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The Effect of Stock Prices and Exchange Rates on Economic Growth in Indonesia

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ABSTRACT

This research aims to investigate the effect of stock prices and exchange rates on Indonesia economic growth. The data were used the quarterly time series spanning in the period, 2004Q1-2015Q3. Econometric model were used to analyze these data is the autoregressive distributed lag model. The result of stationary test showed that all of the time series of share prices, exchange rates, and economic growth are stationary at the first difference, or integrated of order one, I(1). The results of cointegration test showed that the third time series of stock prices, exchange rates, and economic growth are not cointegrated. The results of effect test showed that there is an effect of the stock prices and exchange rates on Indonesia's economic growth. Furthermore, the amount of influence stock prices on economic growth is greater than the effect of exchange rates on economic growth.

Keywords: Stock Price, Exchange Rate, Economic Growth, Autoregressive Distributed Lag Model
JEL Classifications: C44, F310, G120, O047

1. INTRODUCTION

Foreign currency and share are instruments of investment in financial markets. Investors will be motivated to invest in the stock market or in the foreign currency market, if investments in this market can give them a return or profit. If investors predicted that investment in the stock market and foreign exchange market can provide benefits in the future, then they will decide to buy the instrument in both markets, which in turn may lead to increase in demand for stocks and foreign currencies. Furthermore, foreign currency becomes a tool in international trade transactions, both in the real sector and the financial sector. The high trading activity can lead to increase in demand for foreign currency.

The increase in demand for shares and the foreign currency in the financial markets could cause a rise in prices of the two assets, which can ultimately affect a country's macroeconomic conditions, among others: The stock price index and gross domestic product (GDP) or economic growth. Factually in Indonesia, it can be seen from the 3 time series trend of the stock price index, exchange rates, and economic growth in 2004Q1-2015Q3, where the stock price index, rupiah/euro exchange rate, and the Indonesian GDP fluctuated and showed uptrend. Stock price index rise from 735.68% in the first quarter of 2004 to be 4802.53% in the third quarter in 2015Q3. Rupiah/euro trend also rise from Rp 10,541.55 in the first quarter of 2004Q1 to be Rp 16,575.67 in the third quarter of 2015Q3. Meanwhile, in the same period, Indonesia GDP also rise from US$ 536,605.3 in the first quarter of 2004Q1 to be US$ 2,982,562 in the third quarter in 2015Q3.

In theory, the effect of stock prices on economic growth can be explained through the channels: The wealth effect and the theory of q-Tobin. Based on the wealth effect channels, increase in stock prices is a signal of impending increase in wealth for investors and households holding assets of shares. The increase in wealth can raise household spending (Ludvigson and Steindel, 1999; Mehra, 2001; Majumder and Nag, 2015), which in turn can raise the GDP and economic growth (Adam, 2015). Furthermore, according to the q-Tobin theory that if the stock price is high, then the value of the ratio between the market price of the company with capital replacement costs are high, ultimately increasing investment and aggregate output (Duca, 2007). The increase in aggregate output may cause an increase in economic growth.

Exchange rate is also the price of foreign currency assets that can affect wealth. Depreciation of the exchange rate of the domestic currency can increase the wealth of households holding foreign currency (Sahadudheen, 2012). The increase in wealth could eventually raise consumption, GDP, and economic growth. Furthermore, based on the channels of trade, the exchange rate is a tool in international trade transactions. The depreciation of the exchange rate may cause the price of domestic goods more competitive in the international market (Mauro et al., 2008), then it can lead to increased purchase of domestic goods by other countries, so it can cause an increase in aggregate exports (Ali et al., 2014; Adam et al., 2017). This increase can raise the balance of trade, GDP (Mauro et al., 2008; Saidi, et al., 2015; Saidi, 2016), and economic growth.

