Macroeconomic Environment and Financial Performance of Manufacturers Listed at the Kenyan Securities Market

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Abstract: **Manufacturing firms are recognised globally as an essential element of a health economy. In Kenya the state has identified the manufacturing sector as one of its Agenda 4 development blue print for the country. In spite of this expectation sector's performance has been wanting and is beleaguered by several obstacles. In fact, the sector's contribution to the Kenya's economy is worrying after the realization that other sectors of the economy such as telecommunication and real estate have surpassed its contribution to the national gross domestic product. This underperformance, together with financial challenges, low productivity and quality control problems have forced some manufacturers to close down while other are undergoing severe financial distress. Information as to how macroeconomic performance could be underpinning the financial performance of the manufacturing sectors is scanty in the literature. Guided by a descriptive research design, a census of manufacturing firms listed on Nairobi Securities Exchange was conducted and a five-year secondary data for period 2013 to 2017 collected from their published financial statements as well as KNBS database. The data analysis indicate that only 55.55 percent of variation in financial performance was explained by changes in the level of macroeconomic variables. A unit reduction in inflation rate and foreign exchange rate, and a unit increase in economic growth led to a positive variations in financial performance of the listed manufacturers in Kenya. Therefore, there was a statistically significant effect of economic growth on financial performance of listed manufacturing firms in Kenya. Efforts to improve the performance of manufacturing sector must be accompanied by monetary and fiscal policies aimed at price stability.**

Keywords: **Economic Growth; macroeconomic Environment; Listed Manufacturing Firms, Financial Performance; Nairobi Securities Exchange.**

1. INTRODUCTION

Manufacturing companies play an important role in developing economies and ensuring a healthy and vibrant economic environment. Their importance has been engraved in the Kenya's development blue prints such as Vision 2030 and the Big 4 Agenda. The sector is one of the most important economic sectors for development at local and international level (Khalif & Shaffi, 2013). Goll & Rasheed (2004) notes that organizational environment is one of the major problems faced by firms in many economies.

Macroeconomic variables are those factors which affect a countries income level, production output, consumption, unemployment rate, savings, investment decisions, international trade agreements and are independent from income levels (Bhattachary, 2013).

The subject of financial performance has drawn more attention from scholars in the various areas of finance and accounting in the recent times. It is the core concern for business practitioners in all types of firms since financial

performance affects organizational health and ultimately its future survival. Deitiana & Habibuw (2015) maintains that return on asset is a good measure of the overall effectiveness of management in generating income with available assets and is useful for comparing competing companies in the same industry.

Internationally manufacturing sector is viewed as the cornerstone of many developed economies. It is a crucial sector for sustainable economic growth, structural change and job creation (Herman, 2015). At the continental level, although manufacturing is usually considered a small factor on Africa economies in terms of its share of total output of the economy, growth of the sector has long been considered critical for economic development. This special interest in manufacturing sector stem in the belief that the sector is a potential engine of modernization, industrialization, job creation and generator of positive effects on the economy (Saderborn & Teal, 2002).

In African most developing countries for example Nigeria are affected by, macroeconomic factors which are key variables affecting financial performance of manufacturing enterprises (Owolabi, 2017). Desina (2018) in his article Africa's manufacturing sector can lead trek to global economy opines that the continents GDP was to grow at a rate of 4.1% in 2018 compared to 3.6 % in 2017. In spite of this expectation, the economic growth has not created enough job opportunities for the youth and women and the continents potential can be unlocked by transforming from agricultural to manufacturing.

In Kenya manufacturing sector is considered as one of the key segments of the economy by the government. Audax (2018) explain that the sector is undergoing a harsh economic times which poses a greater challenge to its performance. The 2030 vision blueprint emphasizes that the sector is expected to grow at a rate of 8 percent for the period of 20 years (Republic of Kenya, 2013). Were (2007) opines that manufacturing sector contributes 10% to the gross domestic product and 12.5 percent to total Kenya exports.

Manufacturing sector in any economy is viewed as an important element of a health and vibrant economy. Despite this expectation manufacturing sector in Kenya is largely considered as a sleeping giant and is beleaguered by obstacles. The financial performance of the sector to the economy is worrying after the realization that other sectors of the economy such as telecommunication and real estate has supposed its contribution to the GDP. This underperformance, financial challenges, low production and quality control problems has forced some firms in the sector to close businesses while others are seeking bail outs. The sectors expected contribution to gross domestic product is at 20 percent, while its total contribution to the gross domestic product has remained at an average of 10 percent for more than 10 years. This may be partially attributed to macroeconomic factors fluctuation.

