International Research Journal of Finance and Economics
ISSN 1450-2887 Issue 179 June, 2020
http://www.internationalresearchjournaloffinanceandeconomics.com

Syndicated Loans and Economic growth: Empirical Evidence from G7 countries

Mohammed Kalloub
Corresponding Author, Ph.D. candidate- Public Finance Department
Ankara Yildirim Beyazit University, Ankara, Turkey
E-mail: mohmd.kalloub@gmail.com
Tel: +90-506-1741242

Ahmed Musabeh
Ph.D. Finance and Banking, Kadir Has University, Istanbul, Turkey
E-mail: ahmedmusabeh88@gmail.com
Tel: +90-553-7448335

Abstract

This paper examines the impact of syndicated loans on economic growth in G7 countries (Canada, France, Italy, Germany, Japan, United Kingdom, and the USA) over the period between 2000 to 2017. Utilizing a panel data analysis along with several pre-tests to assure the validity of data, these tests involve multicollinearity test, stationary test, Hausman test, heteroscedasticity test, and cross-sectional dependence test. The main findings indicate that the growth of syndicated loans has positively affected economic growth in the G7 group. Moreover, the results came in line with previous literature regarding the effect of government expenditures, law enforcement, human capital, and financial stability on economic growth over the period in our sample. However, it is found that liberalization of trade has an adverse effect on economic growth.

Keywords: Syndicated Loans, Economic growth, Panel data analysis

1. Introduction

In the last three decades, corporations and governments were seeking a massive amount of funds either to conduct giant governmental projects or to secure a sufficient amount of funds for corporations and financial institutions. As demand became more significant for a mass amount of funds, the need for loan syndication just raised to match the accelerating finance demands. At the same time, these mass amounts of funds were significant enough to be borne by a single financial institution due to liquidity and risk limitations (Dennis & Mullineaux, 1999). During the 90s of the last century, loan syndication started to rise dramatically and tripled to more than $1600 billion from 1993 to 2003 (Gadanecz, 2004). This increase in the loan syndication market reflects the needs of both lenders and borrowers for a new method of debt financing. Syndicated loans were one of the efficient solutions as it enhances risk-sharing between lenders, support this bank ability to create new markets abroad, and form a reliable database sharing among lending parties. On the other hand, borrowers are much interested in loan syndication as they seek a high amount of funds from a trustable party who can provide enough funds with minimum probabilities for defaulting, lower interest rates as transaction costs are minimized (Corporate Finance Institute, 2020). Another reason to encourage borrowers to go for syndicated loans is that syndicating partners delegate a leader bank to monitor the credit or a specialized consultancy

firm, which in turn can give signals for both borrowers and lenders about the borrower's performance. And this offers borrowers feedback about their current and expected performance and helps them to avoid expected risks in the future (Sufi, 2007).

Debt in general and syndicated loans, in particular, gained much attention recently and became one of the leading research topics in the last years, due to their enormous growth, and their role in providing required funds for corporations. On the one hand, many studies have confirmed a growth-supporting impact of debt on economic growth. For instance, debt found to have conditional a positive impact on economic growth in a sample of 18 countries, as debt goes beyond a specific level; it may cause damage to the economy (Cecchetti et al., 2011). More precisely, it is found that non-financial private debt has a causality relationship with economic growth in 16 OECD countries over the period between 1980-2009 (Ajovin & Navarro, 2015). Moreover, private debt in Nigeria is has a significant economic growth effect between 2000 to 2014. As loan syndication by financial institutions in Nigeria have continued to support employment the industrialization policy of the government, it was concluded that loan syndication has a positive role in capital transmission (Echekoba et al., 2015). On the other hand, several economists found a limited or negative relationship between debt and economic growth, a study conducted by (Randveer el al., 2012) found that private debt obtained by households affects consumption negatively, while the overall effect of debt is limited and doesn't have a growth-supporting effect. Also, another study by Cafiso (2019) confirmed that household debt has a positive impact on economic growth, while corporate debt doesn't seem to have that effect on GDP in the USA, UK, and Germany in the period between 1980-2015.

Notwithstanding the huge research body which has been conducted to study the impact of private debt on economic growth. A few of these studies focused on syndicated loans and their macroeconomic effect, especially in developed countries, although a significant part of their private debt is composed of syndicated loans. Therefore, our study aims at covering this gap in the literature and analyze the relationship between syndicated loans and economic growth in a sample of developed countries that have mass amounts of syndicated loans. The second aim of this study is to identify other macroeconomic growth factors and their role in economic growth.

