

STOCK MARKET DEVELOPMENT AND ECONOMIC GROWTH: EVIDENCE FROM A SET OF EMERGING MARKET COUNTRIES

Ayhan KAPUSUZOGLU¹, Nildag Basak CEYLAN²

¹ Ankara Yildirim Beyazit University, Turkey, akapusuzoglu@ybu.edu.tr

² Ankara Yildirim Beyazit University, Turkey, nbceylan@ybu.edu.tr

Abstract: *The purpose of this study is to analyze the relationship between stock market and economic growth for a set of emerging market countries. In the study, both country groups in Asia (China, India, Korea and Taiwan), in Eastern Europe (Czech Republic, Poland, Russia and Turkey), in Latin America (Argentina, Brazil, Chile and Mexico,) and in Middle East and North Africa-MENA (Israel and South Africa) are analyzed. The period that is studied is between 30/06/1997 - 30/06/2016 and the data used are quarterly. The result of the Johansen Co-integration test suggests that there is a long-run relationship between stock market index and GDP on country-fgroup basis. The results of the Granger causality test results show that there is a bi-directional causality relationship on the basis of Asian, East European and Latin country groups, but in the MENA country group, uni-directional causality is observed from economic growth to stock market.*

Keywords: Stock market, Economic growth, Cointegration, Causality.

JEL Classification Codes: G10, O40.

1. INTRODUCTION

The short- and long-term interactions between stock markets and economic growth have been analyzed within developing countries. A strong interaction is expected between the stock markets and the economies of the countries, which serve as barometers in countries and reflect the potential changes that may occur in the economy. By including the funds and other resources owned by domestic and foreign investors into the country market by converting them into portfolio investments in the form of indirect investments, the economy revives the economy and as a result of this situation, this source is transformed into capital firms. This change in capital is reflected in firms through stock markets. On the other hand, the cash flow obtained by the firms with these resources and their investments provides an important revival of the economy by financing both the dividend payments and other investments.

There are three different channels that demonstrate the interaction between stock markets and economic growth (Demirguc-Kunt, 1996; Pan & Mishra, 2018). First of all, if investors obtain a high level of return on the stock market, they will expand their existing investments in the market. However, this high level of return resulting from the fact that investors consume a greater portion of their income as a result of carrying their future consumption to present and thus reduce the accumulation of resources in the economy. Secondly, the high level of liquidity of the stock markets is very attractive for investors because the uncertainty situation is decreasing. However, this also affects the level of savings resulting from the consumer's future delays due to future uncertainty.



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In the last channel of interaction, investors in a stock market with high liquidity are focusing on short-term returns with a myopic approach. This situation provides a fast and cost-free return for the investors and in the long term it can cause harmful effects to the economy.

Financial markets also improve savings and knowledge processes. Ndikumana (2003) states that stock markets can promote high-level investments because they provide information on the returns of an investment. Through the expansion of funds for profitable investment projects, the quality of capital accumulation and investments will be increased. Stiglitz (1985) states that stock markets can promote economic growth through pressure on corporate governance, often in the form of a threat of inheritance. Therefore, well developed stock markets increase the profitability through the survival of the stronger in the real sector.

Robinson (1952) states that contrary to the views expressed, economic growth is a driving force in the development of financial sectors. Similarly, Van Wijnbergen (1983) and Buffie (1984) demonstrates the negative impact of financial development on economic growth. Loan sources provided for domestic producers are reduced by financial intermediaries. The competition between financial intermediaries and domestic firms leads to credit shortages and this leads to a decrease in investments and production. Despite these unfavorable situations, stock markets can provide information on the profitability of any investment and allow high-level investments by utilizing the necessary funds. Thus, it paves the way for high return on investments, channeling funds to profitable investments and capital formation (Dolar & Meh, 2002).

One of the major topic in economics is on whether financial development causes economic growth or it is a consequence of increased economic activity. To analyze this issue, this study examines the relationship between stock market and economic growth for a set of emerging market countries. In literature, it is possible to find a set of studies which examine this effect both for the developed and developing markets. Among the studies, Thornton (1995) examines 22 developing economies and he finds that financial deepening promoted growth. Goldsmith (1969) finds a significant effect between financial development and economic growth. Spears (1991) reports that for the Sub-Saharan African countries, financial intermediation cause economic growth. Ahmed & Ansari (1998) find similar results for three major South-Asian economies. Bayar et al. (2014) investigates the relationship between stock market development and economic growth for the case of Turkey. Their findings show that there exists a long run relationship between economic growth and stock market capitalization.

