Effects of Foreign Exchange Determinants on Financial Performance of Manufacturing Firms Quoted at the Nairobi Securities Exchange

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Abstract

Kenya has in the recent past experienced great fluctuations in financial performance surrounding its manufacturing industry. The study aimed at determining the extent to which foreign exchange determinants affect the financial performance of manufacturing firms listed in the NSE in Kenya. The target population of 232 respondents was derived from 9 manufacturing firms quoted at the NSE. Samples for the study were drawn using stratified random sampling technique. A sample size of 146 respondents was derived using the Yamane’s formula. Self-administered questionnaires were used as a tool for primary data collection. Descriptive statistics and correlation analysis were used to analyze the data using Microsoft Excel Spreadsheet and the SPSS software. The results of the analysis have been presented by use of tables. A total of 110 complete responses were used for the analysis. The Pearson’s correlation coefficient and multiple regression analysis were used for hypotheses testing. The study revealed that there is significant effect of foreign exchange determinants on the financial performance of manufacturing firms quoted at the NSE. The study recommended manufacturing firms to expose their managerial staff to trainings to enhance their capabilities and to respond to changes in the macro-economic environment. The study also recommended that the Government should implement foreign exchange policy that will control and stabilize the foreign exchange fluctuations. By use of lobbying groups, the firms should also interact with the Central Bank of Kenya to put in place measures to monitor the interest rate spread in the economy.

Key words: Foreign Exchange, Inflation Rate, Interest Rates, Political Stability, Public Debt, Financial Performance, Manufacturing Firms, Nairobi Securities Exchange

1. Introduction

The business arena today has become very unpredictable, dynamic and turbulent majorly due to increased globalization, stiff competition and rising markets. Macro-economic factors such as risk, uncertainty and volatility on manufacturing companies have a bearing on their profits and particularly in developing countries. Factors such as inflation rate, interest rate, the amount of public debt and the political stability are among factors within the current business setting that affect the profits of the companies (Oduor, 2014).

A company while performing its day to day activities becomes exposed to potential gains and losses due to variations in the values of its assets and liabilities that are denominated in foreign currencies. Various activities such as importing, exporting and investments across borders makes a firm vulnerable to foreign exchange risks. During the existence of the 1944 Bretton Woods Agreement, interventions by Central Bank in foreign currency markets were often and therefore relatively slight changes in the exchange rates. The managers could at that time afford to ignore the foreign exchange exposure. However, since the breakdown of the Agreement in 1973, exchange rates have fluctuated freely for major currencies. The values of the assets and liabilities denominated in foreign currency constantly change thereby creating foreign exchange risk. Managing foreign exchange risk forms the most difficult and persevering problem for managers of multinational corporations (Oduor, 2014).

Eichengreen (2016) studied globalization of business activities by looking at the percentage of overseas profits for well-known corporations in America. The study was concentrated on the percentage of revenue originating from the overseas and the costs thereon. Most of the companies he conducted research on showed, on average, more than half dependency on foreign markets. He concluded that American companies are really an international concern as they greatly depend on overseas market. He further adds that for a company to compete effectively with others it must produce and sell globally. This globalization of business activities exposes the firm to multiple currencies and hence leading to foreign exchange risk.

Foreign exchange market is undoubtedly the world’s largest financial market. Williams (2018) defined a financial market as one where a country’s currency is exchanged for another one. Not all but a few common currencies are traded in the financial market. They further explained that the market is an over the counter market and therefore it is not a single location where traders
get together to do such transactions. Major participants are commercial and investment banks around the world. The price of a country’s currency is determined by market forces existing within a day and thus the fluctuation of the exchange rate.

Companies in developed countries like America and Japan are greatly affected by foreign exchange rate changes as they trade globally. However, the companies in these developed countries have managed to mitigate the risk of Forex fluctuations by hedging with financial instruments such as currency futures and swaps and in addition to that they also have constant refresher courses on currency risk management to better handle the potential impact that the currency rate changes have. Therefore, the managers managed to reduce the risk as they have better understood how different risks work and interact. The companies in developing countries like Camero, Democratic Republic of Congo, Tanzania, Uganda, Algeria and Kenya seem to manage only the most visible risk that may occur from large transactions and hedge them using the available financial instruments. However, these do not necessarily work for every currency risk as companies often faced with greater exposure from the less obvious risks such as mismatch between investments and cost in one currency vis-à-vis revenues earned in another currency, that are more difficult to manage (Goedhart, Koller, & Rehm, 2015).

1.1 Foreign Exchange Rate Fluctuation

Foreign exchange rate system had been a floating one in most countries since 1970s. Thomas (2015) in his research showed that nations permitted exchange rates to change from day to day in the market based on the market forces. Prior to this the central banks of all nations intervened in determination of the exchange rate which meant that international transactions were less dynamic and hence not subjected to exchange rate fluctuation risk. Since the collapse of the exchange rate system, rates are determined by the market forces exposing international transactions to fluctuation risk.

