

**THE IMPACT OF STOCK MARKET-BASED FINANCIAL DEVELOPMENT ON
ECONOMIC GROWTH: EVIDENCE FROM TÜRKİYE¹****Prof. Durmuş Çağrı YILDIRIM (Ph.D.)*** **Prof. İbrahim Güran YUMUŞAK (Ph.D.)**** **Dilan GÜRÇEK***** **ABSTRACT**

This study investigates the impact of stock market-based financial development on economic growth in the case of Türkiye. Financial development is considered a fundamental component of economic progress, playing a crucial role in understanding the relationship between financial markets and economic expansion. The study utilizes quarterly data from January 1999 to January 2023 and applies the Autoregressive Distributed Lag (ARDL) cointegration methodology. The findings suggest that financial development, alongside consumption and net exports, has a positive influence on economic growth. However, investment has no significant effect on the growth rate, whereas government expenditure has a negative impact.

Keywords: Stock Market, Financial Development, Economic Growth, Bounds Test, ARDL Model.

Jel Codes: D53, O11, C32.

**BORSA TEMELLİ FİNANSAL KALKINMANIN EKONOMİK BÜYÜME ÜZERİNDEKİ
ETKİSİ: TÜRKİYE ÖRNEĞİ****ÖZET**

Bu çalışma, Türkiye özelinde borsa temelli finansal gelişmenin ekonomik büyüme üzerindeki etkisini incelemektedir. Finansal gelişme, ekonomik kalkınmanın temel bir bileşeni olarak kabul edilmekte ve finansal piyasalar ile ekonomik büyüme arasındaki ilişkinin anlaşılmasında önemli bir rol oynamaktadır. Çalışma, Ocak 1999'dan Ocak 2023'e kadar olan üç aylık verileri kullanmakta ve

¹ This study is derived from the master's thesis titled "The relationship between stock market-based financial development and economic growth: The case of Turkey" prepared by Dilan Gürçek at Tekirdağ Namık Kemal University, Institute of Social Sciences. This study was presented as an oral presentation at the 3rd World Conference on Management, Business, and Finance held in Istanbul in 2024.

* Tekirdağ Namık Kemal University, Faculty of Economics and Administrative Sciences, Tekirdağ/Türkiye, E-Mail: dcayildirim@nku.edu.tr

** İstanbul Sabahattin Zaim University, Faculty of Business and Management Sciences İstanbul/Türkiye, E-Mail: ibrahim.yumusak@izu.edu.tr

*** Tekirdağ Namık Kemal University, Faculty of Economics and Administrative Sciences, Tekirdağ/Türkiye, E-Mail: dilagurcek1@gmail.com

Makale Geçmişi/Article History

Başvuru Tarihi / Date of Application : 18 Şubat / February 2025

Düzeltilme Tarihi / Revision Date : 12 Mayıs / May 2025

Kabul Tarihi / Acceptance Date : 19 Temmuz / July 2025

Otoregresif Dağıtılmış Gecikmeli (ARDL) eşbütünleşme metodolojisini uygulamaktadır. Bulgular, finansal gelişmenin, tüketim ve net ihracatla birlikte ekonomik büyüme üzerinde olumlu bir etkiye sahip olduğunu göstermektedir. Ancak, yatırımın büyüme oranı üzerinde anlamlı bir etkisi yoktur ve kamu harcamalarının ise olumsuz bir etkisi vardır.

Anahtar Kelimeler: *Borsa, Finansal Gelişme, Ekonomik Büyüme, Sınır Testi, ARDL Modeli.*

Jel Kodları: *D53, O11, C32.*

1. INTRODUCTION

In the contemporary economic literature, the relationship between financial development and economic growth has become a subject of significant interest. The objective of financial development is to utilise resources in an effective manner, to encourage investments, and to support economic growth by strengthening a nation's financial system. In this context, stock markets, a subcomponent of capital markets, play a pivotal role in the efficiency of resource allocation, the development of risk-sharing mechanisms, and the diversification of financial intermediation activities. The development of a well-functioning stock market has been shown to have a number of beneficial effects. Firstly, it facilitates firms' access to the funds they need for long-term investments. Secondly, it allows investors to direct their savings to higher-return areas. This has been demonstrated to encourage the channeling of capital into productive areas, thus increasing productivity and ultimately paving the way for sustainable economic growth. The process of economic growth is characterised by the augmentation of a nation's production capacity, the expansion of employment opportunities, and the enhancement of living standards. The extant literature provides substantial evidence that the development of financial markets, as measured by the stock market, can directly and indirectly affect economic growth. In this context, an empirical analysis conducted on the Turkish example provides a significant and current research basis for revealing the contribution of deepening financial markets to growth performance.

In fact, the effects of growth on employment are neither direct nor automatic. Given the nonlinear nature of the macroeconomy, it would be inappropriate to expect a mechanical relationship to emerge. Growth's emergence, its sectoral distribution, the structure of labour markets and public policies all determine its impact on employment. Therefore, growth that increases employment requires macroeconomic stability, active labour market policies and complementary measures. In this context, capital-intensive growth and situations where productivity growth substitutes for employment, labour market mismatches and import-intensive growth may lead to economic growth, but they do not necessarily increase employment.

