FINANCIAL DEEPING AND ECONOMIC GROWTH RELATION: THE TURKISH EXPERIENCE

Hilal YILDIZ **Seda ATASAYGIN**

Abstract

The relationship between the financial deeping and economic growth has been debated extensively in the literature. The causal relationship of finance-growth nexus has important policy implications for the economy.

The study examines the relationship between financial deepening and economic growth in Turkish economy for the period from 1984:01-2014:12. The industry production index is used a representative of economic growth. The variable of stock index of Istanbul, bonds and stocks are used as financial development indicators. We conclude that there is cointegration relation among variables. According our results, the demand-pulling hypothesis is valid for Turkish economy. We find that there is evidence that the growth of economy in recent years has substituted for financial development.

The work is divided into five sections. Section one is the introduction, section two deals with the theoricalliterature reviewof relationship between economic growth and financial development, section three discusses the empiricalliterature. Section four analyzes the data and discusses the findings under the empirical results while section five discusses conclusion.

Key words: Growth, financial deeping, causality, cointegration, Turkey
JEL classifications: C22, F40, O52

I. INTRODUCTION

The increase of financial assets in financial system and broadly using of them is called as "financial development" (Erim,2005). Also it is identified as the changing of the financial system in terms of structure and size. It is important to note that if the increase in the supply of financial assets is small, it means that financial deepening in the economy is most likely to be shallow; but if the ratio is big, it means that financial deepening is likely to be high. Developed economies are characterized by high financial deepening, meaning that the financial sector in such countries has had significant growth and improvement, which has, in turn, led to the growth and development of the entire economy.

Financial deepening is a term used often by economic development experts. It refers to the increased provision of financial services with a wider choice of services geared to all levels of society. It also refers to the macro effects of financial deepening on the larger economy. It means that the size of financial assets increases more than size of non financial assets in the economy (Shaw,1973).

There are many indicators for estimate of financial development. There is no any unique parameter in measure of financial development. There are five indicator such as the indicator of quantity, structural, the price of financial, cost of change and product range (Darıcı,2009).

The main indicators of financial development are summarized at Table 1.

Table 1: The Main Indicators of Financial Deeping

Author	Implication of the Study	Empirical Results
King, Levine (1993)	Liquid responsibilities/GDP, The private sector credits/GDP The private sector credits/ The total domestic credits	King, Levine (1993)
Kar, Pentecost (2000)	M2/GDP, Bank deposits/GDP, The private sector credits/GDP t içi krediler, domestic credicts/GDP	Kar, Pentecost (2000)
Al-Yousif (2002)	M1/GDP and M2/GDP	Al-Yousif (2002)
Calderon, Liu(2003)	M2 /GDP , The private sector credits	Calderon, Liu(2003)
Aslan, Küçükaksoy (2006)	The private sector credits/GDP	Aslan, Küçükaksoy (2006)
Liang, Teng (2006)	Real interest rate	Liang, Teng (2006)
Ang (2008)	The private sector credits/GDP	Ang (2008)
Altunç (2008)	M2/GDP, The private sector credits/GDP, Total Financial assets/GDP, Menkul Kıymetler/GSYH	Altunç (2008)

Altıntaş, Ayrıçay (2010)	M2/GDP	Altıntaş, Ayrıçay (2010)
Kar, Nazoğlu, Ağır (2010)	M2, The private sector credits Domestic credits/GDP	Kar, Nazoğlu, Ağır (2010)

2. The Relationship Between Economic Growth and Financial Development

The relationship between the financial development and economic growth has been debated extensively in the literature. The causal relationship of finance-growth nexus has important policy implications for the economy. Walter Bagehot made the first attempt at evaluating the relationship between financial and economic development in 1873 (Becsi and Wang, 1997:50).

The original debate on the relationship bfinancial development and economic growth can be traced to Schumpeter, argues that economic growth is effected by financial system. The important question is that in the relationship between financial development and economic growth, which one leads in the dynamic process of economic development?

Most of the studies has focused on the affect of financial system to economic growth in the literature. The direction of the relationship between financial deeping and economic growth is the crucial guestion. According the general approach, the affect of financial system on economin growth is passive. But the modern approach is claim that the affect of finacial system is active on economic growth (Hermes and Lensink,1997:7).