Hence, this study is divided into four main sections; it starts with a brief introduction, the second section provides a conceptual framework about syndicated loans, the third contains research methodology and importance of this study, followed by empirical results and conclusion in the fourth section.

2. Syndicated Loans

Loan syndication has grown dramatically in the last 30 years, according to Bank for International settlements BIS in 2010, loan syndication in developed countries had a rapid growth. This rapid growth in syndicated loans market can be attributed to many factors : (1) risk diversification; financial institutions prefer loan syndication for risk diversification (Dennis & Mullineaux, 1999), at the same time, bearing a loan by the single bank will increase monitoring costs and make it much challenging to supervise borrower. (2) cost reduction: as transaction, monitoring and marketing expenses are away less than individual loans (Altunbaş et al., 2007) since small loans are combined with high marketing and transaction costs because lenders try different marketing strategies to reach and convince households. However, in the case of syndicated loans, customers are few easily reachable. (3) Competitive pricing: as transaction and monitoring cost falls, the interest rate charged on a syndicated loan becomes lower and thus, increasing financial institutions to market loans with a competing price (Hale, 2007). (4) useful cooperation between financial institutions through providing critical information sharing and risk assessment between the lenders to achieve their mutual interests, which helps in creating effective communication channels between financial institutions and minimize information asymmetry and moral hazard. (5) good reputation: for both lenders and borrowers, for lenders being a part of the lending group, it gives positive signs for stakeholders, borrowers as well benefit from obtaining syndicated loans by sending signs to market of their good financial situation.

However, to obtain a syndicated loan, lenders and borrowers must pass through several steps known as syndicated loan process, which in turn includes three phases. The first phase is the Pre-Mandate phase; at this stage, both lenders and borrowers show their ability and willingness to syndicate and borrow, respectively (Godlewski, 2008). either borrowers may ask a bank or a group of banks for loan syndication, or a group of banks may have an agreement between each other to issue a syndicated loan. In the first case, as banks and other financial institutions have sufficient liquidity, they would offer finance for big corporations and government in the shape of a syndicated loan. In the second case, fund seekers may ask financial institutions or even one financial institution for loan syndication, which in turn starts to gather lenders for syndicating a loan. The second phase is the post-mandate, where the lender and issuer of the loan sign the terms of the loan and agrees on duties, and other conditions, all of the terms mentioned above are combined in one document called the letter of commitment (Godlewski, 2008). However, the third phase is the loan management supervision and includes; delegating management to the lead bank or an external agent, the lead bank will act as an intermediary between the syndicating group and the borrower, rather than acting as a party of the contract and will be responsible for monitoring the loan's status and borrower's commitment, in addition to all issues would be related to the loan. In addition to this, the agent or the lead bank is delegated to receive payments, monitor, and enforce contract conditions on behalf of other lenders. Nevertheless, entering this sector either as a lender or borrower has some requirements and to fulfill, starting from size, as lending financial institutions prefer financing big firms; generally, the market of syndicated loans is designed for big corporations who have the ability to bear interests and make repayments on time. Moreover, many legal aspects have to be met by both parties, such as the characteristics of the lead bank (varies from country to another) and limits on the size of the loan compared to capital.

