IMPACT OF STOCK EXCHANGE MARKET TO THE ECONOMIC GROWTH IN TANZANIA

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Like developed countries, developing countries have established stock markets in view of achieving their economic growth. This study sought to investigate the impact of stock exchange market to the economic growth in Tanzania over a period of 1998 - 1992. A simple regression model using the 1998-2012 annual data sets was employed. The empirical findings show that the market size has a negative impact on economic growth, which suggests that the stock market in Tanzania is still infant and thus does not have a significant impact on economic growth. The findings also show that the market liquidity has a positive impact on the economic growth, which suggests that that despite the size of the stock market, the market is very active.

Keywords*: stock exchange, market capitalization, market liquidity, economic growth.*

I. Introduction

The stock markets help to bring together savers and users of funds in an economy. The savers would get the best returns from their funds and, on the other hand, the users would raising funds which they would use to invest on their real assets. At the end, the economy would grow.

The growth trend of the stock markets worldwide has been remarkable (Witkowski, 2015). By February 2015, theglobal stock market capitalizationhad grown to USD 69 trillion dollars from USD 34 trillion in 2008. On the other hand, the stock market liquidity rose from USD 9.6 trillion in 1994 to USD 29.7 trillion in 2014 (Schmerken, 2014).

By 2009, the African stock markets account for only 2 percent of the total value of the world's stock markets (Capital Markets Authority, 2009). The Dar Es Salaam Stock Exchange (DSE) was created for the aim of providing responsive securities exchange that promotes economic empowerment and contribute to the country's economic development through offering a range of attractive and cost-effective products and services (DSE, 2015). By June 2015, the market capitalization, at DSE had a value of USD 10.7 billion equivalent to Tshs. 23,721.49 billion from only Tshs. 3,083.37 billion in 2007, and the stock market liquidity rose from 117,941 in 2006 to 1,780,915 in 2014. Although the comparison of Tanzania's market capitalization to the world may seem bleak, the DSE has come a long way since its formation (DSE, 2015).

It is partly for this reason, many scholars, policy makers and investors have been interested in knowing the impact of the stock market in developing countries. In order for there to be growth and development, the stock market in a particular country must be able to effectively mobilize funds from savers to investors in order to foster economic growth.

The DSE was established as one of the government initiatives to transform the economy from public government driven economy to a free market economy. The stock market could function as a vessel for the growth of related financial services sector such as insurance, pension and provident fund schemes. It could act as an improvement of access to finance for new and smaller companies. It could monitor changes in an economy through the price of shares; when the prices rise or fall; this indicates an economic boom or recession respectively. It also helps in facilitating the most productive investments and leads to capital formation and eventually economic growth (Pujari, 2011).

The DSE was incorporated in 1996 and started operations with listing and trading of the first equity in 1998 with only two listed companies, Tanzania Oxygen Limited (TOL) and Tanzania Breweries Limited (TBL) in the same year, and until March 2016, there are 23 companies listed in the DSE.

Existing literature does not conclusively show whether stock markets have any impact on the economic growth (Alajekwu & Achugbu, 2011; Shivji, 2010; Massele *et al*, 2013). It is from these inconsistent findings that this studyis motivated to find out the extent to which the DSE has an impact on the economic growth of Tanzania between the year 1998 and 2014. The findings of this study will contribute to the existing literature on the impact of the stock markets to the economic growth of a country.

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The general objective of this study was to analyze the impact of the stock market on the economic growth of Tanzania. Specifically, the study tried to achieve the following objectives:

i) To determine the effects of stock market liquidity to GDP in Tanzania
ii) To determine the effects of stock market size to GDP in Tanzania
iii) To find out determinants of the stock market performance in relation to economic growth in Tanzania

It is hypothesized that:

H_{01}: Stock market liquidity affects the GDP in Tanzania

H_{02}: Stock market size does not affect the GDP in Tanzania

H_{03}: There are no determinants of the stock market performance in relation to economic growth in Tanzania

II. Literature Review

2.1 Stock market development indicators

Size Indicator: Stock market capitalization measures the size of the stock market and equals the value of listed domestic shares on domestic exchanges divided by GDP. Even though large markets do not necessarily function well and taxes may misrepresent motivation to list on the exchange, many observers use stock market capitalization as an indicator of market development.