In this study, short and long term relations between stock markets and economic growth are analyzed. In this study, it is evaluated that it is an important contribution to the field literature by providing empirical findings and providing a detailed comparison and inference by presenting the developing countries. In the following sections, data set and methodology, empirical findings and conclusion part are presented.

2. DATA SET AND METHODOLOGY

In the study, both country groups in Asia (China, India, Korea and Taiwan), in Eastern Europe (Czech Republic, Poland, Russia and Turkey), in Latin America (Argentina, Brazil, Chile and Mexico,) and in Middle East and North Africa (Israel and South Africa) are analyzed. As a proxy of stock market development, the stock market indices of Argentina (Buenos Aires Merval Index), Brazil (Brazil Bolsa de Valores de Sao Paulo –Bovespa), Chile (Chile Santiago Indice General de Precios de Acciones), China (Shangai Composite Index), Czech Republic (Prague PX Index), India (Bombay SE Sensitive Index), Israel (Tel Aviv Maof-35 Large Cap Index), Korea (KOSPI), Mexico (Mexico Indice de Precios y Cotizaciones (IPC)), Poland (Warsaw 20-Share Composite), Russia (Russia MICEX Composite), South Africa (FTSE/JSE All-Share Index),

Taiwan (Taiwan Capitalization Weighted Index) and Turkey (Borsa Istanbul National 100 Price Index) and GDP data of each of the country are included in the study. The study covers the period between 30/06/1997 - 30/06/2016 and the data used are quarterly. The short and long-term relationships between stock markets and economic growth in terms of the country groups are analyzed using Johansen (1988; 1991) Cointegration Test and Granger Causality (1969).

3. EMPIRICAL FINDINGS

Before analyzing the short- and long-term relationships between the variables and before the basic analyzes are applied, it is necessary to ensure that the data for the variables are suitable to analyze, in other words, the variables should be stable at the same level. In this direction, as a first step, unit root tests are applied to all stock indices as well as the GDP data. The results of Augmented Dickey Fuller (ADF, 1979) and Philipps Perron (PP, 1988) test results of the country groups are reported in Tables 1.

Table 1. ADF (Augmented Dickey Fuller) and Philipps Perron (PP) unit root test results of the country groups

| | ADF (Level) | | PP (Level) | |
|--------------------------------|-------------|---------------------|------------|---------------------|
| | Intercept | Trend and Intercept | Intercept | Trend and Intercept |
| MENA Countries | | | | |
| Stock | -11.907*** | --11.929*** | -11.907*** | --11.928*** |
| GDP | -10.080*** | -10.122*** | -10.050*** | -10.090*** |
| Latin Countries | | | | |
| Stock | -15.435*** | --15.417*** | -15.350*** | --15.331*** |
| GDP | -5.237*** | -5.378*** | -15.215*** | -15.209*** |
| Asian Countries | | | | |
| Stock | -16.049*** | --16.022*** | -16.648*** | --16.608*** |
| GDP | -4.432*** | -4.798*** | -5.983*** | -5.946*** |
| East European Countries | | | | |
| Stock | -15.694*** | --15.667*** | -15.622*** | --15.592*** |
| GDP | -4.039*** | -4.037*** | -6.872*** | -6.064*** |

Mac Kinnon (1996) one-sided p-values.
 *** denotes the significance level at 1%.

The results of ADF and PP reported in Table 1 shows that all variables are stable at the level. In order to examine the long-term co-integration relationship Johansen Co-integration test is applied. The results of the test are reported in Table 2.

Table 2. Johansen cointegration test results for a set of country groups

| Hypothesized | Eigenvalue | Trace Statistics | 5% Critical Value | Probability |
|---|------------|----------------------|-------------------|-------------|
| MENA COUNTRIES | | | | |
| LAG=1 (Schwarz Information Criterion, max lag 4) | | | | |
| None | 0.343 | 113.565*** | 15.494 | 0.0001 |
| At most 1 | 0.292 | 51.216*** | 3.841 | 0.0001 |
| Hypothesized | Eigenvalue | Max-Eigen Statistics | 5% Critical Value | Probability |
| None | 0.343 | 62.348*** | 14.264 | 0.000 |
| At most 1 | 0.292 | 51.216*** | 3.841 | 0.000 |
| LATIN COUNTRIES | | | | |
| LAG=3 (Schwarz Information Criterion, max lag 4) | | | | |
| None | 0.251 | 136.627*** | 15.494 | 0.0001 |
| At most 1 | 0.157 | 50.719*** | 3.841 | 0.0001 |
| Hypothesized | Eigenvalue | Max-Eigen Statistics | 5% Critical Value | Probability |
| None | 0.251 | 85.910*** | 14.264 | 0.000 |
| At most 1 | 0.157 | 50.717*** | 3.841 | 0.000 |
| ASIAN COUNTRIES | | | | |
| LAG=3 (Schwarz Information Criterion, max lag 4) | | | | |
| None | 0.220 | 134.633*** | 15.494 | 0.0001 |
| At most 1 | 0.185 | 60.833*** | 3.841 | 0.0001 |
| Hypothesized | Eigenvalue | Max-Eigen Statistics | 5% Critical Value | Probability |
| None | 0.220 | 73.800*** | 14.264 | 0.000 |
| At most 1 | 0.185 | 60.833*** | 3.841 | 0.000 |
| EAST EUROPEAN COUNTRIES | | | | |
| LAG=3 (Schwarz Information Criterion, max lag 4) | | | | |
| None | 0.259 | 116.977*** | 15.494 | 0.0001 |
| At most 1 | 0.090 | 28.194*** | 3.841 | 0.0001 |
| Hypothesized | Eigenvalue | Max-Eigen Statistics | 5% Critical Value | Probability |
| None | 0.220 | 73.800*** | 14.264 | 0.000 |
| At most 1 | 0.185 | 60.833*** | 3.841 | 0.000 |