3. Data and Methodology

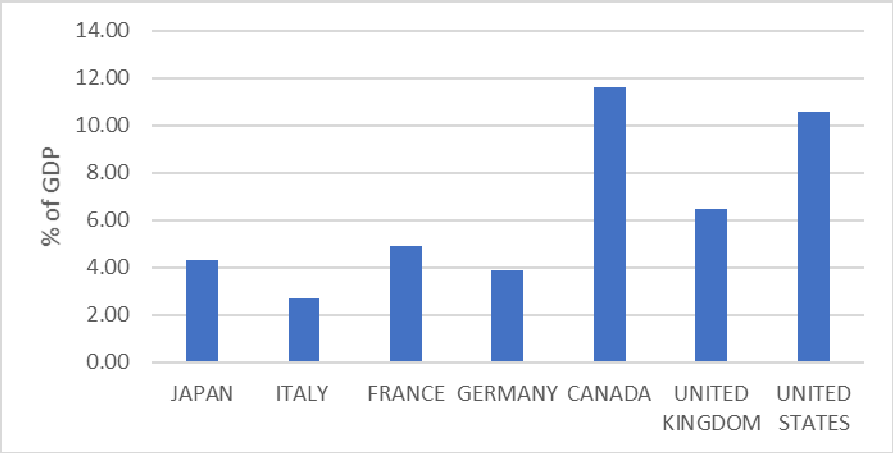
This study tries to examine the relationship between syndicated loan volume and economic growth using a set of macroeconomic variables to indicate the determinants of economic growth in G7 countries in general and to check whether there is an impact of syndicated loans volume particularly on growth. This study utilizes panel data analysis, and to ensure the validity of the results, several econometrics tests are implemented. These tests include Multicollinearity test, Stationary test, Hausman test, Heteroscedasticity test, and Cross-sectional dependence test. However, to conduct the analysis, the study employed several variables, these variables contain three categories of indicators; the first on is the dependent variable represented by real GDP. And the second category contains the main independent variable, which is syndicated loan volume. And the third category is control variables, such as government expenditures, inflation rate, human capital, and net FDI trade openness, Z score, and law enforcement. Further information about the variables are provided in the following section.

The importance of this study comes from several reasons; firstly, there is a severe lack in the empirical literature with regard to syndicated loans' effect on economic growth. Thus, the authors believe that this topic deserves more research attention, and therefore, this study empirically analyses the impact of syndicated loans on economic growth. Secondly, most of the previous studies made no separation between different types of debt, which assessed the effect of gross debt on growth. Nowadays, due to the dramatic increase in syndicated loans volume around the world, we decided to disaggregate debt types and focus on syndicated loans only as a form for corporate finance, which in turn affects investments directly. The third and the most important potential of this study is opening doors for further research ideas about syndicated loans, as it empirically sheds light on this topic.

The study employs a panel data regression on a sample of G7 countries (Canada, France, Italy, Germany, Japan, UK, and the USA) over the period 2000-2017. This period has witnessed an enormous increase in the volume of syndicated loans in G7 countries. However, the reasons stand

behind our selection of the sample is the considerable volume of syndicated loans in these countries compared to other counterparts, it approximately forms 6 % of GDP in the G7 group, this indicates the significance of syndicated loans in the sample countries as Figure 3.1 shows

Figure 3.1: Average syndicated loans volume %GDP (2010-2017)



Source: Authors calculation based on World bank data.2019

3.1. Variables Selection and Description

This study used a balanced panel of seven developed countries (G7), while the maximum available data is annual for the period 2000-2017. However, the chosen variables were based on the previous work done before, which is also suitable for this study; variables are summarized as follows.

Dependent Variable

Economic growth: many variables have been used to measure economic growth, for instance, real GDP, nominal GDP, and GDP per capita. This study employs natural logarithm for real GDP (obtained from World Banka data) as an indicator of economic growth. This choice is attributed to the higher accuracy of this indicator in measuring the real growth since it is adjusted to inflation. And it gives a pure measurement for overall economic growth.

Independent Variables

The following table summarizes the independent variable and their supporting literature, besides their source and expected sign.

Table 3.1: Summary of variables definition, sources, and supporting literature

Variable	Description	Source	Supporting literature	sign
LnSLV	The total amount of syndicated loans in a specific country	WB, FinDebt	(Stulz 2000), (Echekoba and Victor 2015) (Demirgüç-Kunt and Kunt 1996)	+
LnGovEx	The natural logaithim of Total expenditure of the central government.	WB	(Irmen and Kuehnel 2009) (Arpaia and Turrini 2012) (Bose, Haque and Osborn 2007)	- +
Tradeop	Sum of export plus import over GDP	WB	(Yucel 2009) (Yanikkaya 2003) (Awokuse 2011) (Menyah, Nazlioglu and Rufael 2014)	+ -
LNNFD	The natural logaritam of net inward FDI	WB	(Wang 2009) (Li and Liu 2005) (Karimi and Zulkornain 2009)	+

Bank Z-Score	It captures the probability of default of a country's banking system. Z-score compares the buffer of a country's banking system (capitalization and returns) with the volatility of those returns.	Bankscope	(Dhal, Kumar and Ansari 2011)	+
Inflation	The annual percentage change in consumer price index (CPI)	IMF	(Dhal, Kumar and Ansari 2011) (Creel, Hubert and Labondance 2015)	-
Human capital	Mean years of schooling (years)	UNDP	(Hanushek 2013) (Baldacci, et al. 2008)	+
Law	Average level of law and order. The variable ranges from 0 to 12 with higher values indicating better law and order.	Worldwide Governance Indictors	(Levine 1999) (Ma 2011)	+

