

**Immobilized Effect Some Variable Capital Market to Economic Growth Evidence From
Indonesia**

Teguh Sugiarto

Doctoral student Brawijaya University,
Departemen Accounting Universitas Budi Luhur,
Jl. Ciledug Raya, Petukangan Utara, Pesanggrahan, Jak- Sel,
DKI Jakarta, Indonesia
Email : teguh_cpconsulting@yahoo.com

Holiawati

Lecture at Universitas Pamulang and Doctoral Student at
Doctoral Program in Economics,
Faculty of Economics Trisakti University, Jakarta, Indonesia,

Ahmad Subagyo

Departemen Management at GICI Business School,
Jl. Margonda Raya No. 224, Kota Depok, Jawa Barat.
Telp. 021-7760806 Faks. 021-7760807,

Ludiro Madu

Lecture at UPN Veteran,
Departemen Internasional Relation.
Universitas Pembangunan 'Nasional' Veteran,
Yogyakarta, Indonesia

Amir Mohammadian Amiri

2614 Dwight Way, Berkeley, CA 94720
UC Berkeley, Safe Transportation
Research & Education Center
Email : amiri@berkeley.edu

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Abstract: The focus of this study is to investigate the impact of some capital market variables on economic growth in Indonesia. This study proposes the design of the time-series data model in the form of secondary data from 1993 to 2015. This study uses cointegration analysis and causality relationship as a data analysis method including Augmented Dicker Fuller (ADF) test. Variables used in this study are GDP, Stock Value, Capitalized Market, Transaction Value, Transaction Value of recorded stock. The findings of this study indicate that variables show stationary in first and second difference models, in the long run between variables are not cointegrated, and in the short run do not have a one way or two-way causality relationship between the variables studied. Thus the results of this study provide recommendations on the need for an increase in the availability and adequacy of stock market investment instruments, as this will increase the value of stock transactions in the market.

INTRODUCTION

The capital market in Indonesia has increased very rapidly, especially after the government conducted various regulations in financial and banking including the capital market. Investors in the stock market have realized that securities trading can provide a good return for them, and at the same time provide a great contribution to the economic development of the country of Indonesia. The capital market is an activity that deals with the public offering and securities trading, the go public company relating to the securities it publishes as well as the securities-related institutions and professions. Capital markets provide various investment alternatives for investors in addition to other alternatives of saving in banks, buying gold, insurance, land and buildings. The capital market acts as a liaison between investors and companies or government institutions through the long-term trading of financial instruments such as bonds, Irving J (2005) and McKinnon RI (1973) [2].

The stock market is different from the money market, where the difference lies in the time period or the maturity of the product. Money markets are known as markets that provide short-term borrowing facilities (maturity of less than or equal to one year). The capital market has a long

period of time or more than one year. Another difference lies in its function, in which the money market undertakes to allocate funds effectively and efficiently from those who have excess funds to the deficient party so that there is a balance between the supply and demand for funds. Marketable securities traded on the money market consist of long-term, medium and short-term securities, but transactions are short-term. Types of securities traded in the money market include promissory notes, government treasury notes, government securities, bank draft notes, certificates of deposit, and certificates issued by central banks or certificates of Bank Indonesia. The capital market is a very good economic potential, especially for developing countries like Indonesia. The capital market is able to offer solutions for capital problems that are often faced in the framework of national development. Especially when the effort to obtain additional capital through loans is felt increasingly unprofitable. The capital market is a strategic solution in the economy. Through capital markets those who are over-funded and those who are under-funded can be reunited (economic function). In addition, the capital market also has a function that can provide an opportunity for companies or investors to get rewarded. For developing countries, the capital market offers an opportunity for domestic companies to gain additional capital to expand their business. Especially when now the banking loan is considered less optimum to be implemented.

The development of the capital market in Indonesia is seen from several indicators showing the rapid development in recent years. From the company's point of view, the presence of the capital market facilitates long-term funding needs through the issuance of both stocks and bonds. Nevertheless, in the last 10 years, the utilization of capital market as a source of income for the company is relatively lagging compared to banks. Given the effect of exchange performance that has a significant impact on the national economy, the policies and conditions of the capital market should be given attention. The performance of good exchanges, able to encourage the stability of the national economy. Increased participation of local investors in the capital market can reduce the capital dependence of foreign Schumpeter JA (1911) [3].