Empirical research on the effect of stock prices and exchange rates on economic growth has been done by researchers in economics and finance. There has been no consensus on the results of their research. Some researchers found that the effect of stock prices on economic growth is positive, among others: Chen (1991), Hassapis and Kalyvitis (2002), Gallegati (2008), Cole et al. (2008), Madsen et al. (2013), and Adam (2015). Several other researchers found that the effect of stock prices on economic growth is negative, for example: Dimson et al. (2002) and Ritter (2005), and also there are researchers who found that stock prices do not affect economic growth, for example Senturk et al. (2014). Furthermore, some researchers found that the effect of exchange rates on economic growth is positive (Rodrik, 2008). Several other researchers found that the effect of exchange rates on economic growth is negative, among others: Gyimah-Brempong and Gyapong (1993), Omotor (2008), Ndhlela (2012), Papanikos (2015), and even some other researchers found that there was no effect of exchange rates on economic growth, among others: Akpan and Atan (2012), Mukolu et al. (2013) and Tang (2015). This difference could be due to the economic conditions of a country in a given time period in which the research is conducted, for example, Anthony (2012) and Akpan and Atan (2012) conducted a study on the effect of exchange rates on economic growth in Nigeria in different time periods, where Anthony in his research found that there was an effect of exchange rate on the economic growth, while Akpan and Atan (2012) in their study did not find any effect of the exchange rate on economic growth. Hossain and Hossain (2015) also found that there was influence of stock prices on economic growth in the US and Japan, but in the UK, the stock price did not affect the economic growth. Thus, studies that use data at different time periods in one country can provide different findings.

While studies on the effect of stock prices or exchange rates to economic growth have been conducted in various countries, and in different time periods by previous researchers, however, studies on the comparison of the influence between stock prices and exchange rates to economic growth is still rarely done by previous researchers.

This research aims to investigate the effect of stock prices and exchange rates on economic growth, and we compare the effect between stock prices and exchange rates on economic growth in Indonesia. The research data that we use is the quarterly time series data spanning from the first quarter of 2001 to the third quarter of 2015. Furthermore, we use the autoregressive distributed lag (ADL) model to analyze the data proposed by Ender (2014) and Koop (2006).

2. REVIEW OF LITERATURE

In theory, influence stock prices and exchange rates on economic growth has been stated in the introduction section. In this section, we just put forward some relevant empirical findings by previous researchers.

Ndhlela (2012) examined the relationship between exchange rate misalignment to economic growth in Zimbabwe. The results showed that the exchange rate misalignment has a negative effect on economic growth. Rapetti et al. (2012) examined the relationship between exchange rates and economic growth in developed countries (Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom and the United States), and in developing countries (Iraq, Democtatic Republic of Korea, and Laos), in the time period of 1950-2004. Period of time, they divide into two subperiode, namely time periods of 1950-1979 and 1980-2004 time period. They found that there is an influence of the exchange rate on economic growth in each subperiode of time. This exchange rate effects in developing countries is stronger than in developed countries.

Kogid et al. (2012) investigated the effects of the real exchange rate and the nominal exchange rate to the enonomic growth of Malaysian using annual data spanning 1971-2009. Results of analysis using ADL models, they found that the real exchange rate and the nominal exchange rate affected economic growth. Aman et al. (2013) examined the relationship between exchange rates and economic growth in Pakistan using data spanning in the period 1976-2010. Their research results showed that there was a positive relationship between exchange rates and economic growth. Missio et al. (2015) examined the relationship between exchange rates and output growth in Latin America. The results of data analysis using quantile regression model showed that the exchange rate positively affected economic growth.

Some researchers also examined the effect of exchange rates and other macroeconomic variables to economic growth, which is as follows. Wong (2013) examined the effect of interest rate differentials, productivity, real oil prices and exchange rates on economic growth. He used the ADL model to analyze the data. He found that the rise in the real exchange rate misalignment reduced economic growth. Koitsiwe and Adachi (2015) examined the dynamics of the relationship between mining revenue, government spending, exchange rates, and economic growth in Bosnia using quarterly data spanning the period 1994-2012. The test results using the VAR model, they found that the exchange rates and mining revenue affected economic growth. Meanwhile, government expenditure was influenced by economic growth. Omotor (2008) investigated the effect of exports, employment, imports, liberalization of economic policies, and exchange rate on Nigeria's economic growth using data in the period 1979-2005. The test results by using the error correction model (ECM) showed that exports, employment, and economgic liberalization policies affected positively on economic growth, while imports and exchange rate affected negatively on economic growth.