3.2. Pre-Estimation Tests

Multicollinearity Test

To examine the multicollinearity among the independent variables, this study uses the Variance Inflation Factor (VIF)[1] test. Based on the results of this test, Table 3.2 shows that none of the variables are highly correlated to others, where the mean Variance Inflation Factor (VIF) is 2.92.

Table 3.2: Partial correlation VIF test

Variable	VIF	1/VIF
LNSLV	5.65	0.177063
Human	4.65	0.214990
Tradop	4.10	0.243741
Law	3.75	0.266742
Govexp	2.23	0.447633
bankz	1.91	0.523087
GFCF	1.49	0.671280
infla	1.32	0.757873
LnNFDI	1.16	0.859937
Mean VIF 2.92		

Stationary Test: This study uses the Levin-Lin-Chu test (LLC)[2] to examine stationary. Table 3.3 shows that the series is stationary at level.

Table 3.3: Panel Unit Root Tests (Levels)

Levin-Lin-Chu unit-root test	P-Value
LNRGDP	0.0019
LNSLV	0.0000
LNGovExp	0.0009
LnNFDI	0.0006
GFCF	0.0002
Tradop	0.0009
Infla	0.0000
bankz	0.0011
Law	0.0049
Human	0.0020

[1] when VIF is higher than 10, which means that there is a high correlation between independent variables. (Petrini et al, 2012).

[2] This test assumes homogeneity in the dynamics of the autoregressive coefficients for all cross-section data (series) (Beck and Katz,2011

Hausman Specification Test

This test uses to distinguish between the random-effect model and a fixed-effect model. According to the results of this test, the value of the p-value is high (Prob>chi2 = 0.000). Thus, we reject the null hypothesis, which means that the Fixed –Effect model is an appropriate model to explain the outcomes.

Heteroscedasticity Test

This test is performed to detect heteroscedasticity. The test results for the dependent variable shows the none existence of heteroscedasticity with Chi2 (1) = 0.392 and P-value = 0.531.

Cross-Sectional Dependence Test

This test is used to check whether the residuals are correlated across variables, where the existence of cross-sectional dependence can generate bias in the results. According to Pesaran's test, the p-value is 0.0020, and this amount is smaller than 0.05. Therefore, we reject a null hypothesis, which means that there is cross-sectional dependence. Based on if there is cross-sectional dependence, to deal with this problem, Hoechle (2007) suggested to use the command Xtscc, and this command produced Driscoll and Kraay (1998) standard errors for coefficients estimated by pooled OLS and fixed-effects within regression.

4. Findings & Conclusion

The aim of this study is to test the effect of syndicated loans as a form of corporate finance mean on the economic growth of G7 countries, in order to get reliable results and to make sure of data validity we have run several pre-analysis tests; the first was correlation test using Variance Inflation Factor VIF. However, according to Table 3.2, the mean VIF equals 2.92 which means that there is no significant correlation between variables. The next step represents testing data stationarity by implementing unit root test, among the available tests we have chosen the Levin-Lin-Chu LLC test since it is the most suitable test for panel data, the result is available at Table 3.3 and shows that all variables are stationary at level. After we tested data characteristics and made sure that our data set is valid for analysis, we obtained model specification test to identify which model is more suitable for our regression model, the results of Hausman test was (P-value 0.000), which came in favor of Fixed effect model over Random effect.

However, to test the reliability of the model, in the next step, we first examined the model heteroscedasticity, by implementing Breusch-Pagan test, which in turn indicates no heteroscedasticity problem in our model by showing 0.531 as a P-value for the test. Our last pre-examination test was run against cross-sectional independence, based on pesaran abs of cross-sectional independence test, the result indicates the existence of cross-sectional dependence between variables, we will overcome this problem by using the suggested xtscc command according to Hoechle (2007).