There are different wiews in the literature. The first hypothesis is that economic growth causes to financial development. The other mainly hypothesis arques that economic growth is caused by financial system.

2.1. The Demand-Pulling Hypothesis

It was introduced by Robinson in 1952. In this hypothesis, the main thinking is that “the financial development follows to economic growth”. It argues for a reverse causal ordering from real economic growth to financial development that is aconsequence of economic growth, as economic growthincreases demand for financial instruments. The growth of real economy causes the increase of labor productivity and technological development. As a result of expansion of real economy, the economy needs to more financial intermediaries. In that

concept, the financial system plays a passive rol in economic growth process (Calderon and Liu, 2003:326).

2.2. The Supply Leading Hypothesis

This hypothesis assumed that the direction of causation runs from financial development to economic development, emphasized the role played by financial liberalization in increasing savings and investment. In this concept, economic growth can be the combined role of investment and financial deepening. The effective financial market contributes to invesment and economic growth (Rioja and Valev, 2004:127).

The affect of financial development on economic growth is occured two mainly way:

- The development of financial system leads to the increase of efficiency of capital flows.
- It leads to increase of saving and invesment (Gregorro and Guidotti,1995:5).

The new tools which arised from financial system leads to increase of demand in real sector. The determinators of real sector are caused by financial activities.

The direction of relationship between economic growth and financial deeping is from financial aystem to real economy. The productivity and value added are created by via saving, invesment, the minimize of risks and decreasing of costs. The financial development leads to accomodation of saving. The increase of saving creates new invesment and increasing of invesment causes economic growth.

3. The Review of Related Literature

The literature, related the relationship between financial deeping and economic growth is summarized at Table 2 and the Turkey empirical experinces are summarized at Table 3. Most of them indicate that there is possitive relation between variables. But the direction of relation is mixed. Some of them found that the demand-pulling hypothesis is valid, most of them reached to opposite hypothesis.

Table 2: Literature Survey

Author	Implication of the Study	Empirical Results
King ,Levine (1993)	Panel data,	Financial

	(1960–1980) 80 countries	growth→economic growth
Gregorio,Guidotti (1995)	Panel data (1960-1985) 100 countries, (1950-1985) 12 Latin American countries	Financial growth→economic growth (positively)
Levine,Zervos(1996)	Panel data (1976-1993) 24 countries	Stock market growth→economic growth (positively)
Jayaratne, Strahan (1996)	Panel data (1972-1992) 50 countries	Bank credits→economic growth (positively)
Arestis, Demetriades (1998)	Germany and USA	The volatility of stock market→economic growth (negatively)
Rousseau, Wachtel (1998)	USA, Canada, Norvey, England, Sweden	Financial growth→economic growth (positively)
Rajan , Zingales (1998)	(1980-1990)	No any relation
Neusser, Kugler (1998)	OECD countries	Financial growth is important but not crucial reason for economic growth
Darrot (1999)	Saudi Arabia,Turkey, United Arab Emirates	Financial growth→economic growth (positively)
Demirgüç, Kunt, Maksimoviç (1998)	Panel data 30 countries	Efficient stock market→economic growth of firms (positively)
Rousseau (1999)	(1880-1913) Japan	Financial growth→economic growth (positively)
Levine, Loayza, Beck (2000)	(1962-1989) 49 developing countries	Financial growth→economic growth (positively)
Kang ,Sawada (2000)	20 countries	Financial growth→economic growth (positively)
Arestis, Demetriades, Luintel (2001)	5 developed countries	Banks and capital market→economic growth (positively)
Arestis (2002)	6 developing countries	No any relation
Al-Yousif (2002)	(1970-1999) 30 developing countries	Financial growth↔economic growth
Shan, Morris(2002)	(1985-1998) OECD countries, Asia counties, South	No any relation

	Korea, China	
Müslümov, Aras (2002)	(1982-2000) OECD countries	Financial growth→economic growth (positively)
Calderon, Liu (2002)	(1960-1994) 109 countries	Financial growth→economic growth (positively
Thangavelu (2004)	(1960-1999) Australia	Financial growth→economic growth (positively
Ghirmay (2004)	13 Sub- Saharan African countries	Financial growth→economic growth (positively) for 8 countries Financial growth↔economic growth for 6 countries
Rioja ,Valev (2004)	74 counries	Financial growth→economic growth for middle and upper class countries in terms of financial development
Shan (2005)	10 OECD countries and China	Financial growth→economic growth (positively)
Chang , Caudill (2005)	(1980-2000) Taiwan	Financial growth→economic growth (positively)
Shan , Jianhong (2006)	(1980-2000) China	Financial growth↔economic growth
Artan (2007)	Panel data 79 countries	Financial growth→economic growth (negatively) for under developed countries
Yay,Oktayer (2009)	(1975-2006) 21 developing and 16 developed countries	Banks and stock market growth→economic growth (positively)