Financial development is regarded as one of the fundamental pillars of modern economic growth theory. The theoretical literature emphasizes the contributions of financial systems to the overall functioning of the economy, highlighting the critical role of financial deepening in ensuring sustainable

growth. Notably, Schumpeter (1911) and subsequent theoretical studies underscore that financial institutions and markets serve economic growth across a broad spectrum, ranging from the efficient allocation of resources to the financing of innovative enterprises. In this context, financial development not only accelerates growth rates but also enhances the quality of investments and mitigates the impact of economic fluctuations (King and Levine, 1993).

Türkiye's economic structure serves as an important case for examining the relationship between financial development and economic growth. Particularly since 1980, Türkiye has undertaken various reforms aimed at modernizing its financial markets and accelerating economic growth through financial liberalization policies. These reforms have encompassed multiple dimensions, including the development of the banking sector, deepening of capital markets, and attraction of foreign capital inflows (Akyüz and Boratav, 2003). However, the long-term sustainability of financial development's impact on economic growth depends on factors such as the efficiency of the financial system, the capacity of credit allocation to the real sector, and macroeconomic stability (Öztürk and Acaravcı, 2010). Nevertheless, this process has occasionally been disrupted due to financial system vulnerabilities, macroeconomic instabilities, and challenges in sustaining structural reforms. For instance, the 2000–2001 financial crisis and the subsequent policy measures have demonstrated the complexity of the relationship between financial development and economic growth in Türkiye (Özatay and Sak, 2003).

In response to these crises, Türkiye initiated a series of recovery efforts, which proved effective. A new economic program, formulated with the support of the International Monetary Fund (IMF), was implemented. This program, known as the "Transition to a Strong Economy," aimed to introduce structural reforms and regulatory measures across multiple areas, ranging from revitalizing the economic units affected by the crisis to fostering a competitive environment. The program achieved its intended objectives and played a significant role in post-crisis economic recovery (Eğilmez, 2020: 233).

Regarding the impact of financial development on economic growth, various theoretical perspectives exist in the literature. Schumpeter (1911) argues that financial intermediation fosters innovation and capital accumulation by supporting entrepreneurs, thereby accelerating economic growth. In contrast, McKinnon (1973) and Shaw (1973) assert that financial liberalization promotes growth by increasing savings and investment levels. On the other hand, Robinson (1952) and Lucas (1988) contend that financial development is a consequence rather than a determinant of growth, arguing that economic growth itself is the primary driving force behind financial system expansion.

Türkiye has taken important steps in financial development and economic growth in recent years. Türkiye's level of financial development has increased, especially with factors such as reforms in the financial sector, expansion of the banking sector, deepening of capital markets and widespread use of financial technologies. In this context, examining the relationship between financial development and economic growth through the example of Türkiye is important in terms of evaluating Türkiye's

economic performance and guiding future policy decisions. This study aims to examine in detail the relationship between financial development and economic growth through the example of Türkiye.

2. FINANCIAL DEVELOPMENT

Financial development refers to the qualitative and quantitative growth of institutional structures and financial instruments within a country's financial system. An adequate financial system is characterised by an increase in the activities of financial institutions and instruments within the system. A deepening financial system involves an increase in the number of financial institutions and financial agents. Thus, according to endogenous growth models, financial development is influenced by economic growth through capital accumulation and total factor abundance. Increased investment in productive sectors through the accumulation and utilisation of savings can lead to increased employment and growth.

The financial system is an order or method in which different elements are in mutual relations and created to achieve a certain purpose. This system provides financing for economic activities, facilitates the conversion of savings into investments and manages payment transactions. It contributes to economic growth, capital flow and risk management through the collaboration of elements such as banks, financial institutions, capital markets, insurance companies and other financial instruments (Afşar, 2013). The financial sector primarily consists of collecting, evaluating and transferring information and resources to reduce costs. As a result, it will have positive results in growth due to the increase in efficiency and productivity of savers and investors. For the financial system to fulfill its mission successfully, the right conditions must be created. These conditions are correct economic policies, ensuring a stable macroeconomy, and legal regulation of the rights of lenders and shareholders. Here, the enforcement-bankruptcy system, commercial law, competition law, surveillance and audit system are included in these legal regulations. Once these environments are created and the system starts to work well, a stable growth will occur in the economy (Özince, 2008).

The main task of financial systems is to support economic development by dynamically distributing economic resources to the market under limited risk. This activity process may vary depending on the following prerequisites being met (Akgiray, 1998):

- An effective payments system: An effective payments system should be established so that the purchase and sale of goods and services can continue functionally. This system should include means of payment such as payment by check, credit cards, and consumer credit accounts.
- Appropriate intermediary institutions: To ensure that large-scale financial investments are evaluated in the right investment instruments, intermediary institutions that will ensure the effective distribution of savings funds geographically and temporally should be included in the financial system.

- Risk distribution: The financial system must include control mechanisms to ensure the appropriate distribution of risk between issuers of financial market instruments and investors evaluating fund sources.

- Information transmission mechanism: Information transmission mechanisms should be established to convey the prices of financial market instruments to individuals in a fluent and active manner. In this way, quick decisions can be made in the market and information asymmetry can be reduced.

These prerequisites are important for the financial system to function effectively and for the correct distribution of economic resources. The combination of these factors enables the financial system to fulfill its basic mission.