Regarding the results of the regression model, our empirical results in Table 3.4 shows a significant and positive relationship between syndicated loans volume and economic growth, as we expected, this result agrees with the majority of previous studies and stresses on the importance of syndicated loans for growth, our basic finding agrees with (Echekoba and Victor 2015) regarding the importance of syndicated loans for economic growth and reducing unemployment rates beside enhancing the industrialization process for the country. It also fits with (Ajovin and Navarro 2015) findings, as they shed light on the importance of non-financial debt for economic growth in OECD countries. Moreover, our finding agrees with (Cecchetti, Mohanty and Zampolli 2011) and (Stulz 2000) about the importance of debt for an economy

A positive and significant relationship was found between government expenditures and economic growth. Although there are many contradictions and disagreements on the role of government expenditures in past literature, our finding shows that government expenditures play a significant role in economic growth in G7 countries, this positive role is attributed for the enhanced quality of education and health, which in turn affect the quality of human capital, leading to economic

growth, this result agree with several previous, studies such as (Bose, Haque and Osborn 2007) and (Irmen and Kuehnel 2009).

Moreover, we find that financial stability has a significant positive impact on economic growth in the sample countries, confirming the general view towards financial stability and its positive impact on economy, our finding supports the previous kinds of literature and confirm the finding of (Dhal, Kumar and Ansari 2011) regarding the positive impact of financial stability on growth. We also found a positive and significant relationship between the existence of the high-quality rule of law and economic growth, since the quality of laws and rule enforcement contributes to market stability, property rights and investment it is expected to have an expansionary effect on the economy which agrees with (Levine 1999) and (Ma 2011). Also, as expected, the study found a positive and significant correlation between human capital and economic growth; this result agrees with the majority of previous studies such as (Baldacci et al. 2008) and (Hanushek 2013). However, we found a significant negative relationship between trade openness level on economic growth, and this result could be explained in the light of (Menyah, Nazlioglu and Rufael 2014) rejection for trade-led growth hypotheses, assuming the effect of other factors rather than trade.

To sum up, in our study, the paper shed light theoretically and empirically on a modern topic in the economics world; syndicated loans have become one of the main corporate finance tools due to its magnificent advantages for both lenders and borrowers. Nevertheless, the expansion in the syndicated loans market in G7 countries brought advantages financial sector and accelerated investments, which have been reflected in their economic growth. However, we found a growth-enhancing effect for syndicated loans, government expenditures, financial stability, and law enforcement in G7 countries, while the relationship between trade openness and economic growth were found to be inverse.

References

[1] Ajovin, Miguel, and Marcos Navarro. 2015. "Granger causality between debt and growth: Evidence from OECD countries." *International Review of Economics and Finance* - Volume 35 66-77.

[2] Altunbaş, Yener, Blaise Gadanecz, and Alper Kara. 2007. "The evolution of syndicated loan markets." *The Service Industries Journal* 689-707.

[3] Arpaia, Alfonso, and Alessandro Turrini. 2012. "Government Expenditure and Economic Growth in the EU: Long-Run Tendencies and Short-Term Adjustment." SSRN 46.

[4] Awokuse, Titus O. 2011. "Trade openness and economic growth: is growth export-led or import-led?" *Journal of Applied Economics* 161-173.

[5] Baldacci, Emanuele, Benedict Clements, Sanjeev Gupta, and Qiang Cui. 2008. "Social Spending, Human Capital, and Growth in Developing Countries." *World Development Journal*, Volume 36, Issue 8 1317-1341.

[6] Beck, Nathaniel, and Jonathan N. Katz. "Modeling dynamics in time-series–cross-section political economy data." *Annual Review of Political Science* 14 (2011): 331-352.

[7] Bose, NILOY, M. EMRANUL Haque, and DENISE R. Osborn. 2007. "Public Expenditure And Economic Growth: A Disaggregated Analysis For Developing Countries." *The Manchester School*, Volume 75, issue 5 533-556.

[8] Cafiso, Gianluca. 2019. "GDP Growth through Private Debt: The Effect of Monetary Shocks." *CESifo Economic Studies*, Volume 65, Issue 2 236–253.

[9] Cecchetti, Stephen G., Madhusudan S. Mohanty, and Fabrizio Zampolli. 2011. The Real Effects of Debt. Basel: Bank For International Settlements.

[10] Corporate Finance Institute. 2020. What is a Syndicated Loan? April 15. https://corporatefinanceinstitute.com/resources/knowledge/finance/syndicated-loan/.