Table 3: Literature Survey of Turkey Experience

Author	**The Term**	**Method**	**Empirical Results**

Mercan , Peker (2013)	1992-2010	ARDL	Financial growth→economic growth
Demirhan, Aydemir, Inkaya (2011)	1987- 2006	VECM	Financial growth↔economic growth
Özcan , Arı (2011)	1998- 2009	VAR, Granger Causality	Economic growth→financial growth
Akkay (2010)	1989-2010	Causality	Financial growth↔economic growth for (1989-2001) Economic growth→financial growth for (2001-2010)
Altıntaş , Ayrıçay (2010)	1987-2007	Cointegration The Bounds test	Financial growth→economic growth
Yücel (2009)	1997-2007	VAR	Capital market growth→economic growth (positively)
Ünal (2009)	1995-2008	VECM	Banks credits→economic growth
Coşkun , Temizel Taylan (2009)	1998-2008	Cointegration Granger Causality	Positive relation for long term
Nazlıoğlu, Ege, Bayraktaoğlu (2009)	1987-2007	ARDL Dolado Lütkepohl Causality	Financial growth↔economic growth
Altunç (2008)	1970-2006	Cointegration Granger Causality	The causality relation for M2/GDP and economic growth
Öztürk (2008)	1975-2005	Granger Causality	Economic growth→financial growth
Açıkalan, Aktaş, Unal (2008)	1991-2006	VECM	Stock market→economic growth
Kaplan (2008)	1987-2006	VAR	Real stock market→economic growth
Karagöz , Armutlu (2007)	1988-2006	Granger Causality Sims Test	Economic growth→bond market.

Yapraklı (2007)	1988-2000	VAR Granger Causality	Financial openness↔economic growth
Aslan, Koralp (2006)	1987-2004	Johansen Cointegration Granger Causality	There is a relation in long term
Aslan , Küçükalsoy (2006)	1970-2004	VAR Granger Causality	Financial growth→economic growth
Yılmaz, Kaya (2006)	1986-2004	VAR Granger Causality	Economic growth→financial growth
Onur (2005)	1980-2002	Granger Causality Otoregressive Model	Financial growth→economic growth
Gökdeniz (2003)	1989-2002	OLS Regression	M2→economic growth
Unalmış (2002)	1970-2001	VECM Causality	Financial growth→economic growth in short term
Yılmaz , Kayakara (2002)	1960-2001	VECM Causality	Financial growth→economic growth
Kar ,Pentecost (2000)	1963-1995	Cointegration VECM	Financial growth→economic growth (very little effect)
Kargı, Terzi (1997)	1986-1996	VAR	No any relation

4.Empirical Analysis

In this study, Engle-Granger Model is being used to estimate the short-run and long-run relationship between financial deeping and economic growth in Turkey. Firstly, we discussed the data set and the details of Engle-Granger model (EGM).

4.1. Data

In our empirical analysis,we used montly data set of 1989:01-2014:12. Industry production index(IPI) is used as a Proxy to economic growth . As financial deeping indicators, we used bonds(B), stock index of Istanbul (SI),and stocks (S).The data are obtained from Central Bank of Turkish Republic.

In view of the foregoing, the functional relationship between financial development and economic growth that incorporates various proxies of financial sector development (explanatory variables) for estimation purpose is specified.

4.2. Methodological Framework

Before the analyzing relationship between economic growth and financial deeping, both dependent and independent variables are subjected to some statistical tests such as stationary test. Augmented Dickey-Fuller (ADF)(Dickey,Fuller,1979) is used to find out the stationary of any time series. This is necessary in order to ensure that the parameters are estimated using stationary time series. The essence of the ADF tests is the null hypothesis of non stationarity. To reject this, the ADF statistics must be more negative than the critical values of Dickey-Fuller table.