Liquidity Indicators: There are two common related measures of market liquidity. First, it is the turnover, which is equal the value of domestic shares that are *traded* on domestic exchanges divided by the value of domestic shares that are only *listed*. Turnover measures the volume of domestic shares traded on domestic exchanges relative to the size of the domestic market. High Turnover indicates high liquidity and low transaction costs. This does not mean a large stock market is a liquid market: a large but inactive market will have large size (stock market capitalization) but small Turnover (Levine & Zervos, 1998).

The second measure of market liquidity is value or volume of shares traded, which equals the value of the shares traded on domestic exchanges divided by GDP. This may not be a direct measure of trading costs but theoretical models of stock market liquidity and economic growth directly motivate Value Traded (Levine 1991; Bencivenga *et al.* 1995). Volume of shares traded measures trading volume as a share of national output and should therefore shows liquidity on an economy-wide basis (Levine & Zervos, 1998).

2.2 Stock Market and Economic Growth

The stock market is associated with economic growth in a way that; it helps investors to diversify their risks by investing in multiple companies. As a result of this, firms are able to raise capital from investors and thus facilitate production which leads to growth. The stock market liquidity allows investors to easily buy shares with the higher returns by observing the share prices, therefore facilitating capital mobilization. This leads to the allocation of capital to the firms with higher productivity and hence leads to increased output, efficiency allocation of financial resources and economic growth. Hence, a larger and liquid stock market has higher chances of mobilizing resources which leads to economic development.

2.3 Empirical Literature

Biyan (2012) studied the role of Stock Exchange market to economic growth in Tanzania and found that both market capitalization and value of share traded contribute a small amount in growth of the economy of Tanzania. The similar study was done in Kenya and the results show that stock market development (measured by trade volume and/or capitalization) has a positive impact on the economic growth in Kenya (Ikikii and Nzomoi, 2013). The same results were also reported in Mauritius (Nowbutsing, 2009) and South Africa, (Odhiambo, 2009).

III. Research Methodology

3.1 Model Specification

This study adapts the approach by Odhiambo (2009) with some modifications. In analyzing the relationship between the stock market and economic growth in South Africa, Odhiambo used real per capita GDP, market capitalization, value of shares traded andturnover. In this study, the variables that were used were the market capitalization, the value of shares traded and real GDP. The turnover was not used due to the lack of sufficient data. The model is specified as follows:

RGDP = f (MC, VST)

Where MC refers to the Market capitalization, VST is value of shares traded and RGDP is real Gross Domestic Product.
The *a priori* expectations are that all variables are independent variables and they are expected to have a positive relationship with the dependent variable. If the *a priori* signs which indicate the coefficients of the indicators of stock market are positively related to economic growth, it suggests that an increase in these factors will cause the real GDP, to increase.

3.2 Definition of variables

Gross Domestic Product (RGDP): GDP is the monetary value of all finished goods and services produced within a country's borders. The variable is represented by real GDP. The real GDPis measured in Tanzania Shillings.

Market capitalization: The market size is represented by the market capitalization (MC). Although large markets do not necessarily function effectively, many observers use Capitalization as an indicator of market development, (Levine & Zervos, 1998).

Volume of shares traded (VST): The stock market liquidity is represented by the volume of shares traded. This equals the value of the trades of shares on domestic exchanges. Value traded measures trading volume as a share of national output and should therefore positively reflect liquidity on an economy wide basis, (Levine & Zervos, 1998).

3.3 Source of data

The study uses quarterly time series data covering the period 1998 to 2014. The study covered this period because it is a time where Tanzania had liberalized its economy and the stock exchange had already started functioning. The data for the MC, and the VST was obtained from the Dar Es Salaam Stock Exchange. The data for the real GDP was obtained from the National Bureau of Statistics' of Tanzania Mainland.

IV. Empirical Analysisand Interpretation

4.1 Descriptive Statistics

Table 1 presents the mean, median, minimum, maximum, standard deviation, skewness and kurtosis tests for each variable.