Research on the relationship between stock prices and economic growth is as follows. Liu and Sinklair (2008) investigated the relationship between the performance of the stock market and economic growth in Greater China (China Mailand, Hong Kong, and Taiwan). The results of their analysis using the VECM show that in the short-run, stock prices affected economic growth. Furthermore, they concluded that in the short-run, the stock price to become a leading indicator of future economic growth in Greater China. Mc-Millan and Wohar (2012) examined the long-run cointegration between the real output and stock prices in the United States using the data in the period 1801-2008. They found that in the long-run, there was a cointegration between stock prices and economic growth. Zalgiryte et al. (2014) examined the effect of stock prices on economic activity in the United States and France in the period 200Q2-2012Q1. Economic activity was proxied by GDP growth. They used cross-correlation to analyze the data, and they found that the stock market was a leading indicator of economic growth. Guo (2015) examined the relationship between stock return and real economic growth in China, in the period of time before the suprime crisis and after the suprime crisis of the United States. He used the nonuniform cross-correlation weighting approach and the multivariate generalized autoregressive conditional heteroscedasticity model. Based on the test results, he found that there was no relationship between stock returns and real economic growth before the subprime crisis. Meanwhile, after the subprime crisis, there was a relationship between real economic growth and stock returns. Senyuz et al. (2014) examined the dynamics of the relationship between economic growth and stock markets of Turkey using data in the period 1988-2008. They found that the stock market affected economic growth.

The researchers have also examined the effect of stock prices and other macroeconomic variables to economic growth. Zhang and Wu (2012) for example, examined the relationship between stock prices, household savings and economic growth in China. They use quarterly data in the period 1994-2005. Economic growth was proxied by GDP. To analyze the data, they used the VAR model. The test results showed that the household savings positively affected GDP, while the relationship between stock prices and GDP was negative but insignificant. Mauro (2003) examined the relationship between real interest rates, stock returns, money growth, and economic growth in emerging-market (among others: Argentina, Bangladesh, Botswana, Brazil, Bulgaria, Mexico, Morocco), and in developed market (Australia, Austria, Belgium, Canada, Denmark, France, Germany, Italy, Japan, Netherlands, Norway, Singapore, Sweden, Switzerland, United Kingdom, USA, and Spain) using annual data in the period 1971-1988. The test results using the panel regressions model showed that there was a positive and strong correlation between stock returns and economic growth.

3. DATA AND METHODOLOGY

3.1. Data

This study uses three types of time series data, namely: Stock prices, exchange rates, and economic growth. The stock price is proxied by the stock price index of the Indonesia stock exchange. Exchange rate is proxied by IDR/EURO exchange rate (any subsequent written exchange rate) based on the consideration that some countries in Europe, among others: Finland, Denmark, Belgium, Spain, Italy, France, Germany, Sweden, Slovakia, Ukraine, Azerbaijan, and The United Kingdom are countries of trading partner of Indonesia, and that the EURO currency is an investment instrument and tool of trade transactions in Indonesia.

All types of time series data are quarterly data spanning in period 2004Q1-2015Q3. The data source of the stock price is Fusion Media Limited (www.investing.com). The data source of the exchange rate is Bank Indonesia (www.bi.go.id). Data source of Indonesia's economic growth is Badan Pusat Statistik Indonesia (www.bps.go.id).

For purposes of analysis, time series data of stock prices is denoted by STO, the exchange rate is expressed by EXC, and economic growth is expressed by GRO. Here, GRO is the change in GDP from t-1 to t, so,

$$GRO_t = \frac{GDP_t - GDP_{t-1}}{GDP_{t-1}}$$

3.2. Methodology

This study aimed to investigate the effect of stock prices and exchange rates on economic growth. Therefore, this study used two independent variables, namely: Stock price (STO) and exchange rate (EXC), while the dependent variable is economic growth (GRO).