LITERATURE REVIEW

The study conducted by Odetayo et al. (2012) [4] and Kolapo et al. (2012) [5] examines the relationship of capital markets and economic growth. In their study, using ordinary least squares

regression gives the conclusion that the capital markets have an impact on economic growth and development in the State during the years 1990-2011. In pp. 4-7 it is found that economic variables have a significant impact on economic growth. In Chinwuba et al. (2011) [6] and Mishra et al. (2010) [7], using a regular regression model investigating how the effects of capital market performance on economic development in Nigeria. In pp. 409 in their research shows that performance on the capital market has a positive effect on economic growth in Nigeria. And using time series data, in the second study there was a degree of efficiency in the capital market on indirect economic growth in India by way of market capitalization, total market turnover, and stock price indices over the period of 1991-2010 quarterly. In their study, there is an indirect relationship of capital market efficiency to the level of economic growth in the State of India.

In a study of the same topic, but in the European and American regions Eichengreen B, Leblang D (2003) [8], the French state in Vazakidis et al. (2009) [9], and Flavia et al. (2010) [10]. Their study uses cointegration test, Granger Causality test and Vector Error Correction Model to see and test the relationship between stock market development and economic growth during 1965-2007. In pp. 7-8, the study found a positive relationship between economic growth in France and in the European countries, against the development of the stock market. Can be drawn conclusions from their research that the capital market can be made as a tool to empower and to achieve the goals of an economic goal, making the gaps that occur in countries in Europe to be lost. The results of this study, making renewal and adding the work of previous researchers, and can expand the study framework and research time, so as to validate or be able to reject the results of previous studies.

TIME AND RESEARCH METHOD

This study was conducted during May 2017 using Country GDP variable data of Indonesia, the value of stock in the market, Capitalized market, transaction value, the value of stock transactions listed on the stock. In this study used econometric method, with time series data analysis technique secondary 1993-2015, namely ADF test to test stationarity. The data test in the study is continued with cointegration and causality method. Data obtained from the Central Bank of Indonesia, the BEI website, from the WDI website.

STATEMENT OF HYPOTHESES

In this study using the basic opinion to be combined into a proposition, so the study conducted on the basis of the hypothesis:

Hypothesis 1

H0: Rejected impact significant in the long term for growth on capital market of the Indonesia economy.

Hypothesis 2

H0: Accepted causality value of stock transactions and economic growth in Indonesia.

RESULT DATA ANALYSIS

The test results on the variables are presented below using the model identified using ADF Test, Cointegration test, Causality Test.

Unit Root Test

Usually unit root tests include tests on data for stationarity or non-stationarity, where the variables used later will be used in regression analysis, test causality and cointegration. Augmented Dickey Fuller (ADF) test is usually used to check whether the time series data or panel data is root of the unit or not. The result of the test will be presented in the form at the level and the first difference in each case. In accordance with the decision rules applied by using the ADF namely; If the absolute value calculated from the statistic tau ($|\tau|$) exceeds the critical value of Dickey Fuller or critical, it will thus reject the proposed hypothesis, in which case the time series is immobile. But on the other hand, when calculated $|T|$, and the value does not exceed the critical tau value, then it does not reject the null hypothesis, in which case it is stated that the time series is not stationary. The following authors present the results of stationary test data in tables 1, 2 and 3, for the variables used in this study

Table 1: Result for Augmented Dickey Fuller test lags 1.

ADF Test Statistics	t statistic	Probability	Level	Critical value
GDP model intercept	-3.388	0.027	1%	-3.769
			5%	-3.004
			10%	-2.642
MCAP model intercept	-0.683	0.831	1%	-3.769
			5%	-3.004
			10%	-2.642
VNOFD model intercept	-0.172	0.707	1%	-3.769
			5%	-3.004
			10%	-2.642
VOFT model intercept	-3.431	0.020	1%	-3.769
			5%	-3.004
			10%	-2.642
VSHM model intercept	-8.186	0.000	1%	-3.788
			5%	-3.012
			10%	-2.646

Source : Proceed by author with Eviews

Table 2: Result for Augmented Dickey Fuller test lags 1 (1st Difference).

ADF Test Statistics	t statistic	Probability	Level	Critical value
GDP model intercept	-5.714	0.000	1%	-3.788
			5%	-3.012
			10%	-2.646
MCAP model intercept	-5.173	0.000	1%	-3.769
			5%	-3.004
			10%	-2.642
VNOFD model intercept	-4.832	0.001	1%	-3.788
			5%	-3.012
			10%	-2.646
VOFT model intercept	-5.915	0.000	1%	-3.808
			5%	-3.020
			10%	-2.650

VSHM model intercept	-13.430	0.000	1%	-3.808
			5%	-3.020
			10%	-2.650

Source : Proceed by author with Eviews

Table 3: Result for Augmented Dickey Fuller test lags 1 (2nd Difference).

