Study on the correlation between the development of the capital market and the economic growth by groups of countries

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Abstract

The correlation between financial market development and economic growth was and is still an intensively studied theme from the theoretical and empirical point of view. Because of this fact, the main goal of this article is to theoretically and empirically discover the relationship between the financial markets and economic growth using panel regression, OLS method. The database used is composed from some variables for 30 countries during the period 2006-2016 and the frequency of the data is annual.

Keywords
economic growth, financial markets development, capital market, banking market, panel regression

JEL Classification: C33; E51

Introduction

The paper proposes an analysis of the concepts of economic growth and capital market. More specifically, we will study the correlation between them for certain groups of developing and developed countries. The purpose of the research is to analyze whether there is a positive relationship between economic growth (represented by GDP) and the capital market (represented by market capitalization and / or transaction value).
Lately, the relationship between financial sector development and economic growth has received a lot of attention. The major objectives of an economy, such as stability, growth and sustainable development, are closely linked to the ability of financial systems to support such objectives. Thus, the main objective of the financial system in an economy is to ensure long-term economic growth through efficient financing of the economy.

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Generally, developing markets are characterized by financial systems based mainly on banks, while in developed countries financial systems are based on the capital market.

The importance of economic growth lies in the fact that it helps to achieve macroeconomic objectives such as: poverty reduction, falling unemployment, improving public services (higher economic growth leads to higher tax revenues, even if tax rates remain the same). This is measured by a small number of indicators including: GDP, GNP. The capital market also has an important role in the economy. This market ensures the movement of capital from those who save money to those seeking funds for development, through the transfer of financial instruments and their transformation into liquidity, and last but not least, it has a non-inflationary role because it attracts available capital.

The paper is structured in three chapters. The first chapter presents the economic concepts of economic growth and the capital market. The second chapter presents the main articles of recent years that have addressed this theme and which constitute the stage of knowledge. The last part of the paper illustrates an econometric regression-based panel study using the OLV (Ordinary Least Squares) estimation method in the Eviews program.

Literature review

Charkraborty and Ray (2006) suggest that the structure of the financial system is not important for growth, it is essential that the financial system solve the agent problem. The problem of moral hazard encountered in companies can be solved by banking monitoring. Therefore, firms with high debt levels should rely on this banking monitoring, while firms with substantial net worth should seek financing on the capital market.

For developing countries, Levine (2002) argues that a bank-based financial system leads to a faster growth of the economy than the capital-oriented financial system. Generally, banking systems are very important for developing countries, and for those developed the capital-based system.

Although there is no generally accepted view of the type of financial system that should exist in a country (bank oriented or capital market oriented), I believe that the existence of a balanced financial system can contribute to sustainable economic growth.

In order to argue these issues, a study by Simion D., et. Al. (2015) used a multiple regression model. The variables included in the model are: as the dependent variable - GDP growth, and as independent variables - stock market capitalization, turnover of traded shares, loan rate, domestic credit and money supply growth rate. The analysis was made in Romania between 1994 and 2012, concluding that there is a direct relationship between GDP growth and market capitalization on the one hand, and between GDP growth and lending to the banking sector on the other.

Meanwhile, other studies have begun to suggest that the impact of funding on growth differs according to the level of financial development. Rioja and Valev (2004) reproduced the work of Levine et al. (2000), but divided the sample into three regions with low, medium and high financial development. Thus, they noticed that the impact of rising financial growth was small in the low-growth, but strong, region of the middle region. Seven and Yetkiner (2016) divided the country sample according to the country's income

level. They analyzed the separate impact of the banking and stock market development and found that banking development is beneficial for growth in middle-income and low-income countries, but damaging to those with high incomes. On the contrary, stock markets favor growth in middle-income and high-income countries. Loayza and Ranciere (2006) attempted to correlate the financial development literature with the financial crisis literature, which states that credit indicators can be used as predictors of crises and therefore have a negative influence on economic growth.

Beck et al. (2014) used a new financial development measure to separate the effects of financial and non-brokerage intermediation (such as market formation, consultancy and insurance) on growth and growth volatility. Their main result is that financial intermediation speeds up economic growth, while reducing long-term volatility, but these effects become weaker when considering a shorter and more recent time horizon. However, non-brokerage activities do not affect long-term growth or volatility and may increase medium-term volatility.