Why is it important to use the stationary variables in the econometrics analysis? The reason is that standard regression analysis fails whendealing with non-stationary variables, leading to spurious regressions. For example, suppose we regress two independent random walks (nonstationary) against each other, and test for a linear relationship. A large percentage of the time, we'll find high R-squared values and low p-values when using standard OLS statistics. In fact there's absolutely no relationship between the two random walks (Enders,2004).

On the other hand, if the variables are not stationary at level (I(0)), we have to take their difference form (I(1)). Using the difference form of the variables leads to lack of long term knowledge. At that point, Granger suggests the cointegration form as a technics to observe the relationship between integrated variables.

If two or more series are individually integrated but some linear combination of them has a lower order of integration, then the series are said to be cointegrated. A common example is where the individual series are first-order integrated (I(1)) but some (cointegrating) vector of coefficients exists to form a stationary linear combination of them (Charemza, Deadman 1992).

To avoid this, Engle and Granger (1987) provided a remedy. The EGM, originally suggested by Engle and Granger (1987), has received a great deal of attention in time series analysis. It gives the long-run equilibrium relationship between variables which can be modeled by the regression involving the levels of the variables.

Firstly, the regression is estimated by the OLS.

$$Y_t = \beta X_t + u_t \quad (1)$$

Where both Y and X are non stationary variables and integrated of order one (i.e.X_t~ I(1) and Y_t~I(1)). In order forY_t and X_t to be cointegrated, the necessary condition is that the estimated residuals from the equation should be stationary (i.e. u_t~ I(0)).

u_t is called as an error correction term and if it is found by stationary.

Secondly, conditional on finding cointegration between Y_t and X_t, the estimate of β from the first step long-run regression (1) may then be imposed on the following sort-run model with the remaining parameters being consistently estimated by the OLS. In other words, we retrieve the estimate of β from Eq. (1), and insert it in place of β in the error-correction term (Ct-βYt) in the following short-run equation:

$$\Delta Y_t = \alpha_1 \Delta X_t + \alpha_2 (Y-\beta X)_{t-1} + \varepsilon_t \quad (2)$$

where Δ represents first-differences and εt is the error term. Alternatively, in practice, since $C_t-\beta Y_t = u_t$, one can substitute the estimated residuals from Eq. (1) in place of the error-correction term, as the two will be identical. Note that the estimated coefficient α_2 in the short-runEq. (2) should have a negative sign and be statistically significant. Note also that, to avoid an explosive process, the coefficient should take a value between -1 and 0. According to the GRT, negative and statistically significant α_2 is a necessary condition for the variables in hand to be cointegrated. In practice, this is regarded as an convincing evidence and confirmation for the existence of cointegration found in the first step. It is also important to note that, in the second step of the EGM, there is no danger of estimating a spurious regression because of the stationarity of the variables ensured. Combinations of the two steps then provides a model incorporating both the static long-run and the dynamic short-run components (Yıldız,2013).

4.3. Empirical Results

In this section, the result of the augmented unit root test of theseries, cointegration test among variables and VECM causality test are presented in Tables are analyzed as follows. Table 4 shows that the null hypothesis of unit root isnot rejected because the test statistic is not more than thecritical values at level. The absolute values of the teststatistic of the series are greater than the critical

(absolute)values of the series at 5 percent level of significance at first difference. Thus, theseries is stationary at the first difference and at 5 % level.

Table 4: The Results of ADF Test

Variables	**Level**	**First Difference**
	ADF Tests	ADF Tests
B	-2.163056(0)	17.0496(0)*
S	-2.4521(0)	-17.2386(0)*
IPI	2.2507(13)	-3.5721(16)*
SI	-3.3978(4)	-12.3551(3)*

Table 4 presents the results of ADF statistics for the levels and first differences of the montly time series data for the period, 1989:01-2014:12. The asterisk (*) denotes rejection of the unit root hypothesis at the5% level.

As follows, Table 5,6,7 and 8 show respectively, error-correction results of variables at level, the results of VECM, the diagnostik test of VECM and wald test results of VECM which the dependent variable is stock index.

