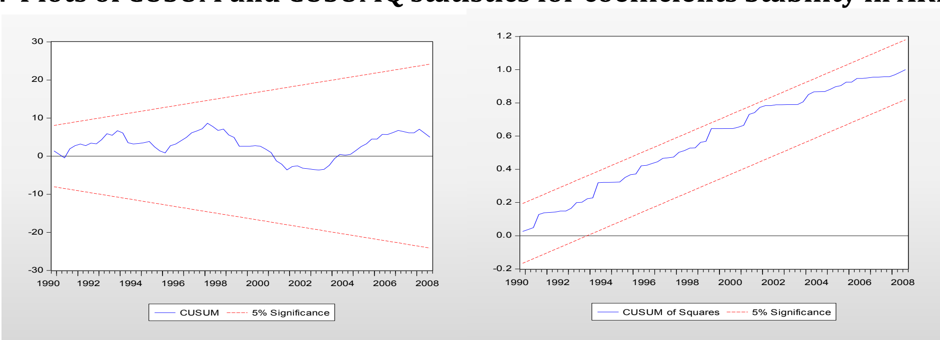
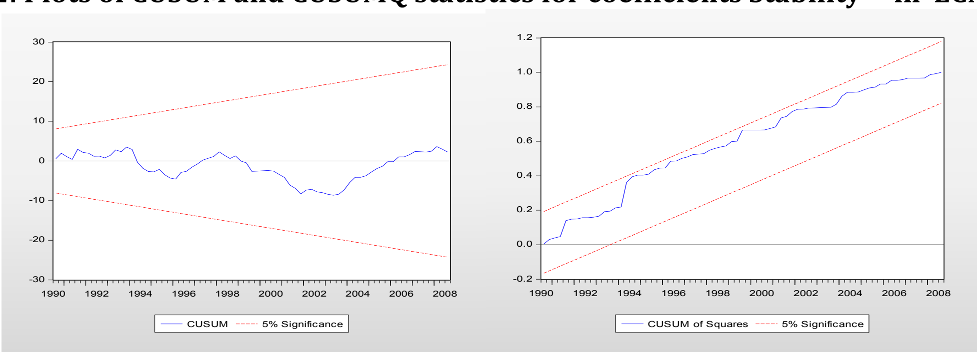


Figure 2: Plots of CUSUM and CUSUMQ statistics for coefficients Stability in ECM model



RESULT

In our estimation, we have found that long run relation between variables is negative and international conflict negatively affects growth at long-run. Therefore any increases in conflict index negatively would be reflected on growth rate. So decreasing conflict index should lead us forward economic growth in long run. By analyzing of short run dynamics, we can show that error correction model is fitted to our model and any long run shocks should be melt down in short time periods.

As expected, our study has shown the negative effect of conflicts on economic activities. Also we have found that there is a symmetric behavior in this relation. Then as international conflicts would be increased, economic activities should be decreased and decrease of conflicts has positive effects on economic activities respectively. Our study has rejected any asymmetries about conflict effects.

References

Antonakis, Nicholas (1997). Defence Spending and Growth in Greece: A Comment and Further Empirical Evidence. Applied Economics Letters 4, 651-5. DOI: 10.1080/758533294.

Bahmani-Oskooee, M., & Chi Wing Ng, R. (2002). Long-Run Demand for Money in Hong Kong: An Application of the ARDL Model. International Journal of Business and Economics, 1(2), 147–155.

Balassa B. (1986). Policy responses to exogenous shocks in developing countries, American Economic Review, 1986 (5), 75-78. DOI: 10.1007/978-1-349-10588-5_2.

Balke, N. S., & Fomby, T. B. (1997). Threshold Cointegration. International Economic Review, 38(3), 627–645. http://doi.org/10.2307/2527284.

Banerjee, A., Dolado, J., & Mestre, R. (1998). Error-correction mechanism tests for cointegration in a single-equation framework. Journal of Time Series Analysis, 19 (3), 267–283. http://doi.org/10.1111/1467-9892.00091.

Coe D.T. & E. Helpman (1995). International R&D spillovers, NBER Working Paper, No. 4444.