Another paper analyzes whether the link between stock markets, banks, and economic growth is becoming more obvious as they are considered more homogeneous groups of countries. Dynamic Time Generation Dynamic Panel (GMM) with Windmeijer Correction (2005) uses data from high and low European and non-European countries as well as middle and upper middle income countries averaging five and three years. The results indicate that the link between financial development and economic growth depends on countries' economic growth. Empirical results show that, while the size of private sector credit and capital market liquidity have a strong positive impact on the economic growth of the MIC, only capital market liquidity strongly and positively influences the growth of HICs. It is also noted that bank credits increase growth for both upper and lower MICs, but liquidity on the capital market only has a strong impact on raising MICs. For non-European HICs, bank credit is not robust, and liquidity on the capital market is marginally significant. In the case of European HICs, stock market liquidity is not a strong determinant of growth, as opposed to bank lending.

In a study by Mishra and Narayan (2015), the empirical findings from studies conducted both on chronological series and on cross-sections support the findings that the financial system is stimulating economic growth. The model is applied to a set of six categories of countries. These are the "all countries" (43 countries), the "high income" group (19 countries), the "middle income" group (19 countries), the developing countries (21 countries) East (13 countries) and the European group (15 countries). The data are also annual for the period from 1986 to 2012.

Table no. 1: Countries used in the study

Toate țările		Țări în curs de dezvoltare	Țări europene	Țări cu venituri ridicate	Țări cu venituri medii	Țările OCDE	Estul Asiei
Argentina Australia Austria Belgia Brazilia Canada Chile Chna Cote d"lvoire Danemarca Egipt Finlanda Franța Ungaria India Indonesia Italia Japonia Iordania Kenya Korea Luxemburg	Malaysia Mauritius Mexico Maroc Olanda Noua Zeelandă Norvegia Pakistan Peru Filipine Portugalia Spania Sri Lanka Suedia Tailanda Turcia Regatul Unit SUA Venezuela	Argentina Brazilia Chile China Cote d"lvoire Egipt India Indonesia Iordania Kenya Malaysia Mauritius Mexico Maroc Pakistan Peru Filipine Sri Lanka Tailanda Venezuela	Austria Belgia Danemarca Finlanda Franța Ungaria Italia Luxemburg Olanda Norvegia Portugalia Spania Suedia Turgia Regatul Unit	Australia Austria Belgia Canada Danemarca Finlanda Franța Italia Japonia Korea Luxemburg Olanda Noua Zelandă Norvegia Portugalia Spania Suedia Regatul Unit SUA	Argentina Brazilia Chile China Egipt Ungaria Indonesia Iordania Malaysia Mauritius Mexico Maroc Peru Filipine Sri Lanka Tailanda Turcia Venezuela	Australia Austria Belgia Canada Danemarca Finlanda Franța Ungaria Italia Japonia Korea Luxemburg Mexic Olanda Noa Zeelandă Norvegia Portugalia Spania Suedia Turcia Regatul Unit SUA	Australia China Indonesia Japonia Korea Malaysia Noua Zeelandă Pakistan Filipine Sri Lanka Tailanda

Source: S. Mishra, P. K.Narayan, A nonparametric model of financial system and economic growth, International Review of Economics and Finance, 2015

The variables used in the panel date model are:

Y - GDP growth

X - Inflation; gross fixed capital formation; volume of transactions and a variable of the financial system (market capitalization, domestic credit from the banking sector, domestic credit from the private sector, traded shares).

Evidence from the stock exchange suggests that it has a statistically significant and positive effect on GDP growth over a certain period. It is important to note that the negative effect of the banking sector and the positive effect of the stock market on GDP growth depend on the banking sector and on the stock market variables. This finding is unique in a way that nowadays political decision-makers can control the development of the banking sector so as

to have no negative effects on GDP growth. Similarly, policy-makers can control the evolution of stock market variables so as to exert a positive effect on GDP growth.

Database and methodology

1.   Methodology

The theoretical exposure of the relationship between economic growth and capital market development was the basis for building a framework for analysis on this issue. The econometric study is based on a panel data analysis using the OLS (Ordinary Least Squares) estimation method in the Eviews 9 program.