It is not clear to what extent economic growth rate, affect financial performance of firms in the sector, which is important to be understood. The success of firms in this industry may be pegged on the stability of macroeconomic factors affect their financial performance. The objective of this study was to examine whether economic growth rate has an effect on the financial performance of listed manufacturing firms at Nairobi Securities Exchange (NSE). The study hypothesized that there was no statistically significant of effect of level of economic growth on the financial performance of listed manufacturing firms at NSE.

2. REVIEWED LITERATURE

The Modern Portfolio Theory (MPT), developed by Harry Markowitz in 1952, is a theory which explains how risk-averse investors can construct portfolios to optimize expected returns based on a given level of market risk (Pandey, 2009). The theory is applied while choosing the most efficient investments from available alternatives by analyzing different portfolios of a given securities and by selecting securities that moves in different directions. This theretical model therefore shows investors how to reduce their risk, based on expected returns (mean) and the standard deviation (variance) of the various portfolios. The theory attempts to maximize the expected returns of a portfolio, for a given amount of portfolio risk, or minimize risk for a given level of return by perecautionaly selecting the proportions of various assets mix.

Manufacturing firms being exposed to macroeconomic and firm specific factors the theory posits that though the returns of a particular investment are affected by both systematic and unsystematic risk, diversification of these risks reduces the impact of the loss to the firm. The specific risks are measured through Beta in comparison to the whole economy. The MPT also assumes that investors are rational and the markets are efficient, it emphasizes maximizing returns while minimizing risks, while giving recognition to the existence of systematic and non-systematic risks. These concepts are usually referred to when discussing financial investments (Pandey, 2009). The theory is relevant to the current study

because it provides explanations on how investors mitigates risk exposures, that is, changes in macroeconomic environment which effects financial performance of the listed manufacturing firms. The theory has been applied in studies by Murungi (2013) on the relationship between macroeconomic variables and financial performance of insurance companies, and Gikombo & Mbugua, (2018) on how select macroeconomic variables affect the performance of listed commercial banks in Kenya.

Several scholars have carried out studies on the determinants of financial performance of firms in Kenya and other countries. However a number of studies imply that there is a significant effect between economic growth rate and the financial performance of manufacturing firms while others give differing conclusions. Growth in gross domestic product realized in the country's economy is a product of each stakeholder or participant performing more economic activities that translates to the firms making higher profits (Gikombo, 2018). Irungu & Muturi (2015) looked at the impact of macroeconomic variables on performance of firms listed in energy sector. The study found that there is no significant relationship between GDP measured by annual gross domestic product fluctuations and firm performance

Furthermore, Illo (2012) investigated the effects of macroeconomic variables on the financial performance of commercial banks in Kenya. The study used GDP growth rate , exchange rate, interest rate and inflation rates as the macroeconomic variables affecting banking sector financial performance.The study sampled a total of 10 commercial banks for a period of 10 years, from 2002 to 2012. Regression analysis was used with the macroeconomic factors taken as the independent variables and Return on Assets (ROA) taken to be the dependent variable. Commercial banks financial performance was found to be positively correlated with money supply, interest rates and GDP growth. Irungu and Muturi (2015) On the other hand explains that their is negative relationship between inflation rate and depreciation of the local currency.

In addition, Njau (2013) did a study to investigate the effect of selected macroeconomic factors on financial performance of private equity firms in Kenya. The study employed factors which the researcher perceived were having the empirical support from previous studies with the highest effect on financial performance of PE firms as measured by Return on investment. The study considered inflation rate, GDP growth rate, bank lending rates, exchange rate of dollar versus Kenyan shilling and systematic risks as independent variables while return on investment was the dependent variables. The error term was used to representative of other factors which were not included in study regression model. The study covered period a period from 2005 to 2012 for every quarter of a year for eight years giving 32 observations. The study analyzed data by employed a multivariate regression model. The study concluded that financial performance measured by ROI is mainly influenced by the selected macroeconomic variables with GDP having the greatest influence while systematic risk depicts least influence.

Moreover, Muchiri, Muturi & Ngumi (2016) conducted a study on the relationship between financial structure and financial performance of firms listed at East Africa Securities Exchange. The study employed explanatory research design and the finding were that gross domestic product growth rate has a significant moderating effect on financial performance of firms. Based on the above review, it is evident that information as to how changes in economic environment may interact with financial performance of listed manufacturing companies is thin in the Kenyan literature.