3. FINANCIAL DEVELOPMENT & ECONOMIC GROWTH NEXUS

The relationship between financial development and economic growth is discussed around four separate views shown below (Mutlu, 2016):

➤ The View That Accepts Economic Growth as a Result: It represents the theories on the relationship put forward by Goldsmith (1960), King and Levine (1993), McKinnon and Shaw (1973), Fry (1978, 1988), Bencivenga and Smith (1991) and Schumpeter (1911). The Schumpeterian approach argues that the benefits offered through financial agents are critical for change and growth. According to this approach, it is stated that financial intermediaries play a role in facilitating technological innovation, accumulating savings, evaluating investments and providing information about firms. (Capasso, 2004). The ability of financial intermediaries to direct resources to productive areas directly affects economic growth and has positive effects such as technical change and productivity increase. (Bloch and Tang, 2003). While Goldsmith (1969) stated the existence of a relationship between national income per capita and financial development, King and Levine (1993) showed in their studies that there was a positive relationship between the relationship. McKinnon and Shaw examined the effects of government interventions on financial development. In their study, they argued that restrictions in the banking system negatively affect the progress of the financial sector and reduce economic growth. They emphasized that the restrictions imposed on the banking system, such as the state's maximum interest rates, severe reserve requirements and direct credit programs, negatively affected growth. These studies also provide results consistent with the endogenous growth literature, which shows that services provided by financial intermediaries, such as liquidity supply and risk sharing, positively affect economic growth.

In addition, the endogenous growth literature, which models studies such as liquidity provision and risk sharing obtained with the support of financial intermediaries, has reached the same conclusion. Here, it has been found that the state has a negative impact on the growth rate when it takes over the

financial system, and financial intermediaries have a positive impact on growth (Aslan and Küçükaksoy, 2006). In addition, the endogenous growth literature shows that services such as liquidity supply and risk sharing provided by financial intermediaries have a positive impact on growth. In this way, there are various views examining the relationship in studies, and these studies reveal different results from each other.

➤ The View That Accepts Financial Development as a Result: Representatives who support this point of view include Robinson (1952), Lucas (1988) and Stern (1989). This view argues that economic growth and increased demand for financial services trigger economic development. Economic development is a result of a growth rate. A growth rate further increases the demand for financial studies. This situation encourages economic development (Aslan and Küçüksoy, 2006).

➤ View Accepting the Existence of a Two-Way Relationship: It argues that there is a reciprocal relationship between financial development and economic growth. Representatives supporting this view include Hugh Patrick (1966) and Demetriades and Hussein (1996). These studies provide evidence that growth affects financial development and financial development affects growth. That is, while growth promotes financial development, financial development also supports economic growth. This two-way relationship emphasizes the interdependence between economic growth and financial development (Atamtürk, 2005).

➤ The View That Accepts No Relationship: The studies of Robert Lucas and Shan and Morris support a view that there is no causal relationship between the relationship. Shan and Morris (2002) conducted a study on 19 OECD countries, China and South Korea for the period 1985-1998. However, the results of the study have been mixed. While it has been determined that financial development leads to economic growth in some countries, a corresponding interaction or economic growth has been found to confirm financial development in some countries. In general, it is concluded that financial development and economic growth occur in harmony and do not cause each other.

Based on these views, it has been observed that no common conclusion has been reached in theoretical studies regarding the study. This is also valid for studies focusing on Türkiye. In the study, studies on relationship are included from the literature review.

4. LITERATURE REVIEW

Studies on the relationship between financial development and growth in Türkiye are shown in the table below.

Table 1. Literature Review for Türkiye

Source	Model	Empirical Result	Country
Kar and Pentecost (2000)	VEC model was used.	The causality relationship in the study varies depending on the financial indicators used. When a financial development indicator such as money supply is used, a causal relationship from financial development to economic growth is observed. That is, increases in money supply can affect economic growth. On the other hand, when other financial indicators such as bank deposits and bank loans are considered, a causal relationship emerges from economic growth to financial development.	Türkiye
Atamturk (2004)	Granger Causality	There is a causality from financial development to economic growth.	Türkiye
Onur (2005)	Granger Causality (Autoregressive Model)	After the financial liberalization of the Turkish economy, it has been concluded that financial liberalization is not the cause of financial development and openness to GNP , but GNP is caused by financial development and openness to financial liberalization.	Türkiye
Aslan and Küçükaksoy (2006)	Granger Causality Test model	In the study examined, the relationship between financial development and economic growth is that financial development affects economic growth.	Türkiye
Acaravcı, Öztürk and Kakilli (2007)	Cointegration Analysis	There is causality from financial development to economic growth.	Türkiye
Altunç (2008)	Error Correction Testing	The change in causality between financial development and economic growth depends on the indicators of financial development.	Türkiye
Güngör and Yılmaz (2008)	Granger causality.	There is a long-term relationship between developments in the securities market and banking sector and economic growth. The results obtained from Granger causality analysis show an interrelationship between economic growth and stock market development. Additionally, a unidirectional causality was determined from economic growth to the banking sector. The information here shows that the "Demand-Following" hypothesis is supported.	Türkiye
Nazlıoğlu and Bayrakdaroğlu (2009)	Limit Test	It has been concluded that the relationship between financial development and private investments is a two-way causality.	Türkiye
Altıntaş and Ayriçay (2010)	Border as a model The test has been determined.	It was concluded that there is a long-term cointegration relationship between Financial Development, Real Growth, Real Interest Rate and Openness . These findings show that these variables are related to each other in the long term.	Türkiye
Öztürk and Darıcı (2010)	Panel Granger causality test was applied.	The deepening and development of financial assets supports economic growth by ensuring a more comprehensive and effective use of	10 developing