Table 1:Descriptive Statistics

Variable	Real GDP	Market capitalization	Volume of shares traded
Observations	15	15	15
Mean	16780.07	1639.385	24.228
Std. Dev.	12802.35	1824.487	516.64417
Min	5125	5.924	0
Max	48415	5181.41	59.8
Prob>chi^2	0.0317	0.2121	0.1839

The table above shows that the p-values (Prob>chi^2) of the GDP is significant. However, the other two variables market capitalization and volume of shares traded are insignificant.

4.2 Correlation Analysis

Correlation analysis among the variables shows the strength and direction of relationship among the two variables. It can also be used as an indicator for testing the presence of multicollinearity among the variables.Table 2 presents the correlation matrix of the variables.

Table 2: Correlation Analysis

	Real GDP	**Market capitalization**	**Volume of shares traded**
RealGDP	1.0000		
market capitalization	0.1479	1.0000	
volume of shares traded	0.6889	0.4316	1.0000

Table 2 above shows the correlation matrix for the variables of the model. The signs of this correlation matrix, which are positive, give the direction of linear relationship between the corresponding two variables, while the magnitude gives the strength of the correlation. The closer the values are to 1 the higher the correlation between them.

The simple correlation coefficient between the real GDP and the market capitalization is 0.14. That means that the market capitalization explains $(0.14)^2$ or 1.96 percent of the variation in the real GDP. These results are unexpected since theoretically, the size of the stock market which is represented by the market capitalization is supposed to affect the GDP. The researcher expected the stock market capitalization to influence the stock market in Tanzania. Surprisingly, the stock market capitalization (market size) as shown by the simple correlation slightly explains the variation in the economic growth of Tanzania. These results suggest that the stock market in Tanzania is still in its infant stages and thus cannot affect the country's GDP.

The highest correlation is found to exist between real GDP and volume of shares traded. The volume of shares traded explains 46 percent $(0.68)^2$of the variation in the real GDP. This might be because as the country's GDP grows so does the volume of shares traded,the reason behind is the increase in individuals' income due to growth of GDP, which leads to savings and investment in the country to increase. The increase of savings and investments in a stock market leads to the upsurge of the volume of shares traded in the exchange. Lastly, the simple correlation between volume of shares traded and market capitalization is $(0.43)^2$ which means that volume of shares traded explains 18 percent of the variation in market capitalization and vice versa.

4.3. Regression Analysis - Ordinary Least Square Method

Table 3:Regression Analysis

Number of observations	15
F(2, 12)	6.05
Prob > F	0.0152
R-squared	0.5020
Adj R-squared	0.4190

As with the simple regression, we look to the p-value of the F-test to see if the overall model is significant. Since the p-value is 0.0152, the null hypothesis is rejected. Thus the model is statistically significant. The R-squared is 0.5020, this is converted to percentage form and it means that approximately 50% of the variability of real GDP is accounted for by the variables in the model. In this case, the adjusted R-squared which is 0.4190 indicates that about 41% of the variability ofreal GDP is accounted for by the variables of the model.

Table 4: Regression Analysis (Cont.)

	Coef	Std.err	t	P>|t|	[95% Conf. Interval]	
MC	-1.288369	1.584597	-0.81	0.043	-4.740908	2.164171
VST	590.8457	173.6991	3.40	0.005	212.388	969.3035
_Cons	4577.188	4622.818	0.99	0.002	-5495.068	14649.44

The p-value of market capitalization is 0.04; it indicates weak significance of the variable to economic growth (since it is only a little less than 0.05). If volume of shares traded are fixed, for each unit increase in market capitalization, economic growth will decrease by 1.29 units. The decrease in market capitalization is determined by the negative coefficient. This result portrays that thestock market capitalization (market size) in Tanzania is still in its infant stages. Moreover the negative effect further complements the findings that the size of the stock marketdoes not have an impact on economic growth. The results are puzzling since they do not adhere to the expectations that market capitalization which represents stock market size has a positive impact on economic growth.However, these results do reflect the situation in Tanzania where the domestic market capitalization is still narrow and thin and is worth only 10 percent of the country's GDP.