ADF Test Statistics	t statistic	Probability	Level	Critical value
GDP model intercept	-5.721	0.000	1%	-3.831
			5%	-3.029
			10%	-2.655
MCAP model intercept	-5.173	0.000	1%	-3.769
			5%	-3.004
			10%	-2.642
VNOFD model intercept	-7.140	0.000	1%	-3.831
			5%	-3.029
			10%	-2.655
VOFT model intercept	-7.272	0.000	1%	-3.831
			5%	-3.029
			10%	-2.655
VSHM model intercept	-14.661	0.000	1%	-3.831
			5%	-3.029
			10%	-2.655

Source : Proceed by author with Eviews

Testing of Cointegration

In principle, testing for Cointegration is similar to testing the linear regression residuals (ϵ_t) for stationarity.

$$X_{1,t} = \alpha + \beta_2 X_{2,k} + \beta_3 X_{3,k} + \dots + \beta_k X_{k,t} + \epsilon_t$$

In, to establish a cointegration relationship, you would run first an OLS regression model for your variables and test the residuals for stationarity.

Table 4: Result for Cointegration johansen test lags 1.

Series: GDP MCAP VNOFD VOFT				
VSHM				
Lags interval (in first differences): 1 to 1				
Hypothesized		Trace		0.05
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.883585	84.86374	69.81889	0.0020
At most 1	0.554024	39.70130	47.85613	0.2334
At most 2	0.427923	22.74398	29.79707	0.2589
At most 3	0.371118	11.01587	15.49471	0.2105
At most 4	0.058946	1.275843	3.841466	0.2587
Trace test indicates 1 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Source : Proceed by author with Eviews

Testing of Causality Granger

Granger method of causality is one of the many ways in which to investigate the causality relationship between two variables in the time series. This granger causality method is also one of the probabilistic accounts of causality; Which uses an empirical data set to find correlation patterns. Concerning the authenticity of the data closely related to the cause-and-effect idea, although not exactly the same, then or if Variable X has a causal relationship to variable Y, and variable X is the cause of Y or where Y is the cause of X turns. Granger causality, testing the true cause-effect relationship; If a particular variable exists before the other in the time series. In Leamer, (1985) [11] explains in other words, when finding the Granger causality in the proposed model, there is no causal relation in the true sense of the word then the data in question is "the cause of Granger", although the more precise word May be "preferred".

Table 5: Result for Causality Granger johansen test lags 1.

Pairwise Granger Causality Tests			
Lags: 1			
Null Hypothesis:	Obs	F-Statistic	Prob.
MCAP does not Granger Cause GDP	22	0.52988	0.4755
GDP does not Granger Cause MCAP		0.06393	0.8031
VNOFD does not Granger Cause GDP	22	0.22807	0.6384
GDP does not Granger Cause VNOFD		0.00591	0.9395
VOFT does not Granger Cause GDP	22	2.69057	0.1174
GDP does not Granger Cause VOFT		0.67945	0.4200
VSHM does not Granger Cause GDP	22	0.09484	0.7615
GDP does not Granger Cause VSHM		0.51392	0.4822
VNOFD does not Granger Cause MCAP	22	2.65492	0.1197
MCAP does not Granger Cause VNOFD		0.03223	0.8594
VOFT does not Granger Cause MCAP	22	2.07622	0.1659
MCAP does not Granger Cause VOFT		3.50534	0.0766
VSHM does not Granger Cause MCAP	22	0.17586	0.6797
MCAP does not Granger Cause VSHM		0.10106	0.7540
VOFT does not Granger Cause VNOFD	22	0.03202	0.8599
VNOFD does not Granger Cause VOFT		3.76442	0.0673
VSHM does not Granger Cause VNOFD	22	1.97535	0.1760
VNOFD does not Granger Cause VSHM		0.65860	0.4271
VSHM does not Granger Cause VOFT	22	0.01536	0.9027
VOFT does not Granger Cause VSHM		0.00032	0.9859

Source : Proceed by author with Eviews

INTERPRETATION OF RESULT AND DISCUSSION

Stationary Test

By doing Augmented Dickey Fuller test. The hypothesis of this test is H_0 : "Process has a root unit" vs. H_1 : "Process has no root unit". Test statistics are respectively as presented in tables 1, 2 and 3. Now by comparing them with the critical values below H_0 .