To test the effect, we used a model ADL presented by Ender (2015) and Koop (2006). If STO, EXC, and GRO are stationary, then the formulation of the model is:

$$GRO_t = a_0 + \sum_{i=1}^{p} a_i GRO_{t-i} + \sum_{j=0}^{q} b_j STO_{t-j} + \sum_{k=0}^{r} c_k EXC_{t-k} + \epsilon_t \quad (1)$$

However, if all-time series data STO, EXC, and GRO is stationary at first difference or integrated of order one, I(1), and are not cointegrated, then the model (1) is expressed in the form of first differences, namely

$$D(GRO_t) = a_0 + \sum_{i=1}^{p} a_i D(GRO_{t-i}) + \sum_{j=0}^{q} b_j D(STO_{t-j}) + \sum_{k=0}^{r} c_k D(EXC_{t-k}) + \epsilon_t \quad (2)$$

Where p, q, r are the length of time lag, ε_t is white noise, a_i (i = 1, 2,…, p), b_j (j = 0, 1, 2,… q) and c_k (k = 0, 1, 2,…, r) are regression parameters. $D(GRO_t)$ is the first difference form of GRO_t where $D(GRO_t) = GRO_t - GRO_{t-1} = GRO - GRO(-1)$.

In the long-run, all variables GRO, STO, and the EXC are in equilibrium condition if,

$GRO_t = GRO_{t-1} = GRO_{t-2} = ... = GRO_{t-p}$; $STO = STO_{t-1} = STO_{t-2} = ... = STO_{t-p}$; and $EXC_t = EXC_{t-k} = EXC_{t-2} = ... = EXC_{t-r}$, so the equation 2 becomes,

$$D(GRO_t) = \frac{a_0}{1-\sum_{i=1}^{n} a_i} + \frac{\sum_{j=1}^{p} a_j}{1-\sum_{i=1}^{n} a_i} D(GRO_t) + \frac{\sum_{j=0}^{q} b_j}{1-\sum_{i=1}^{n} a_i} D(STO_t) + \frac{\sum_{j=0}^{r} c_j}{1-\sum_{i=1}^{n} a_i} D(EXC_t) + \epsilon_t \quad (3)$$

Where $b = \frac{\sum_{j=1}^{q} b_j}{1-\sum_{i=1}^{n} a_i}$ is long-run multiplier of stock prices on economic growth, and $c = \frac{\sum_{j=0}^{r} c_j}{1-\sum_{i=1}^{n} a_i}$ is a long-run multiplier of exchange rate on economic growth (Heij et al., 2004; Adam et al., 2015). A positive multiplier value means that the long-run effect of stock prices or exchange rates on economic growth is positive.

Koop (2006) states that the explanatory variables in the equation 1 and 2 can multicollinearity. To eliminate multicollinearity, he changed the form of equation 2 becomes,

$$D(D(GRO_t)) = a_0 + \rho D(GRO_{t-1}) + \theta D(STO_t) + \tau D(EXC_t) + \sum_{i=1}^{p} \gamma_i D(D(GRO_{t-i})) + \sum_{j=0}^{q} \omega_j D(D(STO_{t-j+1})) + \sum_{j=0}^{q} \omega_j D(D(STO_{t-j+1})) + \sum_{k=0}^{r} \phi_k D(D(EXC_{t-k+1})) + \epsilon_t \quad (4)$$

Where $D(D(GRO_t)) = D(GRO_t) - D(GRO_{t-1}) = D(GRO) - D(GRO(-1))$ is the second difference form of GRO_t. The long-run multiplier of stock prices on economic growth is,

$b = -\frac{\theta}{\rho} = \frac{\sum_{j=1}^{q} b_j}{1-\sum_{i=1}^{n} a_i}$ and the long-run multiplier of exchange rate on economic growth is $c = -\frac{\tau}{\rho} = \frac{\sum_{j=0}^{r} c_j}{1-\sum_{i=1}^{n} a_i}$. If each STO, EXC, and GRO is integrated of order one I(1), and they are cointegrated, then the equation 4 becomes,

$$D(D(GRO_t)) = a_0 + e_{t-1} + \rho D(GRO_{t-1}) + \theta D(STO_t) + \tau D(EXC_t) + \sum_{i=1}^{p} \gamma_i D(D(GRO_{t-i})) + \sum_{j=0}^{q} \omega_j D(D(STO_{t-j+1})) + \sum_{k=0}^{r} \phi_k D(D(EXC_{t-k+1})) + \epsilon_t \quad (5)$$

Where e_{t-1} is an error correction, and (5) is called an ECM.