Table 5: The Results of Error-Correction Regression at Level

Dependent variable: IPI

Variable	**Coefficient**	**Prob.**
C	5.046125	0.0000
LOGP	0.245913	0.0000
LOGSI	-0.083780	0.0000
LOGB	-0.040942	0.0000
R-squared	0.847617	

Table 6: The Results of VECM

Dependent Variable: SI

Variable	Coefficient	prob
C	0.221698	0.0023
@TREND	-0.000976	0.0044

ECM(-1)	-0.390147	0.0000
DSI(-1)	-0.197776	0.0401
DSI(-2)	-0.226571	0.0176
DSI(-3)	-0.113423	0.2278
DSI(-4)	-0.132633	0.1469
DSI(5)	-0.009885	0.9106
DSI(-6)	-0.051912	0.5360
DSI(-7)	0.051029	0.4747
DSI(-8)	-0.011832	0.8384
DIPI(-1)	-0.343745	0.3206
DIPI(-2)	0.445676	0.2431
DIPI(-3)	0.193002	0.6158
DIPI(-4)	0.309574	0.4149
DIPI(-5)	-0.258014	0.4799
DIPI(-6)	0.940471	0.0125
DIPI(-7)	0.740615	0.0486
DIPI(-8)	0.290761	0.3929
DIPI(-1)	0.503764	0.0199
DS(-2)	-0.102982	0.6320
DS(-3)	0.137260	0.5198
DS(-4)	0.077800	0.7155
DS(-5)	-0.156599	0.4616
DS(-6)	-0.098068	0.6426
DS(-7)	-0.207231	0.3000
DS(-8)	-0.087514	0.6505
DB(-1)	-0.393715	0.0000
DB(-2)	0.166797	0.0152
DB(-3)	0.023339	0.7335
DB(-4)	0.056188	0.4040
DB(-5)	-0.044050	0.5145
DB(-6)	0.091826	0.1738
DB(-7)	0.090498	0.1824
DB(-8)	0.155148	0.0229

R-squared	0.507450
Durbin-Watson stat	1.991118

We need to observe cointegration relationship, the error correction term must be stationary at level. Firsly, we regressed the variables at level in which the dependent variable is IPI. Then, we checked the stationary of the error term of the regression at Engle-Yoo table. According the critical values of the table (3.47), the error correction term is stationary at 10% (Engle-Yoo, 1987,Table 2:157). Thus, we can observe the cointegration relation among variables.

According the VECM results at Table 6, the error correction mechanism (ECM)(-4.3642) works only for the SI as a dependent variable. The error correction term is statistically significant at 5% and has negative sign. This means that error correction mechanism Works. ECM is the error correction component of the model and measures the speedat which prior deviations from equilibrium are corrected.

Table 8 gives the results of wald test for VECM. According the results, in the regression which dependent variable is SI, there exist the short and long term relation among variables both of joint test and wald. All of the variables (IPI, S and B) have impact on SI which is the dependent variable. The diagnostic tests indicate that there is no any econometrics problem such as autocorrelation and heteroskedastisite in estimation result.

Table 8: The Results of Wald Test in VECM

Dependent variable: SI

Variables	Joint(with ECM (-1))	Wald
IPI	14.4052 (0.0000)	1.9968 (0.047186)
S	5.1110 (0.000002)	1.2230 (0.2856)
B	9.7921 (0.0000)	8.1021 (0.00000)

Our Turkish experience is supprted to Robinson's view. The financial market is followed by the real market. The impact of economic growth on financial market has been demonstrated like ours by Onur (2005), Kar and Pentecos (2002).

5. CONCLUSION

The objective of this study was to analyse the relationship between economic growth and financial deeping for Turkey. To establish the direction of causality among financial development and economic growth, the cointegration was employed using three alternative financial proxies, the stock index of Istanbul, bonds and stocks, were utilized.

Empirical evidence from the error correction testing approach to cointegration suggested that there existed only one long-run relationship between the alternative financial development proxies and economic growth. In order to observe the validity of demand-pulling or the supply-leading hypotheses in the case of Turkey, VECM causality tests revealed that changes in the economic growth, through the error-correction term, resulted in changes in financial deeping in the long-run, via the stock index of Istanbul .

REFERENCES

Açıkalın Sezgin, Rafet Aktaş (2008). "Relationships Between Stock Markets and Macro economic Variables an Empirical Analysis of the İstanbul Stock Exchange".Investment Management and Financial Innovations, 5(1) :8-16.