		resources in the economy. This shows that the strengthening of the financial sector has an effect on increasing economic growth. The results obtained in the research also confirm this view.	countries including Türkiye
Keskin and Karşıyakalı (2010)	Engle –Granger Management and Causality Testing	It has been concluded that economic growth has a positive impact on financial development and economic growth.	Türkiye
Özcan and Arı (2011)	VAR Test	The relationship outcome is one-way in Türkiye. The result of the study is in the direction of financial development from economic growth.	Türkiye
Soytaş and Küçükkaya (2011)	VAR Test with Granger Causality	The relationship was examined by creating an index with six different financial development variables, but there is no causality relationship.	Türkiye
Yüce, Akıncı and Yılmaz (2013)	Cointegration tests	According to the results of the study, the demand-following hypothesis is valid in some countries. On the other hand, in some countries the supply-following hypothesis is valid.	It was made for 44 countries
Bozoklu and Yılancı (2013)	Panel Granger causality test	It was concluded that financial development has a significant impact on economic growth. Therefore, countries that want to increase their economic growth rate need to strengthen their financial development.	Türkiye, Peru, Chile, Thailand, Brazil, Indonesia, China, South Korea, Philippines, Hungary, India, Mexico, Egypt, Malaysia
Aydın, Altıntaş and Ak (2014)	Toda-Yamamoto Test was used.	The findings obtained as a result of the analysis indicate that there is a causal relationship from economic development to economic growth. In other words, increasing the level of economic development encourages economic growth.	Türkiye
Özaktaş Davarcıoğlu (2016)	Linear Regression Model Testing	As a result of the study, it was concluded that financial development supports economic growth and the demand-following hypothesis remains valid. That is, increased financial development stimulates economic growth.	Türkiye
Çeştepe and Yıldırım (2016)	VEC and Granger causality test. Toda-Yamamoto analysis	According to the applied test results, a short- and long-term bi-directional causality relationship was found between economic growth and financial development.	Türkiye
İnançlı, Altıntaş and İnal (2016)	Pesaran and Yamagata (2008) Delta Test	As a result of the study, it was concluded that the relationship between financial development and economic growth was positive for D-8 countries.	D-8 Countries (Türkiye, Nigeria, Pakistan, Iran, Malaysia)

			, Egypt Indonesi a, Banglade sh)
İlter and Burtan (2018)	Cointegration test was applied in the study .	A positive relationship has been determined between financial development and economic development.	Türkiye, Shanghai Five countries (Kazakhs tan, Kyrgyzst an, China , Tajikista n and Russia)
Kurt (2019)	Johansen cointegration test, VEC model, Granger causality test	A bidirectional causal relationship was found between energy consumption and economic growth, while a unidirectional relationship was identified between financial development and energy consumption.	Türkiye
Atay (2020)	Granger causality test	The study, which used broad money supply as a measure, identified a unidirectional relationship from economic growth to financial development.	Türkiye
Eyüboğlu and Akan (2020)	Cointegration analysis	Analyzing data from 1980 to 2016, the study found a relationship from financial development toward economic growth.	Türkiye
Tuncay and Oruç (2021)	Feasible Generalized Least Squares (FGLS)	The study concluded that private sector loans, broad money supply, and inflation negatively impact economic growth, while public expenditures, bank financing for the private sector, and fixed capital investments support growth.	Türkiye, Indonesi a, Poland, Mexico, Brazil, Thailand, Romania, Malaysia , Chile, Argentin a

5. DATA AND METHODOLOGY

In this study, the relationships between financial development and growth in Türkiye are investigated. In this context, the period 1999:01-2023:1 is studied with quarterly data. The logarithm of the data is used. The data is obtained from the databases of the Central Bank of the Republic of Türkiye and the Turkish Statistical Institute. The estimation equation used in the research is shown in Eq.1.

$$\text{GROWTH}_t = a_0 + a_1 \text{BIST}_t + a_2 \text{PE} + a_3 \text{CON} + a_4 \text{NEXP} + a_5 \text{INV} + \varepsilon_t \quad (1)$$

In Equation 1, GROWTH (GDP growth rate), BIST (Borsa İstanbul 100 Index Growth Rate) NEXP (Net Export), CON (Consumption Rate), PE (Public Expenditure) and INV (Investment rates) are included.

Time series analysis is used in this study to examine the relationship between variables, selected based on data characteristics. First of all, the stationarity levels of the variables are investigated with ADF (Augmented Dickey Fuller) and PP (Philip Perron) unit root tests. After stationarity tests, the cointegration relationship between the variables was handled with the ARDL (Autoregressive Distributed Lag) methodology. Additionally, Granger causality analysis was performed to analyze the causality relationship. These methods are powerful tools used to understand the relationship between variables and identify interactions.