To test the effect of stock prices and exchange rates on economic growth, we do a three-step of test, namely: The unit root test, cointegration test, and test of the effect. We used the Augmented Dickey-Fuller test to test a stationary time series data. According to this test, that if the absolute value of the test statistic is greater than the absolute value of it's critics at the significance level of 1% or 5%, then the time series is stationary or integrated of order d, I(d).

We used Granger-two-step cointegration test to test cointegration among stock prices, exchange rates, and economic growth. In this test, we first build RES time series from multiple regression equation,

$$RES_t = GRO_t - \propto - \beta EXC_t - \gamma STO_t \quad (6)$$

Where α, β, and γ are parameter estimation results of multiple regression. When RES_t is integrated of order zero, I(0), then STO, EXC, and GRO are cointegrated.

To test the effect of stock prices and exchange rates on economic growth, first of all, we estimate all parameters of the ADL model using the least squares method. While testing the significance of all these parameters, we used the p-value test of t-statistics and F-statistics on significance level α (1%, 5% or 10%). Furthermore, the determination of lag length p, q, and r, we used the Akaike

Table 1: The results of ADF test

Variable	ADF statistic	1% critical value	5% critical value	P*
STO	−0.852337	−3.581152	−2.926622	0.7943
D (STO)	−5.286053	−3.584743	−2.928142	0.0001
EXC	−1.589670	−3.581152	−2.926622	0.4797
D (EXC)	−6.106235	−3.584743	−2.928142	0.0000
GRO	−2.224373	−3.600987	−2.935001	0.2011
D (GRO)	−4.802423	−3.615588	−2.941145	0.0004

*MacKinnon (1996) one-sided P values

Table 2: The estimation results of the ADL model with dependent variable is D (D (GRO)

Independent variable	Coefficient	t-statistics	P	Others statistics
a_0	−0.016552*	−3.751093	0.0011	R^2: 0.970318
D (GRO(−1))	−3.933924*	−18.14962	0.0000	F-statistics: 44.94918
D (D (GRO(−1)))	1.915941*	12.14940	0.0000	P (F-statistics): 0.000000
D (D (GRO(−2)))	0.927774*	11.12662	0.0000	AIC: −5.254963
D (STO)	0.000107*	3.949632	0.0007	DW statistic: 2.284653
D (D (STO))	−0.000119*	−5.240784	0.0000	
D (D (STO(−1)))	−0.000102*	−5.457940	0.0000	
D (D (STO(−2)))	−5.95E-05*	−3.773651	0.0010	
D (D (STO(−3)))	−3.02E-05**	−2.746150	0.0118	
D (EXC)	2.75E-05**	2.411121	0.0247	
D (D (EXC))	−3.09E-05*	−3.023267	0.0062	
D (D (EXC(−1)))	−2.42E-05**	−2.611023	0.0160	
D (D (EXC(−2)))	−2.25E-05**	−2.669825	0.0140	
D (D (EXC(−3)))	−1.52E-05**	−2.155453	0.0423	
D (D (EXC(−4)))	−1.10E-05***	−1.837731	0.0796	
D (D (EXC(−5)))	−1.20E-05**	−2.596310	0.0165	
D (D (EXC(−6)))	−6.77E-06***	−1.900410	0.0706	

*Significant 1%, **significant 5%, ***significant 10%, ADL: Autoregressive distributed lag

Information Criterion (AIC), namely that the values of p, q, and r is determined such that the value of AIC reached the minimum value (Koop, 2006). We also compare the statistical value of Durbin Watson (DB) and R-square (R^2) value to ensure that the results of model estimation are not a spurious regression model.