Akkay,C (2010)."Finansal Entegrasyon Sürecinde Finansal Gelişme ve Ekonomik Büyüme Arasındaki Nedenselliğin Türkiye Açısından Dönemsel Olarak Araştırılması". İstanbul Üniversitesi Sosyal Bilimler Dergisi , 2 ,55-70.

Altıntaş H, Ayrıçay Y. (2010). "Türkiye'de Finansal Gelişme ve Ekonomik Büyüme İlişkisinin Sınır Testi Yaklaşımıyla Analizi" Anadolu Üniversitesi Sosyal Bilimler Dergisi, 10(2): 71-98.

Altunç Ömer Faruk (2008). "Türkiye 'de Finansal Gelişme ve İktisadi Büyüme Arasındaki Nedenselliğin Ampirik Bir Analizi". Eskişehir Osmangazi Üniversitesi İ.İ.B.F Dergisi, 3(2),113-127.

Al-Yousif, Yousif Khalifa (2002). "Financial Development and Economic Growth: Another Look At the Evidence From Developing Countries". Review of Financial Economics, (11):131-150.

Ang, J.B (2008) "What Are The Mechanisms Linking Financial Development and Economic Growth in Malaysia?". Economic Modelling, (25), 38-53.

Arestis, Demetriades, Luintel (2001). "Financial Development and Economic Growth: The Role of Stock Markets". Journal of Money, Credit and Banking 33(1):16-41.

Arestis, Philiph (2002). "Financial Crisis in Southeast Asia: Dispelling Illusion The Minskyan Way".Cambridge Journal of Economics, 26(2),237-260.

Artan, Seyfettin (2007). "Finansal Kalkınmanın Büyümeye Etkileri: Literatür ve Uygulama". İktisat,İşletme ve Finans Dergisi, 1,70.

Arestis Philiph, Panicos Demetriades (1998). "Finance and Growth: Is Schumpeter 'Righ'?", Analise Economica, 16(30):5-21.

Aslan, Ö,H.L.Koralp (2006). "Türkiye 'de Finansal Gelişme ve Ekonomik Büyüme İlişkisi". Muğla Üniversitesi Sosyal Bilimler Enstitüsü Dergisi,17:1-20.

Aslan Özgür, İsmail Küçükaksoy (2006). "Finansal Gelişme ve Ekonomik Büyüme İlişkisi: Türkiye Ekonomisi Üzerine Ekonometrik Bir Uygulama". İstanbul Üniversitesi İktisat Fakültesi Ekonometri ve İstatistik Dergisi, (4):25-38

Besci, Z, Wang P (1997). "Financial Development and Growth". Federal Reserve Bank of Atlanta Economic Review, 82(4):46-62**.**

Calderon, C. and Liu, L. (2002). "The Direction of Causality between Financial Development and Economic Growth", Central Bank of Chile. Working Paper, http://www.bcentral.cl/estudios/documentos-trabajo/pdf/dtbc184.pdf.

Calderon, S, Lui, L (2003). "The Direction of Causality Between Financial Development and Economic Growth". Journal of Development Economics, 72(1):321-334.

Chang, Caudill (2005). "Financial Development and Economic Growth: The case of Taiwan".Applied Economics,37(12):1329-1335.

Charemza, Wojciech W. And Derek F. Deadman (1992): New Directions in Econometric Practice, General to Specific Modelling, Cointegration and Vector Autoregression, Edward Elgar Pub.Lim., Aldershot.

Coşkun Metin, FatihTemizel, Ali Sabri Taylan (2009). " Bankacılık Sektörü Hisse Senedi Getirileri ile Ekonomik Büyüme Arasındaki İlişki: Türkiye Örneği".Kocaeli Üniversitesi İ.İ.B.F Dergisi, 5(7):1-18.

Darıcı, Havva Kılıç (2009). "Finansal Derinleşme ve Ekonomik Büyüme İlişkisi: Gelişmekte Olan Piyasalar Örneği. Yüksek Lisans Tezi, Zonguldak Karaelmas Üniversitesi Sosyal Bilimler Enstitüsü, Zonguldak.

Darrat, A.F (1999). "Are Financial Deeping and Economic Growth Casually Related? Another Look At the Evidence". İnternational Economic Journal, 13(3):19-35.

De Gregorio, J Guidotti (1995). "Financial Development and Economic Growth World Development". Elsevier, (23):433.