The ARDL model is a flexible method that allows for the simultaneous examination of both short- and long-term relationships between variables in time series analysis. This model is particularly preferred in cases where dependent and independent variables have different degrees of integration ($I(0)$ and $I(1)$). Because the ARDL model does not require series to be stationary at the same level, it offers a broader range of applications than traditional cointegration tests, which a priori require all series to be $I(1)$. It has the advantages of providing reliable results even with small samples and the ability to flexibly specify the lag structure within the model. The FMOLS model used in this study is a nonparametric estimation method preferred when there is a long-term cointegration relationship between series. Because the traditional OLS method can produce biased and inconsistent estimates when working with non-stationary series, FMOLS was developed as an improved alternative. One of the main advantages of the FMOLS method is that it eliminates autocorrelation and endogeneity issues, producing unbiased and consistent estimates of long-term relationships. Especially in small samples, FMOLS can provide reliable results, and when cointegration is present, it can yield more accurate estimates than traditional OLS. However, FMOLS falls short in analyzing short-term dynamics and focuses solely on long-term relationships.

6. RESULTS

In this study, Augmented Dickey Fuller (ADF) and Philip Perron (PP) unit root analysis are used to determine the stationarity levels of the variables. These tests are widely used to analyze time series properties of variables and determine their stationarity properties. Based on the results of these tests, the stationarity levels of the variables are determined. The results are seen in Table 2.

Table 2. ADF and PP Unit Root Test Results

ADF Unit Root Test							
Models	t-stat./Prob.	GROWTH	NEXP	PE	CON	INV	BIST
Intercept Model	t-stat.	-1.372	-2.982	-2.318	-1.534	-1.515	-1.087
	Prob.	0.592	0.040	0.168	0.512	0.521	0.718
Intercept & Trend Model	t-stat.	-1.007	-4.346	-3.212	-3.006	-3.462	-2.916
	Prob.	0.937	0.004	0.088	0.135	0.049	0.161
PP Unit Root Test							

Models	t-stat./Prob.	GROWTH	NEXP	PE	CON	INV	BIST
Intercept Model	t-stat.	-1.528	-3.911	-6.465	-4.270	-3.155	-1.063
	Prob.	0.514	0.002	0.000	0.000	0.025	0.727
Intercept & Trend Model	t-stat.	-1.007	-4.265	-7.251	-7.602	-5.802	-2.956
	Prob.	0.937	0.005	0.000	0.000	0.000	0.150

According to the ADF and PP test results, it is decided that the GROWTH and BIST variables are not stationary. NEXP, PE, INV, CON variables are stationary. Series that are not stationary at level become stationary at their first difference. Different stationarity levels of the series show that ARDL (Autoregressive-Distributed Lag) analysis may be preferred for cointegration test. The ARDL analysis can be used in models where variables are level stationary or first order stationarity (Peaseran Shin and Smith, 2001). The cointegration test results can be seen in Table 3.

Table 3. ARDL Test Results

Independent Variables Number (k)	F Stat.	Critical Values (at 5% significant level)	
		Lower Bond I(0)	Upper Bond I(1)
5	4.733	2.39	3.38

According to the results, it is concluded that the F test value is above the critical value and in this context, a cointegration relationship exists. After determining the cointegration relationship, the ARDL model was used to determine long and short-term relationships. The model results for ARDL analysis are shown in Table 4.

Table 4. ARDL (1, 0, 0, 0, 1, 1) Model Results

Variables	Coeff.	t-stat.	Prob.
GROWTH (-1)	0.812	18.402	0.000
BIST	0.001	2.107	0.038
PE	-0.137	-4.809	0.000
NEXP	-0.020	-1.456	0.148
CON	0.001	0.089	0.928
CON(-1)	-0.035	-2.457	0.016
INV	0.001	0.115	0.908
INV(-1)	-0.061	-4.151	0.000
C	0.047	2.951	0.004
Diagnostic Tests			
R^2	0.915		
Adjusted R^2	0.907		
F stat.	117.553 (0.000)		
Breusch-Godfrey LM Test	1.311 (0.272)		
Jarque-Bera Normality Test	1.192 (0.550)		
Ramsey Reset Test	0.210(0.647)		

Diagnostic test results of the ARDL (1, 0, 0, 0, 1, 1) model are shown in Table 4. According to the results here, no autocorrelation or heteroscedasticity problems are exist. The error term is normally distributed and no errors are made in the setup of the model. FMOLS model, which has many

advantages, can be used when obtaining the coefficients of cointegrated equations. The long-term coefficients obtained as a result of the FMOLS model are presented in Table 5.

Table 5. FMOLS Test Results

Variables	Coeff.	t- stat.	Prob.
PE	-0.459	-3.661	0.000
BIST	0.011	2.917	0.005
NEXP	0.158	1.666	0.099
CON	0.199	2.068	0.042
INV	-0.100	-1.063	0.291
C	-0.087	-1.032	0.305
R^2	0.073	Regression S.E.	0.008
Adjusted R^2	0.022	Total squared error	0.006

According to the results of FMOLS model, it is concluded that Consumption, Net exports and stock market index positively affected growth. On the other hand, it is concluded that investment expenditures do not have a significant effect and public expenditures also have a negative effect. It has been concluded that financial development, which is the focus of the study, has a positive and significant effect on growth in the long term for Türkiye and for the analysis period.