V. Conclusionand Recommendations

5.1 Summary and Conclusion

The objective of the study was to analyze the impact of the stock exchange market to the economic growth in Tanzania.The reason for carrying out this research was drawn from the fact that there is growing momentum of the importance of this sector in developing countries including Tanzania. This sparked interest to the researcher to investigate the variables of the stock market and find out the relationship between these variables and economic growth in Tanzania.

The regression analysis results show that the overall model was significant. However, the market capitalization had a weak significance and a negative effect on economic growth. These results were puzzling since they are conflicting the assumption that the stock market should positively affect economic growth. These resultscould also imply that the stock market capitalization in Tanzania is too small to have an impact on GDP, whereas the volume of shares traded had a positive effect on economic growth. This implies that the stock market in Tanzania is still in its infant stages and cannot affect economic growth while the liquidity of the stock market is improving as more investors are engaging in buying and selling of shares. These results are contrary to *apriori* expectations whereby both the stock market capitalization and volume of shares traded should have a positive impact on economic growth.

The results may also stem from the fact that the time frame of 15 years (1998-2012) may not be long enough for results of establishing a stock exchange to be realized. There are also few companies that have enlisted their shares in the stock market yet and hence the upside potential is high. Comparatively, the studies of the stock market in South Africa have been using variables which ranges from 1970s to 2000s with over 400 companies compared to DSE with only 23 listed companies.

Since this study dwelt on the impact of the stock market size and liquidity on the economic growth, the future studies could extend the results of this study and explore the relationship between the stock market and other macroeconomic variables such as savings, investment, and employment. In so doing, the studies would provide a clearer picture of the DSE in relation to specific variables that have impact on the economy.

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Appendix A: Real GDP, Market Capitalization and Volume of shares traded annual data

Year	GDP (Tshs Billion)	MC (Tshs Billion)	VST (Tshs Billion)
1998	5125	163	0
1999	5978	145	5.21
2000	6706	189	32.08
2001	7625	378	7.60
2002	9752	689	18.85
2003	10,423	500	22
2004	11,239	800	17
2005	12,068	2500	28
2006	12,881	2573	15.30
2007	13,801	3118	27.30
2008	14,828	3411	26.39
2009	25,510	5181.41	33.81
2010	29,298	4924.53	55.12
2011	38,052	5.924	14.96
2012	48,415	12.909	59.80

Appendix B: Quarterly data of log of Real GDP, Market Capitalization Ratio and Volume of shares ratio

QUARTER	LRGDP	Log of market capitalization	Log of volume of shares traded
2007q1	14.92378	13.84507	2.8456
2007q2	15.06367	13.70234	3.86562
2007q3	15.20838	13.56448	3.1525
2007q4	15.39801	13.78299	4.12342
2008q1	14.99975	13.79224	3.89125
2008q2	15.12335	13.70122	3.73697
2008q3	15.58285	13.55933	4.97965
2008q4	15.07519	13.90169	2.46982
2009q1	15.05396	14.15198	3.68312
2009q2	15.16208	14.04662	2.54
2009q3	15.34032	13.92884	1.34994
2009q4	15.15905	14.10069	2.49403
2010q1	15.12676	14.10818	2.04494
2010q2	15.23493	13.98946	1.74102
2010q3	15.40282	13.82546	2.35523
2010q4	15.22465	13.99783	1.10139
2011q1	15.18552	14.10069	1.66146
2011q2	15.30077	14.07788	1.75545
2011q3	15.45659	13.96393	2.79242
2011q4	15.29747	14.35783	2.57187
2012q1	15.25667	14.82711	3.11755
2012q2	15.36305	14.73977	3.00574
2012q3	15.52958	14.65276	2.30338

2012q4	15.35855	14.83796	2.81087
2013q1	15.32854	14.89392	2.77767
2013q2	15.43596	14.81246	1.43422
2013q3	15.59046	14.69928	1.4509
2013q4	15.42362	14.99108	1.59326
2014q1	15.3971	15.07113	1.95549
2014q2	15.50238	15.01548	1.5628