3. METHODOLOGY

This study adopted a descriptive research design which is explanatory in nature. The descriptive research design was used for this study based on secondary data to quantitatively model the effects of economic growth rate with financial performance using statistical techniques.

This study target population was nine manufacturing firms listed at Nairobi Securities Exchange for the period ranging from 2013 to 2017. To ensure homogeneity of the sample, all the listed manufacturers was censured thus the likelihood that the results could be due to spurious correlation caused by unobservable heterogeneity was significantly reduced. Kothari (2004) maintains that when the universe or population in a given category is a small one, like being below 30, there is no need resorting to a sample survey but rather a complete enumeration or census. This study therefore used a census of all the nine manufacturing firms listed at NSE from 2013 to 2017.

This study used a data collection sheet to extract the required secondary data for the period 2013 to 2017. While, data on economic growth was obtained from Kenya Bureau of Statistics and Central bank of Kenya databases, data for computing financial performance – profitability and assets – was obtained from the firm's financial statements. Data collection sheets were used to collect the secondary data from various sources for a period of five years from 2013 to 2017. In cenral bank

of Kenya records on the GDP growth rates and were obtained. Financial statements of the nine respective manufacturing companies were obtained. From these financial statements, financial performance proxed by ROA was calculated.

3.3 Analytical Model

Using the quantitative data collected, calculation of necessary financial ratio was computed and before the data collected was analyzed several tests were conducted to check on presence of unit root, multicollinearity and serial correlation. The data was then analyzed using regression analysis via STATA in accordance with the objectives of the study using inferential statistics to drive conclusions. A t-test at 5% level of significance was used to determine significance of the whether individual variables. Finally, the analysis of variance (ANOVA) was used to reveal the overall model significance. A multivariate linear regression analysis was conducted to evaluate how the independent variables were significantly related to return on assets. The analytical model was specified as below:

$InY_{it} = \beta_0 + \beta_1 InIR_t + \beta_2 InER_t + \beta_3 InEGR_t + \varepsilon_i$

Where:

InY_{it} = Natural log of financial performance for the *ith* firm measured by ROA at time t.

$InIR_t$ = Natural log of inflation rate at time t.

$InER_t$ = Natural log of exchange rate at time t.

$InEGR_t$ = Natural log of economic growth rate at time t.

β_0 - β_3 = *a*re the coefficients to be determined.

ε = the error term

4. RESULTS AND DISCUSSION

4.1 Descriptive Results

The descriptive characteristics of the study variables in Table 1 indicate that the mean financial performance of the firms was 0.166 as measured by net income divided by average total asset. The median was 0.184 while the maximum return on assets recorded was 0.211 while the minimum was 0.104 with a standard deviation was 0.0756. The inflation rate for the period had a mean of 6.703, a median of 6.64 and standard deviation of 0.637. The highest recorded rate of inflation was 11.18 and the lowest was 4.079. Exchange rate had a mean rate of 94.622, median of 98.17 and standard deviation of 9.37. The highest recorded exchange rate was 101.54 while the lowest was 86.11. lastly, economic growth rate as measured by the percentage change in GDP indicated a mean value of 0.432, median of 0.054 and standard deviation of 0.034, maximum value of 0.059 and minimum at 0.049 as seen in Table 1 below.

Table 1: Descriptive Statistics

	InFP	**InIR**	**InER**	**InEGR**
Mean	0.165518	6.703177	94.622	0.432
Median	0.184456	6.637573	98.17	0.054
Maximum	0.211422	11.17558	101.54	0.059
Minimum	0.104522	4.078618	86.11	0.049
Std. Dev.	0.07559	0.637455	9.376236	0.034
Observations	45	45	45	45

4.2 Regression Results

Regression analysis was carried out to determine the amount of variation in financial performance explained by economic growth rate. The calculated R-square was 0.56486 while the adjusted R-square value was 0.55543 which means that 55.5% of the variation in financial performance can be explained by a change in economic growth rate. The rest of 44.5% can be explained by other factors not in the model. The results of the analysis are shown in Table 2.