7. CONCLUSION

The relationship between financial development and economic growth has been a subject of great interest in the economic literature. Financial development aims to use resources effectively, encourage investments and support economic growth by strengthening a country's financial system. Economic growth means increasing a country's production capacity, increasing employment and living standards. Türkiye has taken important steps in financial development and economic growth in recent years. Türkiye's level of financial development has increased, especially with factors such as reforms in the financial sector, expansion of the banking sector, deepening of capital markets and widespread use of financial technologies. In this context, examining the relationship between financial development and economic growth through the example of Türkiye is important in terms of evaluating Türkiye's economic performance and guiding future policy decisions. This study aims to examine the relationship between financial development and economic growth for the case of Türkiye.

In the analysis, quarterly data for the period 1999:01-2023:1 is used for the relationship between stock market-based financial development and economic growth. Evidence is found that there is a cointegration relationship between the series. FMOLS method is preferred to obtain long-term coefficients because of the advantages of the model. According to the results, it is concluded that Consumption, Net exports and stock market index positively affected growth. On the other hand, it is concluded that investment expenditures do not have a significant effect and public expenditures also have a negative effect. It has been concluded that financial development, which is the focus of the study, has a positive and significant effect on growth in the long term for Türkiye and for the analysis period.

To strengthen economic stability and development of Türkiye, financial markets need to be deepened and consolidated. In this context, policy makers and practitioners should constantly update the financial system and effectively solve the difficulties encountered in the real sector's access to financial resources. Based on empirical findings, it is recommended to create a guidance structure that will direct the flow of funds to the real economy. In this way, Türkiye can achieve a strong position on the world economic stage by moving towards the goal of stable and sustainable development.

In Türkiye, the financial system must be better integrated with the real economy and financial resources must be channeled into productive, production-oriented areas. To ensure lasting economic stability and sustainable growth, not only the growth of financial markets but also their functional depth and contribution to the real sector must be increased. In this context, a key recommendation for policymakers is to establish a governance system that strengthens institutional capacity and restructures resource allocation mechanisms to encourage productive investments. This system should be built upon regulations that increase transparency and accountability in access to finance, the development of a diverse range of financial products for the real sector, and structural reforms that support the institutionalization of capital markets.

Through the holistic and flexible policy mechanisms developed within this framework, the financial system will not only achieve an investment-, production-, and employment-oriented structure, but will also become more resilient to crises. As a result, Türkiye will have the potential to strengthen its development process not only quantitatively but also qualitatively.

REFERENCES

- Acaravcı, A., Öztürk, İ., & Kakilli, S. A. (2007). Finance-growth nexus: Evidence from Türkiye. *International Research Journal of Finance and Economics*, 11, 30–40.
- Afşar, A. (2013). Finansal sistem ve işleyişi. In M. Afşar (Ed.), *Finansal ekonomi* (pp. 2–25). Eskişehir: Anadolu Üniversitesi Yayınları.
- Akgiray, V. (1998). Finansal yeniliklerin ve risk yönetiminin ekonomik kalkınmaya katkıları. *İMKB Dergisi*, 2(5), 1–14.
- Akyüz, Y., & Boratav, K. (2003). The making of the Turkish financial crisis. *World Development*, 31(9), 1549–1566. [https://doi.org/10.1016/S0305-750X\(03\)00108-6](https://doi.org/10.1016/S0305-750X(03)00108-6)
- Altıntaş, H., & Ayriçay, Y. (2010). Türkiye’de finansal gelişme ve ekonomik büyüme ilişkisinin sınır testi yaklaşımıyla analizi (1987–2007). *Anadolu Üniversitesi Sosyal Bilimler Dergisi*, 10(2), 71–98.
- Altunç, Ö. F. (2008). Türkiye’de finansal gelişme ve iktisadi büyüme arasındaki nedenselliğin ampirik bir analizi. *Eskişehir Osmangazi Üniversitesi İİBF Dergisi*, 3(2), 113–127.

- Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *Review of Economic Studies*, 58, 277–297. <https://doi.org/10.2307/2297968>
- Arellano, M., Bover, O., & McLaugh, D. (1995). Another look at the instrumental variable estimation of error-component models. *Journal of Econometrics*, 68(1), 29–52. [https://doi.org/10.1016/0304-4076\(94\)01642-D](https://doi.org/10.1016/0304-4076(94)01642-D)
- Aslan, Ö., & Küçükaksoy, İ. (2006). Finansal gelişme ve ekonomik büyüme ilişkisi: Türkiye ekonomisi üzerine ekonometrik bir uygulama. *İstanbul Üniversitesi İktisat Fakültesi Ekonometri ve İstatistik Dergisi*, 4, 12–28.
- Atamtürk, B. (2004). Türkiye’de finansal gelişme ve ekonomik büyümenin nedensellik yönü üzerine bir inceleme (1975–2003). *İstanbul Üniversitesi Maliye Araştırma Konferansları*, 46, 100–104.
- Atay, E. (2020). Finansal gelişme ve ekonomik büyüme ilişkisi: Türkiye örneği (1961–2015). *Haliç Üniversitesi Sosyal Bilimleri Dergisi*, 3(2), 305–326.
- Aydın, M. K., Altıntaş, N., & Ak, M. Z. (2014). Finansal gelişmenin büyümeye etkisi: Türkiye özelinde nedensellik analizi. *Maliye Dergisi*, 167, 149–162.
- Bencivenga, V. R., & Smith, B. D. (1991). Financial intermediation and endogenous growth. *The Review of Economic Studies*, 58, 195–209. <https://doi.org/10.2307/2297964>
- Berndt, T. J. (1981a). Age changes and changes over time in prosocial intentions and behavior between friends. *Developmental Psychology*, 17, 408–416. <https://doi.org/10.1037//0012-1649.17.4.408>
- Berndt, T. J. (1981b). Effects of friendship on prosocial intentions and behavior. *Child Development*, 52, 636–643. <https://doi.org/10.1111/j.1467-8624.1981.tb03090.x>
- Bozoklu, Ş., & Yılcı, V. (2013). Finansal gelişme ve iktisadi büyüme arasındaki nedensellik ilişkisi: Gelişmekte olan ekonomiler için analiz. *Dokuz Eylül Üniversitesi İİBF Dergisi*, 28(2), 161–187.
- Cooke, P., & McLaugh, D. (2004). Regional innovation systems: An evolutionary approach. In P. Cooke et al. (Eds.), *Regional innovation systems* (2nd ed.). London: Routledge.
- Çeştepe, H., & Yıldırım, E. (2016). Türkiye’de finansal gelişme ve ekonomik büyüme ilişkisi. *Uluslararası Yönetim İktisat ve İşletme Dergisi*, 16, 12–26. <https://doi.org/10.17130/ijmeb.2016icaf22420>
- Darıcı, B. (2018). Ekolojik ayak izi ile reel gelir arasındaki ilişki. *International Conference on Empirical Economics and Social Sciences*, Bandırma–Balıkesir.
- Eğilmez, M. (2020). *Türkiye ekonomisi* (1. baskı). İstanbul: Remzi Kitabevi.

- Eyüboğlu, K., & Akan, K. (2020). Türkiye’de finansal gelişme ve ekonomik büyüme ilişkisi: RALS-EG eşbütünleşme testi. *Afyon Kocatepe Üniversitesi Sosyal Bilimler Dergisi*, 22(4), 974–988. <https://doi.org/10.32709/akusosbil.627788>
- Güngör, B., & Yılmaz, Ö. (2008). Finansal piyasalardaki gelişmelerin iktisadi büyüme üzerine etkileri: Türkiye için bir VAR modeli. *İktisadi ve İdari Bilimler Dergisi*, 22(1), 173–193.
- İlter, Ş., & Doğan Burtan, B. (2018). Ticari ve finansal dışa açıklık oranı ile ekonomik büyüme arasındaki nedensellik ilişkisi: Türkiye örneği. *Dicle Üniversitesi İİBF Dergisi*, 8(15), 89–115.
- İnançlı, S., Altıntaş, N., & İnal, V. (2016). Finansal gelişme ve ekonomik büyüme ilişkisi: D-8 örneği. *Kastamonu Üniversitesi İİBF Dergisi*, 14, 36–40.
- Kar, M., & Pentecost, E. J. (2000). Direction of causality between financial development and economic growth in Türkiye: Further evidence. *Economic Research Paper*, Department of Economics, Loughborough University, No. 27, 3–20.
- Keskin, N., & Karşıyakalı, B. (2010). Finansal gelişme ve ekonomik büyüme ilişkisi: Türkiye örneği. *Finans Politik & Ekonomik Yorumlar*, 47(548), 76.
- King, R. G., & Levine, R. (1993). Finance and growth: Schumpeter might be right. *The Quarterly Journal of Economics*, 108(3), 717–737. <https://doi.org/10.2307/2118406>
- Kurt, Ü. (2019). Türkiye ekonomisinde finansal gelişme, enerji tüketimi ve ekonomik büyüme ilişkisi. *Electronic Turkish Studies*, 14(2). <https://doi.org/10.7827/TurkishStudies.14928>
- Lucas, R. E. (1988). On the mechanics of economic development. *Journal of Monetary Economics*, 22, 3–42. [https://doi.org/10.1016/0304-3932\(88\)90168-7](https://doi.org/10.1016/0304-3932(88)90168-7)
- McKinnon, R. I. (1973). *Money and capital in economic development*. Washington, DC: Brookings Institution Press.
- Mutlu, E. (2016). Türkiye ekonomisinde finansal gelişme ve ekonomik büyüme dinamikleri (Yüksek lisans tezi). Türk Hava Kurumu Üniversitesi, Sosyal Bilimler Enstitüsü, Ankara.
- Nazlıoğlu, Ş., Ege, İ., & Bayrakdaroğlu, A. (2009). Financial development and economic growth: Cointegration and causality analysis for Türkiye. *Banking and Finance Letters*, 1(2), 59–66.
- Onur, S. (2005). Finansal liberalizasyon ve GSMH büyüme arasındaki ilişki. *ZKÜ Sosyal Bilimler Dergisi*, 1(1), 138.
- Orhunbilge, N., Albayrak, A. S., & Bayyurt, N. (2006). *Uygulamalı çok değişkenli istatistik teknikleri*. İstanbul: Avcıol Basım Yayın.
- Özaktaş Davarcıoğlu, F. (2016). Finansal piyasa gelişmesi mi büyümeyi tetikler, büyüme mi finans piyasalarını geliştirir? Türkiye üzerine bir deneme. *Niğde Üniversitesi İİBF Dergisi*, 9(2), 75–88.