According to Brooks (2008), panel analysis will include information both in time series and in samples (individuals, countries, firms, etc.). Thus a regression of this type occurs in the following form:

$$y_{it} = \alpha + X_{it}^{`} * \beta + u_{it}$$ where i = 1, …. , N și t = 1, … , T

The analysis of the econometric model will begin with a descriptive analysis. Thus, for the group of developing and developed countries I will identify indicators of the central trend (average and median), variance indicators (standard deviation) and distribution patterns (skewness and kurtosis).

Next I will present the econometric analysis of the model. We first identified the regression without any effect that includes all the variables for a general picture. We also ran the correlation matrix to observe the relationship between the variables. For the estimation of the data panel, there are generally two categories of approaches that I will use in research, namely fixed-effect models and random-effects patterns (individual, time, or both). If, after applying these tests, both fixed and random effects are identified, the main method used to decide between the two models is the Hausman test. The Hausman test detects endogenous regressions (predictor variables) in a regression model. Endogenous variables have values that are determined by other variables in the system. With endogenous regressions in a model, least squares estimators will fail because one of the OLS assumptions is that there is no correlation between a predictive variable and the error term. Estimators of instrumental variables can be used as an alternative in this case. However, before we can decide the best regression method, we first have to figure out whether the predictor variables are endogenous. This is shown by the Hausman test.

2.   Database

The data used in this study, together with the units of measurement, are the following:
- Dependent variable (Y): GDP value, expressed in US dollars;
- Explanatory variables (Xi) are represented by capital market variables, respectively market capitalization and transaction value (expressed in US dollars) and other macroeconomic variables such as inflation (%) and domestic credit (% of GDP)

The analyzed period is 11 years, between 2006 and 2016, over 30 countries around the world. Totally identified 330 observations, divided into: 198 observations for the group of developing countries and 132 observations for the group of developed countries. The countries included in the analysis are presented in the following table. The framing was based on the knowledge quoted articles in Chapter 2 and, moreover, they were chosen based on the availability of data on the indicators selected for analysis.

Table no. 2: Categories of countries

Tari in curs de dezvoltare	Tari dezvoltate
Brazilia	Australia
Chile	Austria
China	Belgia
Grecia	Germania
Ungaria	Spania
Indonesia	Franța
India	Japonia
Iran	Korea
Sri Lanka	Luxembourg
Mexic	Olanda
Mauritius	Norvegia
Malaysia	Portugalia
Peru	
Filipine	
Polonia	
Slovenia	
Tailanda	
Turcia	

Source: own processing

The data and information from this study is taken from the EUROSTAT and WORLD BANK publications. The data was processed by logarithm in base 10 using the functions in Excel. The logarithm method I encountered in the quoted studies was used to align the database.

Results

1. **Descriptive analysis:**

Table no. 3: Results of descriptive statistics

	Developing countries				
	GDP	MRK_CAP	ST	DC	INFL
Mean	5.51	5.147	4.621	5.264	5.06
Median	5.5	5.277	4.74	5.362	3.865
Std. Dev.	0.644	0.738	1.096	0.692	5.019

Relative St. Dev	0.117	0.143	0.237	0.131	0.992
Skewness	-0.217	-0.125	-0.103	0.244	2.946
Kurtosis	3.323	2.58	2.822	3.532	16.518
Jarque-Bera	2.411	1.97	0.61	4.288	1793.992
Probability	0.3	0.373	0.737	0.117	0
Developed countries					
Mean	5.909	5.731	5.42	5.959	1.67
Median	5.948	5.896	5.886	6.016	1.748
Std. Dev.	0.528	0.564	1.156	0.578	1.242
Relative St. Dev	0.089	0.098	0.213	0.097	0.744
Skewness	-0.502	-0.274	-1.617	-0.405	0.057
Kurtosis	2.864	1.874	5.322	2.883	2.46
Jarque-Bera	5.639	8.622	87.195	3.68	1.677
Probability	0.06	0.013	0	0.159	0.432

Source: own processing in Eviews

The relative standard deviation shows to what extent the data set values are grouped or spread over the average. For both developing and developed countries, the values of the variables are grouped around the average except for inflation that is broadly spread.