Demirgüç, Aslı, Kunt, Maksimoviç (1998). "Law, Finance and Firm Growth".The Journal of Finance,53(6):2107-2130.

Demirhan Erdal, O Aydemir (2011). "TheDirection of CausalityBetween Financial Development and Economic Growth, Evidence from Turkey".International Journal of Management, 28(1):3.

Dickey, D.A. and W.A. Fuller (1979), "Distribution of the Estimators for Autoregressive Time Series with a Unit Root", *Journal of American Statistical Association*, 74, ss.427-431.

Enders, W (2004). Applied Econometric Time Series. USA.

Engle Robert F., Byung Sam Yoo (1987):"Forecasting and Testing in Co-Integrated Systems", *Journal of Econometrics*, 35, ss.143-159.

Engle Robert F., C.W.J. Granger (1987):"Co-Integration and Error Correction: Representation, Estimation,and Testing", *Econometrica*, 55, No:2, ss.251-276.

Erim, Neşe, Armağan Türk (2005). "Finansal Gelişme ve İktisadi Büyüme". Kocaeli Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 10(2):21-45.

Jayaratne, Philip, E.Strahan (1996). "Financial Development and Economic Growth". Journal of Banking and Finance, 22:821-845.

Ghirmay,T (2004). "Financial Development and EconomicGrowth in Sub-Saharan African Countries: Evidence from Time Series Analysis".African Development Review ,16(3),415-432.

Gökdeniz İ, M. Erdoğan, K.Kalyüncü (2003). "Finansal Piyasaların Ekonomik Büyümeye Etkisi ve Türkiye Örneği".Gazi Üniversitesi Ticaret ve Turizm Eğitim Dergisi,1.

Hermes Niels, Robert Lensing (1997). Financial Development and Economic Growth. New York and London: Routhledge.

Kang, Sawada (2000). "Financial Repression and External Opennes in An Endogenous Growth Model". The Journal of International Trade and Economic Development, 9,4.

Kaplan Muhittin (2008). "TheImpact of Stock Market on Real Economic Activity: Evidence from Turkey". Journal of AppliedSciens, 8(2),374-378.

Kar, Muhsin, Eric J Pentecost (2000). "Financial Development andEconomicGrowth in Turkey: Further Evidence On TheCausality Issue". Loughborough Univercity, 1-20.

Kar, Muhsin, Şaban Nazlıoğlu, Hüseyin Ağır (2010). "Financial Development and Economic Growth Nexus İn the Mena Countries: Bootstrap Panel Granger Casuality Analysis". Economic Modelling, (28):685-693.

Kar, Muhsin, Eric J Pentecost (2000). "Financial Development and Economic Growth in Turkey: Further Evidence On The Causality İssue". Loughborough Univercity, 1-20.

Karagöz Kadir, Recep Armutlu (2007). "Hisse Senedi Piyasasının Gelişimi ve Ekonomik Büyüme: Türkiye Örneği". Malatya İnönü Üniversitesi Türkiye Ekonometri ve İstatistik Kongresi, 24-25.

Kargı,N, H.Terzi (1997). "Casual Relations Among the ISE Inflation, Interest Rates and Real Activity in Turkey: A VAR Analysis". ISE Review,1:27-38.

King, Robert, RossLevine (1993). " Finance, Entrepreneurship and Growth, Theory and Evidence".Journal of Monetary Economics 32:513-542.

Levine, R, S. Zerous (1996). "Stock Market Development and Long-Run Growth". World Bank, Working Paper, 1582.

Levine, R, S. Zerous (1998). "Stock Markets, Banks and Economic Growth", The American Economic review, 88 (3):538-558.

Levine, Ross, Norman Layza,Thorsten Beck (2000). "Financial Intermediation and Growth:Casuality and Causes". Journal of MonetaryEconomics, 46(1):31-77.

Liang, Q., and Teng, J.Z. (2006). "Financial development and economic growth: evidence from China", China Economic Review, 17(4), 395-411.

Mercan ,M, O. Peker (2013). "The Effect of Financial Development on Economic Growth: An Econometric Analysis". Dumlupınar Üniversitesi Sosyal Bilimler Dergisi, 36,187-201

Müslümov, A., Güler Aras (2002). "Sermaye Piyasası Gelişmesi ve Ekonomik Büyüme Arasında Nedensellik İlişkileri: OECD Ülkeleri Örneği", Global Business and Technology Assocation, 25-29.

