

## **Analysing of the Relation Between Stock Markets and Economic Growth in Turkey by ARDL Bound Test**

**Umut Burak GEYİKÇİ**

Manisa Celal Bayar University, Faculty of Business Administration  
Muradiye Kampüsü, Manisa, Turkey  
[orcid.org/0000-0002-4285-2151](https://orcid.org/0000-0002-4285-2151)  
[umutburak.geyikci@cbu.edu.tr](mailto:umutburak.geyikci@cbu.edu.tr)

### **Extensive Summary**

#### **Introduction**

Turkish Capital Markets began to strengthen its financial structure from the middle of the 1980s with neoliberal economic policies and the opening of the Istanbul Stock Exchange (BİST) in 1986. Capital markets, which started to accelerate in the 2000s, after the 1990s, which are often referred to as lost years in many studies, have not yet reached the depths that exist in developed countries.

While capital markets facilitate the mobilization of savings and transform it into the capital required for economic growth, changes in the real sector are also affecting capital markets significantly. Growth in the capital markets, while reducing the cost of access to funds needed for investments, also supports the increase in foreign capital flows and existing fund sizes. From this point of view, it is possible to come across many studies investigating the relationship between economic growth and financial development.

From the perspective of the relationship between financial development and economic growth; Robinson (1952) argues that economic growth is a trend toward financial development, while Schumpeter (1911) points out that financial development is a trend toward economic growth (Özcan and Arı, 2011). The studies carried out in the literature are basically based on four different hypotheses. The first of these; Financial development has a high impact on economic growth (Patrick, 1966), second, economic growth is an important influence on financial development (Robinson 1952), the third one is the mutual interaction between financial development and economic growth (Lewis, 1954), And the last is Lucas (1988), Meier and Seers (1984), Stern (1989) who assert that there is no interaction between them.

In order to measure the relationship between financial development and economic growth in the literature; Different measurement materials such as national income, M1, M2 and M3 money supply, bank loans, gross domestic product, private sector loans, total lending, stock market capitalization rate and their ratios to each other were used. In

this study, in order to measure the effect of economic growth on the stock market, GDP, private sector loans, stock market capitalization rate, M2 broad money supply, and the ratio of total foreign trade variables to GDP are used like Gökdeniz et al. (2003), Altunç (2008), Ghildiyal et al.

Economic growth refers to the increase in goods and services produced by an economy (Onwumere et al., 2012). In order for economic growth to take place, foreign trade must also develop. Firmalar should find new customers with traditional and modern methods in global markets and should contribute to economic growth and increase the domestic income (Metin, 2016). An increase in the per capita income of citizens (investors) can force investors to invest in long-term financial assets in many respects through the financial system mechanism that leads to material improvements. This relationship between financial development and economic growth has been intensively studied in recent years (Okeke and Acha, 2017).

The aim of this study is to test the hypothesis that the economic growth of Schumpeter (1911) is influential on financial development, by determining the relationship between the various variables of the economy and stock capitalization rate. Investors looking for diversification opportunities in the case of such an impact on the analysis will be able to better predict the investments they will make in stock markets with the help of economic indicators in developing countries such as Turkey. On the other hand, as a result of the economic growth, the increase in the per capita income of the citizens is thought to lead them to make long term investments through the stock market. In this context, the ARDL boundary test approach used in the study was used to investigate the relationship between financial development and economic growth in terms of Turkish economy.

### **Material and Method**

In the study, five variables were used to measure the effect of economic growth on the stock market. The stock capitalization rate represents the stock market, while the other four variables represent economic growth. The variables used in the study are;

KBGSYH; Per capita gross domestic product

GPGSYH; The ratio of M2 wide money supply to gross domestic product

HSPGSYH; This ratio, used as the "development indicator of the stock market", is the ratio of the stock market capitalization value to the gross domestic product.

KRDGSYH; This rate, which is regarded as a sign of the banking sector, is the ratio of private sector loans to gross domestic product.

DTGSYH; This ratio, which is considered as the indicator of the openness of the economy, is the ratio of total foreign trade (export + import) figures to gross domestic product.

Logarithms of all series should be taken to reduce the effect of outliers by turning the series into linear ones (Türe ve Akdı, 2005; Ayvaz Kızılgöl, 2011). The time series used in the study covers the period from 1986 to the end of 2016, the year in which the Stock Exchange Istanbul was active, with annual values. From the obtained data; The figures for KBGSYH, GPGSYH and KRDGSYH were taken from the World Bank data pool, foreign trade figures were taken from the Turkish Statistical Institute

(TURKSTAT) and M2 wide money figures were taken from the Central Bank of the Republic of Turkey (CBT).

In line with the research objectives, the following model has been established;

Financial development = f (KBGSYH) .....

The econometric form of the above model is formed as follows;

$$HSPGSYH_t = \alpha + \beta_1 GPGSYH_t + \beta_2 KBGSYH_t + \beta_3 KRDGSYH_t + \beta_4 GTGSYH_t + \epsilon_t$$

In the equation given above;  $\alpha$  is the intersection point and  $\beta_1$ - $\beta_4$  are the coefficients of the explanatory variables.

### Conclusion and Discussion

In this study, short and long term relations between the economic growth and financial development of Turkey in the period from 1986, the year of the establishment of the Istanbul Stock Exchange, to the year 2016 with the aim of finding out the effect of economic growth on financial development. This period is the period of development and growth of capital markets in terms of Turkey. When we performed the ADF and KPSS unit root tests for the data in the study, while some data were found to be stationary at the level 1 and some were found to be stationary at the level. The ARDL bound test, which is the most appropriate method, used in such cases, was applied to data set. In contrast to the studies of Minier (2003) and Rioja and Valev (2004), all results, which are similarly to Shahbaz et al. (2008), Goldsmith (1969), Levine and Zervos (1998), Boubakari and Jin (2010), Ghildiyal et al. (2015), show that financial development and economic growth has positive correlation namely they are cointegrated and balanced in the long term.

When long-term causality relations are examined, there is a significant causality relationship between economic growth and money supply and stock market development, and there is no long-term causality between private sector loans and foreign trade figures and stock market development. According to the results of short-term error correction (ECT), only 38.6% of the short-term deteriorated relations are in balance again in the next period.

From the perspective of the short-run Granger Block Exogeneity Walt Test, there is a two-way causality towards the development of the stock market in terms of gross domestic product and money. Similarly, there is a one-way causality from private sector loans to total external trade, while there is a two-way causality between money supply and total foreign trade. While there is no causality affecting the total loans in the short term, there is also a one-way causality relationship between the GDP and the broad money supply. The results obtained do not support the hypothesis by Schumpeter (1911) in the sense that economic growth is a correct flow of financial growth. In conclusion, the cointegrated variables are closer to the views of Lewis (1954) instead of Schumpeter (1911) and stock market capitalization has bilateral interaction with economic growth rather than a one-way flow from economic growth to stock market capitalization. This study was carried out in Turkey. If the similar study can be applied together for all emerging markets, it may be more beneficial for investors to see the diversification opportunities in the emerging markets.