4. RESULTS AND DISCUSSION

4.1. Results

Results of the unit root test on time series of stock prices, exchange rates, and economic growth, both at the level and in first differences are summarized in Table 1. Based on the values of the statistics in Table 1, all the time series of stock prices, exchange rates and economic growth are stationary at first difference, or integrated of order one, I(1).

RES_t is a time series constructed from the equation 6. The results of the ADF test on time series, we get the value of the test statistic is −1.287471. While the statistical value of it's critics at the 5% significance level is −2.935001. By comparing the value of both these statistics, RES_t is unstasionary time series or is not integrated of order zero, I(0). So, the time series of stock prices, exchange rates, and economic growth are not cointegrated.

The estimation results of all parameters of regression equation 4 are summarized in Table 2. Based on the P-value of F-statistics in Table 2 show that all parameters of the ADL model is significant 1%. This indicates that the stock prices and exchange rates jointly effect on economic growth. Furthermore, based on the P-value of t-statistics, then each parameter of regression is significant (1%, 5%, or 10%). Thus, partially, there is an effect of stock prices on economic growth, and there is an effect of exchange rates on economic growth.

A long-run multiplier of independent variable D(STO) is 2.71993E-05. Based on this multiplier number, then the effect of stock prices on economic growth is positive. The amount of influence stock prices on economic growth is relatively small, with each 1% rise in stock prices, economic growth rose by 2.71993E-05%. Furthermore, the independent variable D(EXC) has a long-run multiplier of 6.99048E-06, so that, the exchange rate also affects positively to economic growth, where each 1% increase in the exchange rate, economic growth rose by 6.99048E-06%. Based on the multiplier effect of stock prices and exchange rates, then we conclude that the contribution of stock price to economic growth is greater than the contribution of exchange rate to economic growth.

4.2. Discussion

The results of this study are consistent with results of previous studies mentioned in the introductory section and in the section of literature review; however, the results are not in line with the findings in the study by Akpan and Atan (2012), and Tang (2015). The difference between our finding and the research results of Akpan and Atan (2012) and also Tang (2015) could be caused by the economic conditions of the country where the study was conducted (Hossain and Hossain, 2015), where our study was conducted in Indonesia, while Akpan and Atan (2012) in Nigeria, and Tang (2015) in China.

In this study also found that economic growth is influenced by economic growth to the previous two quarters. The influence of stock prices and exchange rates on economic growth is relatively small, and the effect of economic growth in the past is still greater when seen from the coefficient of determination in Table 2. Thus, there are other factors that can affect the economic growth. Other factors could be caused partly by: Money growth (Mauro, 2003), foreign direct investment (Sylwester, 2005), export and import (Omotor, 2008), interest rates and oil prices (Wong, 2013), household saving (Zhang and Wu, 2012), and income distribution (Molero-Simarro, 2015). However, the effect of these factors need further research.

5. CONCLUSION

This research aims to investigate the influence of stock prices and the exchange rates on Indonesia's economic growth, and to compare the magnitude of the effect between stock prices and exchange rates. Time series data used in this study is the quarterly time series data spanning in the period 2004Q1-2015Q3. Time series data consists of stock prices, exchange rates, and economic growth in Indonesia. Exchange rate is proxied by IDR/EUR. Econometric models are used to analyze the data is the ADL model.

Stationary test results showed that all the time series of stock prices, exchange rates, and economic growth are stationary at first difference, or integrated of order one, I(1). Cointegration test results showed that the three time series of stock prices, exchange rates, and economic growth are not cointegrated.

Based on the test results on the effect of the independent variables showed that there is an influence of stock prices and exchange rates on economic growth, either together or partially. This influence is positive, meaning that if the prices of stock and/or exchange rates rise, economic growth also rose. The amount of influence stock prices on economic growth is greater than the effect of exchange rates on economic growth.

REFERENCES

Adam, P. (2015), A model of the dynamic of the relationship between stock prices and economic growth of Indonesia. Applied Economics and Finance, 2(3), 12-19.

Adam, P., Rianse, U., Cahyono, E., Rahim, M. (2015), Modeling of the dynamics relationship between world crude oil prices and the stock market in Indonesia. International Journal of Energy Economics and Policy, 5(2), 550-557.