Nazlıoğlu, S, Ege. İ,A. Bayraktaroğlu (2009) . "Financial Development and Economic Growth: Co-Integration and Causality for Turkey".Banking and Finance Letter ,1(2):59-66.

Onur, Sara (2005). "Finansal Liberalizasyon ve GSMH Büyüme Arasındaki İlişki". Zonguldak Karaelmas Üniversitesi Sosyal Bilimler Dergisi, 79 (10):9-18.

Özcan, B,A. Arı (2011). "Finansal Gelişme ve Ekonomik Büyüme Arasındaki İlişkinin Ampirik Analizi: Türkiye Örneği". Business and Economics Research Journal ,2(1):121-142.

Öztürk,İ(2008)."Financial Development and Economic Growth:Evidence from Turkey".Applied Econometrics and International Development,8(1),85-98.

Rajan, Zingales (1998). "Which Capitalism? Lessons Form The East AsianCrisis". Journal of Applied Corporate Finance,11(3):40-48.

Rioja, F, N. Valev (2004). "Finance and The Sources of Growth at Various Stages of Economic Development". Economic Ingury, 42:127-140.

Rousseau, Peter, Paul Wachtel (1998). "Financial Indermediation and Economic Performance: Historical Evidence from Five Industrialized Counries". Journal of Money,Credit and Banking, 30(4) :657-678.

Rousseau, P., Paul Wachtel (1999). "Financial Intermediation and Economic Performance: Historical Evidence from Five Industralized Countries", Journal of Money, Credit and Banking, 30 (49:657-678.

Shan Jordan, QiJianhong (2006). "Does Financial Development "Dead" Economic Growth? The Case Of China".Annals of Economics and Finances,1:231-250.

Shan, J., Alan Morris (2002). "Does Financial Development Lead Economic Growth?", International Review of Applied Economics, 16:153-168.

Shan J (2005): Does financial development 'lead' economic growth? A vector autoregression appraisal. *Applied Economics,* 37: 1353–1367.

Shan Jordan, QiJianhong (2006). "Does Financial Development "Dead" Economic Growth? The Case Of China".Annals of Economics and Finances,1:231-250.

Shaw, E (1973). "Financial Depening İn Economic Development". Oxford Univercity Press, London.

Rajan, Zingales (1998). "Which Capitalism? Lessons Form The East AsianCrisis". Journal of Applied Corporate Finance,11(3):40-48.

Rioja, F, N. Valev (2004). "Finance and The Sources of Growth at Various Stages of Economic Development". Economic Ingury, 42:127-140.

Rousseau, Peter, Paul Wachtel (1998). "Financial Indermediation and Economic Performance: Historical Evidence from Five Industrialized Counries". Journal of Money,Credit and Banking, 30(4) :657-678.

Thangavelu, Shandre M, AngBengJiunn, James (2004). "Financial Development and Economic Growth in Australia: An Empricial Analysis". Empirial Economics, 29:247-260.

Ünal Seyfettin (2009).Finans Piyasaları ve Ekonomik Büyüme.Bursa:Ekin Basım Yayın Dağıtım.

Ünalmış Deren (2002). "The Causality Between Financial Sector Development and Economic Growth: The case of Turkey". The Central Bank of theRepublic of Turkey, Resarch Depeartment Working Paper,3.

Yapraklı, Sevda (2007). "The Relationship Between Trade and Financial Openness and Economic Growth: An Appication on Turkey".İstanbul Üniversitesi İktisat Fakültesi Ekonometri ve İstatistik Dergisi, 5,23.

Yay, G,Oktayer (2009). "Financial Development and Economic Growth: A Comparative Analysis".Journal for Economic Forecasting,6(3):56-74.

Yıldız, Hilal (2013). Zaman Serileri Analizi. Bursa: Ekin Yayıncılık.

Yılmaz, Ö, Vedat Kaya (2006). "Finansal Kalkınma ve İktisadi Büyüme Arasındaki Nedensellik". İktisat,İşletme ve Finans Dergisi, 21 (24) :120-131.

Yücel , F (2009). "Temel Bileşenler Yöntemiyle Türk Sermaye Piyasasının Gelişiminin Ekonomik Büyüme Üzerine Etkilerinin Analizi". Sosyo Ekonomi, 1,78-79.