Further, the analysis of variance indicates that the model fit was appropriate for the data. The F-value was 19.654761 with a p-value of 0.0000 which was less than 0.05 implies, thus the overall model was significant in predicting the variations in financial performance of listed manufacturers. Hence, the study rejected the null hypothesis that economic variables had no statistically significant effect on financial Performance of listed manufacturing firms at Nairobi Securities Exchange. This finding is in agreement with Menike (2006) findings in Sri Lankan indicating that most of the listed companies reported a higher coefficient of determination which justifies higher explanatory power of exchange rate, interest rate, inflation rate and GDP growth rate.

Table 2: Multiple Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
InIR	-0.43788	0.076109	-5.753324	0.0031
InER	-0.69342	0.223369	-3.104368	0.0000
InEGR	0.58320	0.084820	6.875732	0.0532
Constant	0.48006	0.077302	6.21020	0.000
R	0.75160			
R-squared	0.56486			
Adjusted R-squared	0.55543			
F-statistic	19.654761			
Prob	0.000000			

Table 2 shows that there was a negative beta coefficient of 0.43788 for inflation rate with a p-value = 0.0031 which was less than 0.05. The results therefore reveals an inverse relationship between inflation rates and financial performance such that a unit change in inflation rate leads to a change 0.43788 units in the opposite direction and that when inflation rate is not existent, the financial performance of firms will still be positive at 0.48006 units. The model can provide information needed to predict financial performance of firms listed at the NSE from inflation rate. The findings show a significant negative effect of inflation rate on the financial performance of listed manufacturing firms in Kenya. The results concurs with those of Osoro & Ogeto (2014) who found that inflation rate changes do have a significant effect on purchasing power and production costs in manufacturing industry, as well as Irungu & Muturi (2011) finding that inflation rate has a negative and significant with financial performance.

The results further indicates that there was a negative beta coefficient of 0.69342 as indicated in the coefficient's matrix with a p-value = 0.0000 and a constant of 0.335 with a p-value of 0.000 which was less than 0.05. Hence, the model can provide information needed to predict financial performance of firms listed at the NSE from exchange rate. The study failed to accept the null hypothesis that exchange rate has no statistically significant effect on financial performance of listed manufacturing firms. This finding is in line with those of Runo (2009) and Mbithi (2013) who established that volatility of exchange rates affects the cash flows and this eventually has a significant impact on financial performance of firms in the manufacturing sector. However, Ruhomauu, Saeedi & Nagavhi (2019) findings revealed that exchange rate had a nonsignificant negative impact on financial performance of firms.

Output from the regression analysis further shows that there was a positive beta coefficient of 0.5832 with a p-value = 0.001 which was equal to 0.05 alpha value. Therefore, the regression equation reveals a positive effect of macroeconomic factors on financial performance where a unit change in these variables leads to 0.5832 unit variation in financial performance. This implied that a change in economic growth rate would lead to a positive change in manufacturing firm's performance. When the above macroeconomic variables are non-existent, firm financial performance will be positive at 0.4801 units. The findings agrees with Illo (2012), Kapchanga, Owili & Onyuma (2018) who established that GDP growth rate, currency exchange rate and inflation are the main macroeconomic factors affecting listed companies financial performance, as well as Njau (2013) who found that the financial performance of private equity firms in Kenya was determined by economic growth rate.

5. CONCLUSIONS & RECOMMENDATIONS FOR POLICY

There seems to be a significant positive effect of economic growth rate on the financial performance of listed manufacturing firms listed at NSE, where a positive growth rate leads to positive financial performance. Any growth in gross domestic product in an economy is as a result of more economic activities being performed by the economic units, leading to high firm profitability. Changes in currency exchange rate and inflation rate affect manufacturing firms through

exports and imports, which may affect their cost structures thus affceting profits earned (Onyuma & Ochieng'; 2017; Onyuma & Kibet, 2017) and other metrics of financial performance manufacturers. Therefore, GDP growth rate, currency exchange rate and inflation are the main macroeconomic factors affecting listed manufacturers' financial performance.

The study recommends that the government and the regulatory agencies should make sustainable efforts to ensure that a desired GDP growth rate is attained by providing polices which are in favor of growth of manufacturing firms in Kenya. Since this study only focused on a few listed manufacturers, future studies could consider covering all the large manufacturing firms both privates as well as listed ones. In order to give a complete picture of how changes in the macroeconomic factors affects the whole manufacturing sector. Such studies could also consider including other macroeconomic variables not considered in the current study such as money supply and interest rate, as well as other financial performance measures such return on equity.

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