Adam, P., Rosnawintang, Nusantara, A.W., Muthalib, A.A. (2017), A model of the dynamic of the relationship between exchange rate and Indonesia's export. International Journal of Economics and Financial Issues, 1(1), 255-261.

Akpan, E.O., Atan, J.A. (2012), Effects of exchange rate movements on economic growth in Nigeria. CBN Journal of Applied Statistics, 2(2), 1-14.

Ali, A.A., Johari, F., Alias, M.H. (2014), The effect of exchange rate movements on trade balance: A chronological theoretical review. Economics Research International, 2014, 1-7.

Aman, Q., Ullah, I., Khan, M.I., Khan, S.U.D. (2013), Linkages between exchange rate and economic growth in Pakistan (an econometric approach). European Journal of Law and Economics, 1-8. Available from: http://www.link.springer.com/article/10.1007/s10657-013-9395-y.

Anthony, O. (2012), Bank savings and bank credits in Nigeria: Determinants and impact on economic growth. International Journal of Economics and Financial Issues, 2(3), 357-372.

Chen, N.F. (1991), Financial investment opportunities and the macro economy. The Journal of Finance, XLVI(2), 529-554.

Cole, R.A., Moshirian, F., Wu, Q. (2008), Bank stock returns and economic growth. Journal of Banking and Finance, 32, 995-1007.

Dimson, E., Marsh, P., Staunton, M. (2002), Triumph of the Optimists. 1st ed. Princeton: Princeton University Press.

Duca, G. (2007), The relationship between the stock market and the economy: Experience from international financial market. Bank of Valletta Review, 36, 1-12. Available from: https://www.bov.com/content/bov-review.

Enders, W. (2015), Applied Econometric Time Series. 4th ed. New York: John Wiley & Son Inc.

Gallegati, M. (2008), Wavelet analysis of stock returns and aggregate economic activity. Computational Statistics and Data Analysis, 52, 3061-3074.

Guo, J. (2015), Causal relationship between stock returns and real economic growth in the pre-and post-crisis period: Evidence from China. Applied Economics, 47(1), 12-31.

Gyimah-Brempong, K., Gyapong, A.O. (1993), Exchange rate distortion and economic growth in Ghana. International Economic Journal, 7(4), 59-74.

Hassapis, C., Kalyvitis, S. (2002), Investigating the links between growth and real stock price changes with empirical evidence from the G-7 economies. The Quarterly Review of Economics and Finance, 42, 543-575.

Heij, C., Boer, D.P., Franses, P.H., Kloek, T., Dijk, V.H.H. (2004), Econometric Methods with Applications in Business and Economics. New York: Oxford University Press Inc.

Hossain, M.K., Hossain, A. (2015), An empirical relationship between share price and economic growth: New evidence on selected industrialized economies. American Journal of Economics, 5(3), 353-362.

Kogid, M., Asid, R., Lily, J., Mulok, D., Loganathan, N. (2012), The effect of exchange rates on economic growth: Empirical testing on nominal versus real. The IUP Journal of Financial Economics, X(1), 7-17.

Koitsiwe, K., Adachi, T. (2015), Relationship between mining revenue, government consumption, exchange rate and economic growth in Botswana. Contaduría Administración, 60(S1), 133-148.

Koop, G. (2006), Analysis of Financial Data. London: Wiley & Son Ltd.

Liu, X., Sinklair, P. (2008), Does the linkage between stock market performance and economic growth vary across greater China? Applied Economics Letters, 15, 505-508.

Ludvigson, S., Steidel, C. (1999), How important is the stock market effect on consumption? Economic Policy Review, 5(2), 29-51.

Madsen, J.B., Dzhmashev, R., Yao, H. (2013), Stock returns and economic growth. Applied Economics, 45,1257-1271.

Majumder, S.B., Nag, R.N. (2015), Return and volatility spillover between stock price and exchange rate: Indian evidence. International Journal of Economics and Business Research, 10(4), 326-340.