For developing countries, we see negative values of skewness indicating a negative asymmetry for GDP variables, stock capture and transaction value. For home loans and inflation, asymmetry is positive and very pronounced in the case of inflation. Regarding the kurtosis indicator, the distribution tends to be normal for GDP variables, domestic credits, market capitalization and the value of transactions having values close to 3. In contrast, on inflation, the distribution is leptocurtic (k = 16,51), which means high probabilities for extreme values.

For developed countries, skewness indicator values show that asymmetry is a negative one for GDP variables, stock capture, transaction value, and domestic credit. Inflation has a slight positive asymmetry, with skewness being very close to 0. From the point of view of the kurtosis indicator, the distribution tends to be platictic for the GDP variables, stock market capitalization, domestic credits and inflation, with values spread over a larger range

around the average. However, for the explanatory variable transaction value, the distribution is a leptocurtic one (k = 5,32) which also means that there are high probabilities for extreme values.

2. Econometric analysis

Regarding the results of regression testing, we noticed the existence of a large value of the R square coefficient, which suggests that the data are not stationary. However, the econometric analysis of this study is based on panel regression and the focus is not so much on stationarity as in the case of multiple regressions. In addition, this finding also stems from the use of a relatively limited series of data compared to those found in specialty studies.

For developing countries, the result of the fixed effects and random effects are as following:
- testing of individual and time fixed effects: the model presents individual and time fixed effects.

```
Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section and period fixed effects
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Effects Test	Statistic	d.f.	Prob.
Cross-section F	297.513682	(17,167)	0.0000
Cross-section Chi-square	681.746687	17	0.0000
Period F	4.124870	(10,167)	0.0000
Period Chi-square	43.706363	10	0.0000
Cross-Section/Period F	190.119937	(27,167)	0.0000
Cross-Section/Period Chi-square	684.587623	27	0.0000

Figure no. 1: Testing fixed effects
Source: own processing in Eviews

• testing individual and time random effects: the model presents individual random effects.

```
Lagrange Multiplier Tests for Random Effects
Null hypotheses: No effects
Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided
     (all others) alternatives
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	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	744.3923 (0.0000)	3.344419 (0.0674)	747.7367 (0.0000)
Honda	27.28355 (0.0000)	-1.828775 --	17.99925 (0.0000)
King-Wu	27.28355 (0.0000)	-1.828775 --	15.15312 (0.0000)
Standardized Honda	30.57738 (0.0000)	-1.687089 --	16.15311 (0.0000)
Standardized King-Wu	30.57738 (0.0000)	-1.687089 --	12.99903 (0.0000)
Gourierioux, et al.*	--	--	744.3923 (< 0.01)

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*Mixed chi-square asymptotic critical values:
          1%         7.289
          5%         4.321
         10%         2.952
```

Figure no. 2: Testing random effects
Source: own processing in Eviews

To decide which model is preferred I apply Hausman test and the result is that the model with individual fixed effects is preferred.

```
Dependent Variable: GDP
Method: Panel Least Squares
Date: 05/05/18   Time: 17:59
Sample: 2006 2016
Periods included: 11
Cross-sections included: 18
Total panel (balanced) observations: 198
```

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.433276	0.140747	17.28825	0.0000
MRK_CAP	0.154461	0.020483	7.540982	0.0000
DC	0.434817	0.032360	13.43693	0.0000
INFL	-0.001444	0.000961	-1.502984	0.1347

Effects Specification

```
Cross-section fixed (dummy variables)
Period fixed (dummy variables)
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R-squared	0.997340	Mean dependent var	5.509797
Adjusted R-squared	0.996862	S.D. dependent var	0.644328
S.E. of regression	0.036095	Akaike info criterion	-3.662471
Sum squared resid	0.217575	Schwarz criterion	-3.147641
Log likelihood	393.5846	Hannan-Quinn criter.	-3.454085
F-statistic	2086.940	Durbin-Watson stat	0.458244
Prob(F-statistic)	0.000000		

Figure no. 3: Testing results
Source: own processing in Eviews

It is noticed that the banking market variable has a slightly higher impact on economic growth. As they are developing countries, they attract predominantly resources from the banking market. The influence and effect of the Central Bank is felt for this category of countries. As it appears in the literature, Levine (2002), for developing countries a bank-based financial system leads to a faster growth of the economy than the capital market-oriented financial system. The results also depend on the level of financial development of the chosen countries. As suggested by Rioja and Valev (2004), the impact of rising financial growth was small in the region with low but strong financial development in the medium region.