- Özatay, F., & Sak, G. (2003). The 2000–2001 financial crisis in Türkiye. *Brookings Trade Forum*, 2003(1), 121–160. <https://doi.org/10.1353/btf.2003.0008>
- Özcan, B., & Arı, A. (2011). Finansal gelişme ve ekonomik büyüme arasındaki ilişkinin ampirik bir analizi: Türkiye örneği. *Business and Economics Research Journal*, 2(1), 121–142.
- Özgür, A., & Korap, L. (2006). Financial development and economic growth relationship in Türkiye: Evidence from Johansen cointegration and Granger causality tests. *Muğla Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 17, 1–20.
- Özince, E. (2008). Finansal sektör-uluslararası gelişmeler ve Türkiye deneyimi. *Muhasebe ve Finansman Dergisi*, 40, 26.
- Öztürk, N., Barışık, S., & Darıcı, H. K. (2010). Gelişmekte olan piyasalarda finansal derinleşme ve büyüme ilişkisi: Panel veri analizi. *Zonguldak Karaelmas Üniversitesi Sosyal Bilimler Dergisi*, 12, 95–119.
- 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. <https://doi.org/10.1002/jae.616>
- Phillips, P. C. B., & Hansen, B. E. (1990). Statistical inference in instrumental variables regression with I(1) processes. *The Review of Economic Studies*, 57, 99–125. <https://doi.org/10.2307/2297545>
- Schumpeter, J. A. (1911/1936). *The theory of economic development: An inquiry into profits, capital, credit, interest, and the business cycle*. Cambridge, MA: Harvard University Press.
- Shan, J., & Morris, A. (2002). Does financial development “lead” economic growth? *International Review of Applied Economics*, 16(2), 153–168. <https://doi.org/10.1080/02692170110118885>
- Shaw, E. S. (1973). *Financial deepening in economic development*. Oxford: Oxford University Press.
- Soytaş, U., & Küçükkaya, E. (2011). Economic growth and financial development in Türkiye: New evidence. *Applied Economics Letters*, 18(6), 595–600. <https://doi.org/10.1080/13504851003761764>
- Tuncay, Ö., & Oruç, D. (2021). Gelişmekte olan ekonomilerde finansal gelişmişlik ve ekonomik büyüme ilişkisi. *Itobiad: Journal of the Human & Social Science Researches*, 10(3), 879–891. <https://doi.org/10.15869/itobiad.890302>
- Yüce, G., Akıncı, M., & Yılmaz, Ö. (2013). Finansal kalkınma ile iktisadi büyüme arasındaki nedensellik ilişkisi: Çok ülkeli bir zaman serisi analizi. *Marmara Üniversitesi Finansal Araştırmalar ve Çalışmalar Dergisi*, 4(8), 111–144.

KATKI ORANI / CONTRIBUTION RATE	AÇIKLAMA / EXPLANATION	KATKIDA BULUNANLAR / CONTRIBUTORS
Fikir veya Kavram / <i>Idea or Notion</i>	Araştırma hipotezini veya fikirini oluşturmak / <i>Form the research hypothesis or idea</i>	Prof. Durmuş Çağrı YILDIRIM (Ph.D.) Prof. İbrahim Güran YUMUŞAK (Ph.D.) Dilan GÜRÇEK
Tasarım / <i>Design</i>	Yöntemi, ölçeği ve deseni tasarlamak / <i>Designing method, scale and pattern</i>	Prof. Durmuş Çağrı YILDIRIM (Ph.D.) Prof. İbrahim Güran YUMUŞAK (Ph.D.) Dilan GÜRÇEK
Veri Toplama ve İşleme / <i>Data Collecting and Processing</i>	Verileri toplamak, düzenlenmek ve raporlamak / <i>Collecting, organizing and reporting data</i>	Prof. Durmuş Çağrı YILDIRIM (Ph.D.) Prof. İbrahim Güran YUMUŞAK (Ph.D.) Dilan GÜRÇEK
Tartışma ve Yorum / <i>Discussion and Interpretation</i>	Bulguların değerlendirilmesinde ve sonuçlandırılmasında sorumluluk almak / <i>Taking responsibility in evaluating and finalizing the findings</i>	Prof. Durmuş Çağrı YILDIRIM (Ph.D.) Prof. İbrahim Güran YUMUŞAK (Ph.D.) Dilan GÜRÇEK
Literatür Taraması / <i>Literature Review</i>	Çalışma için gerekli literatürü taramak / <i>Review the literature required for the study</i>	Prof. Durmuş Çağrı YILDIRIM (Ph.D.) Prof. İbrahim Güran YUMUŞAK (Ph.D.) Dilan GÜRÇEK

Hakem Değerlendirmesi: Dış bağımsız.

Çıkar Çatışması: Yazar çıkar çatışması bildirmemiştir.

Finansal Destek: Yazar bu çalışma için finansal destek almadığını beyan etmiştir.

Teşekkür: -

Peer-review: Externally peer-reviewed.

Conflict of Interest: The author has no conflict of interest to declare.

Grant Support: The author declared that this study has received no financial support.

Acknowledgement: -