[11] Creel, Jérôme, Paul Hubert, and Fabien Labondance. 2015. "Financial stability and economic performance." *Economic Modelling Journal Volume* 48 25-40.

[12] Demirgüç-Kunt, Asli, and Asli Demirgüç Kunt. 1996. "Stock Markets, Corporate Finance, and Economic Growth: An Overview." *The World Bank Economic Review* ,Vol 10 223-239.

[13] Dennis, Steven A., and Donald J. Mullineaux. 1999. "Syndicated Loans." SSRN 37.

[14] Dhal, Sarat, Purnendu Kumar, and Jugnu Ansari. 2011. "Financial Stability, Economic Growth, Inflation and Monetary Policy Linkages in India: An Empirical Reflection." *Reserve Bank of India Occasional Papers*,Vol. 32, No. 3,.

[15] Echekoba, and Okonkwo Ikeotuonye Victor. 2015. "The Impact of Loan Syndication in the Growth of Nigerian." Scholars Journal of Economics, Business and Management 786-792.

[16] Gadanecz, Blaise. 2004. The syndicated loan market: structure, development and implications. Basel: *Bank for International Settlements*.

[17] Godlewski, Christophe. 2008. "What Drives the Arrangement Timetable of Bank Loan Syndication ?" In The handbook of portfolio management , 223-246. McGraw-Hill.

[18] Hale, Galina. 2007. "Bonds or Loans? The Effect of Macroeconomic Fundamentals." The *Economic Journal, Volume* 117, Issue 516 196–215.

[19] Hanushek, A. 2013. "Economic growth in developing countries: The role of human capital." *Economics of Education Review*, vol 37 204-212.

[20] Hoechle, Daniel. "Robust standard errors for panel regressions with cross-sectional dependence." *The stata journal* 7, no. 3 (2007): 281-312.

[21] Irmen, Andreas, and Johanna Kuehnel. 2009. "Productive government expenditure and economic growth." *Journal of Economic Serveys* ,Volume23, Issue4 692-733.

[22] Karimi, and Zulkornain. 2009. FDI and Economic Growth in Malaysia. Munich: *Munich Personal RePEc Archive.*

[23] Levine, Ross. 1999. "Law, Finance, and Economic Growth." *Journal of Financial Intermediation* 8–35.

[24] Li, Xiaoying, and Xiaming Liu. 2005. "Foreign Direct Investment and Economic Growth: An Increasingly Endogenous Relationship." *World Development Journal*, Volume 33, Issue 3 393-407.

[25] Ma, Tay-Cheng. 2011. "THE EFFECT OF COMPETITION LAW ENFORCEMENT ON ECONOMIC GROWTH." *Journal of Competition Law & Economics*, Volume 7, Issue 2 301–334.

[26] Menyah, Kojo, Saban Nazlioglu, and YemaneWolde- Rufael. 2014. "Financial development, trade openness and economic growth in African countries: New insights from a panel causality approach." Economic Modelling, Volume 37 386-394.

[27] Randveer, Martti, Lenno Uuskula, and Liina Kulu. 2012. The impact of private debt on economic growth. *Bank of Estonia working papers.*

[28] Torres-Reyna, O. (2007). Linear regression using Stata. Data and statistical services, Princeton University. Retrieved from http://dss. princeton. edu/training/, accessed on, 28(07), 2015.

[29] Stulz, René M. 2000. "Financial Structure, Corporate Finance and Economic Growth." *Internaional Review of Finance*, Vol 1 11-38.

[30] Sufi, Amir. 2007. "Information Asymmetry and Financing Arrangements: Evidence from Syndicated Loans." THE JOURNAL OF FINANCE VOL. LXII, NO. 2 629-668.

[31] Wang, Miao. 2009. "Manufacturing FDI and economic growth: evidence from Asian economies." *Journal of Applied Economics*, Volume 41, Issue 8 991-1002.

[32] World Bank Global.2019 Syndicated Loans and Bonds Database (FinDebt). https://datacatalog.worldbank.org/syndicated-loan-issuance-volume-gdp

[33] Yanikkaya, Halit. 2003. "Trade openness and economic growth: a cross-country empirical investigation." *Journal of Development Economics,Volume* 72, Issue 1 57-89.

[34] Yucel, Fatih. 2009. "Causal Relationships between Financial Development, Trade Openness and Economic Growth: The Case of Turkey ." *Journal of Social Sciences* 5(1) 33-42.