The same analysis for the developed countries and the the whole group of countries. The model with fixed individual effects is preferred.

Being developed countries, they, theoretically, draw their resources predominantly from the capital market, but in the present analysis the variable that defines the capital market has become insignificant, the model being explained by the domestic credits - representative for the banking market and inflation. Inflation has an extremely low impact (it is normal for this category), but the lack of an advanced capital market can lead to under-utilization of financial resources. And the developed capital market provides access to foreign capital for domestic industry. This result is not in line with the literature. Motivation may consist of

choosing a group of developed countries that do not contain the United States and the United Kingdom for lack of information about the variables and the chosen period.

Regarding the whole group of countries, the regression includes both developed countries (predominantly based on the banking market according to previous results) and developing countries (where both variables have become significant). Thus, the present result confirms the above. Inflation can say that it has no impact on GDP, and the banking market explains in a higher percentage the economic growth as explained by the stock market capitalization

Conclusions

The paper analyzes the relationship between capital market and economic growth. The study includes 30 countries (developed and developing) over the past 11 years, respectively 2006-2016. The analysis was performed on panel data using fixed and variable effects tests using the OLS estimation method (Ordinary Least Squares) in the Eviews program that was applied for empirical purposes.

In principle, the results are in line with existing theoretical studies. We have found that there is a direct and positive relationship between the evolution of GDP, on the one hand, and the market capitalization and credit of the banking sector, on the other. This means that any increase in the amount of capitalization subsidies and domestic credit will lead to economic development through GDP growth. This is clearly highlighted by the results of the group of developing countries.

Using a simple model, empirical evidence suggests that the development of the stock market independently has a strong positive correlation with economic development. As we have found in the specialized literature, the result reveals an important theory that supports the proposal that the development of the stock market is one of the main drivers of economic growth in the analyzed countries. However, the growth effects of banks and stock markets differ for different savings groups, which means that the link between financial development and economic growth seems to depend on the economic development stages of the countries. In the analysis of the group of developing countries, we have noticed that the banking market has a more significant impact on GDP. This does not mean that the capital market in these countries would not be active, but at the moment there is not enough trust for an investor. He prefers to invest in a safer stock market in which shares can be sold quickly, and the act of sale has a low impact on the stock price, thus retaining his fortune.

According to the articles discussed, I should have found a significant impact of the capital market on growth in developed countries. Instead, from this analysis, the explanatory variables related to this market proved to be insignificant. On the one hand, with regard to the chosen countries, it is clear that we find a weak point because there are not the most important countries like the US and the United Kingdom, for reasons of lack of information over the 11 years. On the other hand, the banking market is also an influential factor for GDP growth. In this context, I believe that causality can be reversed - from financial development to economic growth. According to Patrick (1966), this relationship means deliberate creation of financial institutions and markets, increasing the supply of financial services leading to real economic growth.

From a political perspective, the study suggests that policy efforts should focus on developing the financial sector; promoting financial integration; minimizing government intervention in the financial sector; facilitating the establishment of financial institutions to increase credit to the private sector; creating a favorable legal environment for efficient credit allocation to the private sector; creating reforms to strengthen creditors' rights and strengthen the functioning of stock markets. All these factors help to develop the financial sector and improve the efficiency of resource allocation, allowing for a better functioning of medium and long-term funding for investment.

Private sector development and investment - taking into account private sector initiatives and useful social investments - are key to poverty reduction. Parallel to public sector efforts, private investment, especially in competitive markets, has an extraordinary potential to contribute to economic growth. Private markets are the engine of productivity growth, creating productive jobs and higher incomes. And if the government plays a complementary role in regulating, financing and providing services, private initiative and private investment can help deliver basic services and conditions that empower poor people - by improving health, education, and infrastructure.