Mauro, F.D., Ruffer, R., Bunda, I. (2008), The Changing Role of the Exchange Rate in a Globalised Economy, ECB Occasional Paper Series, No. 94, Social Science Research Network. Available from: http://www.ssrn.com/abstract_id=1144484, 1-62.

Mauro, P. (2003), Stock returns and output growth in emerging and advanced economies. Journal of Development Economics, 71, 129-153.

Mc-Millan, D.G., Wohar, M.E. (2012), Output and stock prices: An examination of the relationship over 200 years. Applied Financial Economics, 22, 1615-1629.

Mehra, Y.P. (2001), The wealth effect in empirical life-cycle aggregate consumption equations. Economic Quarterly, 87(2), 45-68.

Missio, F.J., Jayme, F.G.Jr., Brito, G., Oreiro, J.L. (2015), Real exchange rate and economic growth: New empirical evidence. Metroeconomica, 66(4), 686-714.

Molero-Simarro, R. (2015), Functional distribution of income, aggregate demand, and economic growth in the Chinese economy, 1978-2007. International Review of Applied Economics, 29(4), 1-20.

Mukolu, M.O., Otalu, J.A., Awosusi, C.T. (2013), Assessment of the impacts of foreign direct investment and interest rate on the growth of Nigerian economy. IOSR Journal of Business and Management, 15(3), 40-44.

Ndhlela, T. (2012), Implication of real exchange rate misalignment in developing countries: Theory, empirical evidence in Zimbabwe. South African Journal of Economics, 80(3), 319-344.

Omotor, D.G. (2008), The role of exports in the economic growth of Nigeria: The bounds test analysis. International Journal of Economic Perspectives, 2(4), 222-235.

Papanikos, G.T. (2015), The real exchange rate of euro and Greek economic growth. The Journal of Economic Asymmetries, 12, 100-109.

Rapetti, M., Skott, P., Razmin, A. (2012), The real exchange rate and economic growth: Are developing countries different? International Review of Applied Economics, 26(6), 735-753.

Ritter, J.R. (2005), Economic growth and equity returns. Pacific-Basin Finance Journal, 13, 489-503.

Rodrik, D. (2008), The Real Exchange Rate and Economic Growth, Brookings Papers on Economic Activity, Fall. p365-439.

Sahadudheen, I. (2012), Demand for money and exchange rate: Evidence for wealth effect in India. Undegraduate Economic Review, 8(1), 1-15.

Saidi, L., Kamaluddin, M., Rostin, Adam, P., Cahyono, E. (2015), The Effect of the interaction between US dollar and Euro exchange rates on Indonesia's national income. WSEAS Trasactions on Business and Economics, 12, 131-137.

Saidi, L.O. (2016), Interaksi Dinamika Nilai Tukar Rupiah dengan Empat Mata Uang Kuat dan Pengaruhnya Terhadap Perekonomian Indonesia (Unpublished Ph.D Thesis). Economics Graduate Program. Kendari: Universitas Halu Oleo.

Senturk, M., Oskan, G.S., Akbas, Y.E. (2014), The relationship between economic growth and stock return: An example from Turkey. Doğuş Üniversitesi Dergisi, 15(2), 155-164.

Senyuz, Z., Yoldas, E., Onur, I. (2014), Cyclical dynamics of the Turkish economy and the stock market. International Economic Journal, 28(3), 405-423.

Sylwester, K. (2005), Foreign direct investment, growth and income inequality in less developed countries. International Review of Applied Economics, 19(3), 289-300.

Tang, B. (2015), Real exchange rate and economic growth in China: A cointegrated VAR approach. China Economic Review, 34, 293-310.

Wong, H.T. (2013), Real exchange rate misalignment and economic growth in Malaysia. Journal of Economic Studies, 40(3), 298-313.

Zalgiryte, L., Guzavicius, A., Tamulis, V. (2014), Stock market and economic growth in the U.S. & France: Evidence from stock market sector indices. Inzinerine Ekonomika-Engineering Economics, 25(1), 47-53.

Zhang, D., Wu, Y. (2012), Household savings, the stock market, and economic growth in China. Emerging Markets Finance and Trade, 48(2), 44-58.