Critical values are given by:

1%: - in tables 1, 2 and 3

5%: - in tables 1, 2 and 3

10%: - in tables 1, 2 and 3

The resulting test statistic is much lower than all the critical values that you can reject H_0 . At the level of significance $<1\%$, $<5\%$ and $<10\%$. So, it can conclude with a very low probability to make an error that the timing circuit has no root unit. Using the constants model, almost as a whole, the results in Table 1, have an insignificant probability level, whereas using the first and second difference models, almost wholly the resulting probability values are significant. Thus the data variables are meticulously at the level of constants is stationer, while using the first and second difference data model in the meticulous is stationary.

Trace Test Johansen Cointegration

The trace test examines the number of linear combinations (i.e.) to be equal to a given value (λ), and the alternative hypothesis

CONCLUSION

From the research that has been done, it can be concluded that the data of capital market and GDP of Indonesia is stationary by using first and second difference test model, but with constants model of GDP variable data and Indonesia capital market as a whole is not stationary. In the long term, capital market and GDP variables are not cointegrated to one another, whereas in the short term the Indonesian capital market and GDP variables are not one-way or two-way causal. So the results of this study do not provide the same opinion with yag done by Chinwuba

et al. (2011) [6] and Mishra et al. (2010) [7], which explains that capital market variables have an influence on the growth rate of the State, where they conduct research.

REFERENCES

1. Irving J (2005) Regional Integration of Stock Exchanges in Eastern and Southern Africa: Progress and Prospects (Working paper 05/122). Retrieved from International Monetary Fund : <http://www.imf.org/external/pubs/cat/longres.aspx?sk=18301>
2. McKinnon RI (1973) Money and capital in economic development, Washington, DC: Brookings Institution. Markets. Journal of Financial Research 26: 275-299.
3. Schumpeter JA (1911) The theory of economic development. Cambridge, MA: Harvard University Press.
4. Odetayo TA, Sajuyogbe AS (2012) Impact of Nigerian capital market on economic growth and development. International Journal of Arts and Commerce 1: 1-8.
5. Kolapo FT, Adaramola AO (2012) The Impact if the Nigerian Capital Market and Economic Growth 1990-2010. International Journal of Development societies 1: 1-19.
6. Chinwuba O, Amos OA (2011) Stimulating Economic Development through the capital Market: The Nigeria Experience. Jorind 9.
7. Mishra PK, Mishra US, Mishra BR, Mishra P (2010) Capital Market Efficiency and Economic Growth: The case of India. European Journal of Economics, Finance and Administrative Sciences Issue 27: 130-138.
8. Eichengreen B, Leblang D (2003) Capital account liberalization and growth: was Mr. Mahathir right?" (Working paper 9427). Retrieved from National Bureau of Economic Research <http://www.nber.org/papers/w9427>.
9. Vazakidis A, Adamopoulos A (2009) Stock Market Development and Economic Growth. American Journal of Applied Science 6: 1933-1941.
10. Flavia B, Peter-Ovidiu M (2010) Capital Market and Economic Growth: The case of Romania. Annuals of the University of Petrosani, Economics 10.
11. Leamer, E. (1985) Vector Autoregressions for Causal Inference?, in K. Brunner – A.H. Meltzer (a cura di), Understanding Monetary Regime, Carnegie-Rochester Conference

Series on Public Policy, 22, pp. 255-304.

12. Johansen, Søren (1991). "Estimation and Hypothesis Testing of Cointegration Vectors in Gaussian Vector Autoregressive Models". *Econometrica* 59 (6): 1551–1580. *How do I interpret trace statistic and Max-Eigen statistics in the Johansen cointegration test?*. Available from:

[https://www.researchgate.net/post/How do I interpret trace statistic and Max-Eigen statistics in the Johansen cointegration test](https://www.researchgate.net/post/How_do_I_interpret_trace_statistic_and_Max-Eigen_statistics_in_the_Johansen_cointegration_test) [accessed Jun 2, 2017].

13. Gujarati DN (2004) *Basic Econometrics*. New York: McGraw-Hill.

Additional website :

<http://riantopurba.blogspot.hk/2011/12/pasar-modal-pengaruhnya-terhadap.html>

<http://www.indexmundi.com/facts/indonesia/market-capitalization-of-listed-companies>

https://ycharts.com/indicators/regions/countries/IDN/indicators?category=market_indexes