Compared to the articles presented, through the econometric study we tried to share the countries in terms of economic development as a whole and not from the point of view of the ventures. The model can be greatly improved by choosing other variables, perhaps more relevant from a macroeconomic point of view, to describe economic growth, and by choosing more significant countries for the capital market. Other variables relevant to economic growth include gross fixed capital formation, private loans, money supply, saving rate. Other developed countries with an influential capital market would be the US and the UK.

References

[1]   Andrieș, A. M. (2009). The importance of capital market in the economy. CES Working Papers, I, (2), available at
        http://www.ceswp.uaic.ro/articles/CESWP2009_I2_AND.pdf
[2]   Anghelache G. (2004) Piața de capital, Caracteristici, Evoluții, Tranzacții. București: Ed. Economică. pg. 13
[3]   Anghelache G. (2009) Piața de capital în context european. București: Ed. Economică
[4]   Baltagi B. H. (2008). Econometric Analysis of Panel Data. Wiley
[5]   Beck, T., Levine, R., Loayza, N., (2000). Finance and the sources of growth, J. Financial Econ. 58 261–300.
[6]   Bell, A., Fairbrother, M., Jones, K. (2016) Fixed and Random effects models: making an informed choice, available at
        https://www.researchgate.net/publication/299604336_Fixed_and_Random_effects_models_making_an_informed_choice#feedback/246979
[7]   Brooks C. (2008). Introductory Econometrics for Finance (2nd edition) p.491

[8]   Calderón și Liu (2002). The direction and causality between financial development and economic growth. Central Bank of Chile Working papers No 184

[9]   Caraganciu, A., Darovanaia, A., Minica, M., Iovv, T. (2005) Piețe de capital. Editura ASE;, available at https://lib.ase.md/wp-content/uploads/publicatii/Publicatii%20Asem_2005/CD_2005/1/Piete%20de%20capital.pdf

[10]   https://www.msci.com/documents/10199/1cf0a2d6-48fa-4c69-b397-b0faa3fc6e5c

[11]   Chmelarova V. (2007). The Hausman Test, and Some Alternatives, with Heteroskedastic Data. Louisiana State University and Agricultural & Mechanical College, available at http://etd.lsu.edu/docs/available/etd-01242007-165928/unrestricted/Chmelarova_dis.pdf

[12]   Christopoulos D. K., Tsionas E. G., (2004) Financial development and economic growth evidence from panel unit root and cointegration tests. Journal of Development Economics 73

[13]   Ductor L., Grechyna D., (2015). Financial development, real sector, and economic growth, International Review of Economics & Finance Vol. 37, pg. 393-405

[14]   Durusu-Ciftci D., Ispir M. S., Yetkiner H., (2017). Financial development and economic growth Some theory and more evidence. Journal of Policy Modeling 39

[15]   Fufa T. și Kim J. (2017).Stock markets, banks, and economic growth: Evidence from more homogeneous panels. International Business and Finance

[16]   Greene W. H. (2008). Econometric analysis (6th ed.), Upper Saddle River, N.J.: Prentice Hall

[17]   Geweke, J., (1982). Measurement of Linear Dependence and Feedback between Time Series.

[18]   Journal of the American Statistical Association 79, 304--24

[19]   Hausman, J. A. *Specification tests in econometrics*. Econometrica 46. pg.1251–1271

[20]   Hîncu, R., Boloocaia, S. (2015) Analiza comparative a dezvoltării piețelor de capital din țările dezvoltate și țările în curs de dezvoltare din UR și Republica Moldova pe baza abordării indicative-funcționale. Journal Economica nr.1 (91), available at http://oaji.net/articles/2015/1425-1431082099.pdf

[21]   Jarrow R. A., (2013). Financial crises and economic growth. The Quarterly Review of Economics and Finance, available at www.elsevier.com/locate/qref

[22]   Kandil M., Shahbaz M., Nasreen S., (2013) The Interaction between Globalization and Financial Development New Evidence from Panel Co-integration and causaliy analysis. MPRA, available at http://mpra.ub.uni-muenchen.de/52148/

[23]   Karimo și Ogbonna (2017). Financial Deepening and Economic Growth Nexus in Nigeria: Supply-Leading or Demand-Following. MDPI

[24]   Kima, D. W., Yub J. S., Hassan M. K.,(2017). Financial inclusion and economic growth in

[25]   OIC countries. Research in International Business and Finance, available at http://dx.doi.org/10.1016/j.ribaf.2017.07.178

[26]   King, R G., Levine, R. (1993). Finance and growth: Schumpeter might be right. Q. J. Econ. 108, 717–737.