*** denotes the significance level at 1%.

The findings show that there is a long-run relationship between stock market index and GDP on country-group basis. Next, Granger Causality test is applied to examine the short-run causality relationship. The test results are shown in Table 3.

Table 3. VECM Granger causality/block exogeneity wald test results for a set of country groups

| MENA COUNTRIES | | | |
|----------------------------------|-----------|----|--------|
| Dependent Variable: STOCK | | | |
| Independent Variables | Chi-Sq | df | Prob. |
| GDP | 9.907*** | 1 | 0.0016 |
| Dependent Variable: GDP | | | |
| Independent Variables | Chi-Sq | df | Prob. |
| Stock | 0.597 | 1 | 0.439 |
| LATIN COUNTRIES | | | |
| Dependent Variable: STOCK | | | |
| Independent Variables | Chi-Sq | df | Prob. |
| GDP | 17.602*** | 3 | 0.0005 |

| Dependent Variable: GDP | | | |
|----------------------------------|---------------|-----------|--------------|
| Independent Variables | Chi-Sq | df | Prob. |
| Stock | 30.307*** | 3 | 0.000 |
| EAST EUROPEAN COUNTRIES | | | |
| Dependent Variable: STOCK | | | |
| Independent Variables | Chi-Sq | df | Prob. |
| GDP | 19.606*** | 3 | 0.0002 |
| Dependent Variable: GDP | | | |
| Independent Variables | Chi-Sq | df | Prob. |
| Stock | 60.723*** | 3 | 0.000 |
| ASIAN COUNTRIES | | | |
| Dependent Variable: STOCK | | | |
| Independent Variables | Chi-Sq | df | Prob. |
| GDP | 18.795*** | 3 | 0.0003 |
| Dependent Variable: GDP | | | |
| Independent Variables | Chi-Sq | df | Prob. |
| Stock | 45.457*** | 3 | 0.000 |

*** denotes the significance level at 1%

The test results show that there is a bi-directional causality relationship on the basis of Asian, East European and Latin country groups, but in the MENA country group, uni-directional causality is observed from economic growth to stock market. The results suggest that the real sector and the financial markets are the determinants of the country groups. These country groups are interacting with each other except for the MENA countries. In addition to this, only for MENA countries as the demand-driven hypothesis suggests the growth of the real sector contributes to the growth of the financial markets.

4. CONCLUSION

The contribution of the stock markets to the national economies effective functioning of the markets and the interaction of the source formations in the economy both to the return and to the capital base of the firms reveal the importance of the study. In this study, short and long-term interactions between stock markets and economic growth have been analyzed within developing countries. Due to the effective functioning of the stock markets, the contribution of them to the countries' economies and the formation of the capital base both for the returns and the firms in the economy are in the same way. In this study, short and long-term interactions between stock markets and economic growth have been analyzed within developing countries.

The findings show that there is a long-run relationship between stock market index and GDP on country-group basis. The test results show that there are bi-directional causality relationships on the basis of, Asian, East European and Latin country groups, but in the MENA country group, uni-directional causality is observed from economic growth to stock market. The results suggest that the real sector and the financial markets are the determinants of the country groups. These country groups are interacting with each other except MENA countries. In addition to this, only for MENA countries as the demand-driven hypothesis suggests the growth of the real sector contributes to the growth of the financial markets. The findings can be stated that the financial development provided by stock markets contribute to the economic growth and that the resource formation, which is also caused by the growth in the economy, has the potential to affect the financial system and markets.

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