Deger, S. (1986). Economic development and defense expenditures, Economic Development and Cultural Change. 35: 179–196. doi::10.1177/0022002795039002004.

Dollar D. (1992). Outward-oriented developing economies really do grow more rapidly: Evidence from 95 LDCs, 1976-1985, Economic Development and Cultural Change, 1992 (40) 523-544. DOI: 10.1086/451959.

Durbin, J., Brown, R., & Evans, J. (1975). Techniques for testing the constancy of regression relationships over time. Journal of the Royal Statistical Society, 37(2), 149–192. http://doi.org/10.2307/2984889.

Frederiksen, P.C., Looney, R.E., (1982). Defense expenditures and economic growth in developing countries: some further empirical evidence. Journal of Economic Development 7, 113–126.

Granger C.W.J., Yoon G. (2002). Hidden Cointegration, Economic Working Paper Series, No. 539384, Department of Economics, University of California at San Diego.

International Country Risk Guide,

International Monetary Fund (…..),International Financial Statistics

Kleinberg, Katja & Benjamin Fordham (2013). The Domestic Politics of Trade and Conflicts, International Studies Quarterly, 57, 605-619. DOI: 10.1111/isqu.12016.

Luksemburg, Rosa (1913). The Accumulation of Capital, London, Routledge and Kegan Paul ltd.

Lumsdaine, R. L., & Papell, D. H. (1997). Multiple Trend Breaks and the Unit-Root Hypothesis. Review of Economics and Statistics, 79(2), 212–218. http://doi.org/10.1162/003465397556791.

Narayan, P. K. (2005). The saving and investment nexus for China: evidence from cointegration tests. Applied Economics, 37(17), 1979–1990. http://doi.org/10.1080/00036840500278103.

Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. Journal of Applied Econometrics, 16(3), 289–326. http://doi.org/10.1002/jae.616

Ram, R., (1995). Defense Expenditure and Economic Growth. In: Hartley, K., Sandler, T. (Eds.), Handbook of Defense Economics. Elsevier, pp. 251–274

Rasler, K. & Thompson, W. R. (1998). Defense Burdens, Capital Formation, and Economic Growth, Journal of Conflict Resolution. 32: 61–86. doi::10.1177/0022002788032001003.

Rehman, H. U., & Afzal, M. (2003). The Black Market Exchange Rate and Demand for Money in Pakistan: A cointegration analysis Pakistan Economic and Social Review, 41(1), 13–28. DOI: 10.1016/j.ecosys.2006.04.001.

Sachs J.D. & A. Warner. (1995). Economic reform and process of global integration, Brookings Papers on Economic Activity, 26(1), 1-118.

Saggi K. (2000). Trade, foreign direct investment, and international technology transfer: A survey, World Bank Policy Research Working Papers, No. 2349.

Schorderet, Y. (2002). A Nonlinear Generalization of Cointegration : A Note on Hidden Cointegration (No. 2002.03). Genève. Retrieved from http://www.unige.ch/ses/metri/

Schorderet, Y. (2003). Asymmetric cointegration. Universite de Geneve, Faculte des sciences eqconomiques et sociales, Departement d'econometrie. Working Paper. (No. 2003.01).

Shin, Y., Yu, B., & Greenwood-nimmo, M. (2014). Modelling Asymmetric Cointegration and Dynamic Multipliers in a Nonlinear ARDL Framework. In R. C. Sickles and W. C. Horrace (Eds.), Festschrift in Honor of Peter Schmidt Econometric Methods and Applications (pp. 281–314). http://doi.org/10.1007/978-1-4899-8008-3.

Smith, R. (1980). Military Expenditure and Investment in OECD Countries, 1954–1973, Journal of Comparative Economics. 4: 19–32. DOI 10.1515/peps-2014-0031

Zivot, E., & Andrews, D. W. K. (1992). Further Evidence on the Great Crash, the Oil-Price Shock, and the Unit-Root Hypothesis. Journal of Business and Economic Statistics, 10(3), 251–270. http://doi.org/10.1198/073500102753410372.