[27]   LaPorta, R., Lopez de Silanes, F. Shleifer, A., Vishny, R. W., (1998). Law and finance. J. Polit. Econ. 106, 1113–1155.

[28]   Lakštutienė, A. (2008). Correlation of the Indicators of the Financial system and Gross Domestic Product in European Union Countries. Engineering Economics No 3 (58)

[29]   Levine, R. (2001). Bank-based or Market-Based Financial Systems: Which is Better?, dipsonibil la http://ideas. repec.org/ p/nbr/nberwo /9138.html

[30]   Mishra și Narayan (2015). A nonparametric model of financial system and economic growth. International Review of Economics and Finance 39 175–191

[31]   Nordin, S. și Nordin, N. (2016). The Impact of Capital Market on Economic Growth: A Malaysian Outlook. International Journal of Economics and Financial Issues 6(S7) 259-265

[32]   Nwakuya, M. T., Ijomah M. A. (2017) Fixed Effect Versus Random Effects Modeling in a Panel Data Analysis; A Consideration of Economic and Political Indicators in Six African Countries. International Journal of Statistics and Applications, available at
http://article.sapub.org/10.5923.j.statistics.20170706.01.html

[33]   Obreja Brașoveanu, L.(2013). Creșterea economică. Teorii clasice și moderne. ASE

[34]   Panopoulou, E. (2007). Financial Variables and Euro Area Growth: A Non-parametric Causality Analysis. University of Piraeus, Greece

[35]   Patrick, H.T. 1966. Financial Development and Economic Growth in Underdeveloped Countries.

[36]   Economic Development and Cultural Change 14, 174--89.

[37]   Paun, C. (2010) Finanțe internaționale. Suport de curs. Bucuresti

[38]   Schumpeter, Alois J., (1934). The Theory of Economic Development. Harvard University Press, Cambridge, MA.

[39]   Sergio H.R. da Silva et. Al. (2017).Economic growth, volatility and their interaction What's the role of finance. Economic System 41

[40]   Simion, D., et. Al. (2015). Correlation analysis between structure financial system and economic growth in Romania. Procedia Economics and Finance 32

[41]   Yadirichukwu, E., Chigbu, E.E. (2014) The impact of capital market on economic growth: the Nigerian Perspective. International Journal of Development and Sustainability Vol. 3 No. 4: 838-864 available at https://isdsnet.com/ijds-v3n4-17.pdf

[42]   Wagner, W. (2007). The liquidity of bank assets and banking stability. Journal of Banking and Finance, 31(1), 121–139

[43]   Windmeijer, F. (2005). A finite sample correction for the variance of linear efficient two-step GMM estimators. Journal of Econometrics, 126(1), 25–51

[44]   Zhou, X. (2011) Development of Financial Market and Economic Growth: Review of Hong Kong, China, Japan, The United States and The United Kingdom. International Journal of Economics and Finance Vol. 3, No. 2, available at http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.844.8831&rep=rep1&type=pdf

[45]   Balami, D. S. (2015). The Role of the Capital Market in the Economy, available at https://www.proshareng.com/news/Capital-Market/The-Role-of-the-Capital-Market-in-the-Economy/28259

[46]   GDP in Germany. Focus Economics available at https://www.focus-
        economics.com/country-indicator/germany/gdp

[47]   IMF (2018) Capital markets available at https://blogs.imf.org/category/capital-
        markets/

[48]   Panel data analysis (2017) available at http://www.e-softlearning.com/panel-data-
        analysis-hausman-test/

[49]   The World Bank (2018) Capital markets available at
        http://www.worldbank.org/en/topic/financialsector/brief/capital-markets

[50]   World Economic Situation and Prospects 2018, United Nations publication,
        available at https://www.un.org/development/desa/dpad/wp-
        content/uploads/sites/45/publication/WESP2018_Full_Web-1.pdf