A firm is exposed to foreign currency exposure whenever it has an income, expenditure, asset or liability in a currency other than that of the balance sheet currency. However, it is also possible for exposure to arise in the absence of the above four items. The cash flows of a business can be destabilized significantly by extremely volatile exchange rate changes due to presence of a certain condition in the market. Volatility of exchange rates is affected by two important variables: the relative price of goods within two countries and their relative interest rate. The Theory of Purchasing Power explains the relationship between the price of goods and exchange rates. This theory puts forward that under a floating exchange regime, a relative change in the purchasing power parity for any two currencies calculated as a price ratio of traded goods would tend to be approximated by a change in the equilibrium rate of exchange between those two currencies (Oduor, 2014).

2. Research Problem

The result that foreign exchange determinants have on the financial performance of manufacturing firms quoted at the NSE is quite a complex and unique area given the fact that the exchange rate are always fluctuating in the country with periods of significant depreciation of the home currency Kenyan Shilling, which has negatively impacted on the economy.


One of the pillars of Kenya’s Vision 2030, the economic pillar has focused on the manufacturing sector in Kenya in order improve the economic growth of the country. Measures have been put in place to build up the performance of this sector, however, the financial performance of the companies in this sector have not improved (Karanja & Wagana, 2017). Developed countries like the United States of America have successfully managed to control the exchange rate fluctuations by implementing an exchange rate policy. Developing countries such as Kenya are still lacking on the implementation of such a policy that will assist in the control of foreign exchange fluctuations. The principal objective of liberalizing the foreign exchange market in Kenya was to allow the market forces of demand and supply to determine the price of selling and buying currencies. Despite this it lost the nominal anchor to tie down the domestic prices and this has been characterized by the volatility of the exchange rate and the spread between the buying and selling prices of foreign currency (Lagat & Nyandema, 2016).

The studies conducted in this area of foreign exchange and financial performance are based on different industry sectors such as banking (Otieno, 2017), oil marketing (Farah, 2014) as well as the entire list of quoted companies at the NSE (Williams, 2018). However, there is need to understand the effect of foreign exchange on the manufacturing sector in Kenya. Further, there is an oversight of qualitative factors that affect the financial performance as the studies conducted mostly focus on quantitative data which are derived from secondary sources. Therefore, there is need for a research that will focus on the effect of foreign exchange determinants on the financial performance of manufacturing sector.
3. Study Objective

The objective of this study was to determine the effects of foreign exchange determinants on financial performance of manufacturing firms quoted at the Nairobi Securities Exchange.

4. Review of Literature

4.1 Theoretical Framework

4.1.1 Purchasing Power Parity Theory

This theory was developed by Gustav Cassel in 1918. It is found on the concept of law of one price, whereby similar goods have the same price but in different markets when the price is expressed in the same currency. This theory is based on the assumption that there are no barriers to trade and there are no transaction costs. In other words, the difference in price change at home and abroad is the difference in rate of inflation which is equal to the percentage increase/decrease of the rate of exchange (Lyke & Odhiambo, 2017).

The theory therefore asserts that over any period, the movement in exchange rate between two currencies is as a result of movement in relative price levels of two countries. The theory has also been referred to as “inflation theory of exchange rate determination”. The theory is limited by the assumption that the equilibrium exchange rate is a static phenomenon. Explanatory variables for developing countries mainly include commodity price movements, productivity and real interest differentials compared with other trading partners and the extent of net foreign assets (Chipili, 2016).

Simply, the theory asserts that there is an impulse – response relationship between price and exchange rate. The theory explains that identical goods in different countries, in the long run, should cost the same in those countries. It is based on the belief that the arbitrage opportunity of buying a product in one country and selling in another will be eliminated by the adjustment in exchange rate. The implication of this theory is that goods and services should cost the same regardless of the country after necessary adjustments are made for the rates of exchange between the two countries (Al-Zyou, 2015).

4.1.2 Location Theory of International Investment

Alfred Weber developed this theory in 1909 and it can be used to explain the emergence of multinational corporations (MNCs). This theory can be divided into two. The supply oriented location theory explains that MNCs prefer production to take place where the production and distribution costs are the lowest. The demand oriented location theory asserts that the location of a company is determined by the market location. When these two theories are combined, the factors influencing the emergence of MNCs are determined to be as the raw materials, distribution costs, and cheap labour and protected markets. This theory suggests that MNCs prefer to trade in countries where they are assured of stable markets which may be in terms of stable supply of raw materials and labour and political stability (Beugelsdijk, Brakman, Van & Garretsen, 2015).

The theory asserts that the pattern of economic activities can be explained in terms of the transport costs which include insurance costs on the raw materials and goods en route. The costs incurred and the inconvenience caused in shipping the procuring the raw materials from distant sources and shipping finished products to distant customers induce the producers to move near to the markets or raw materials. The decision to either move towards the raw materials or the market will entirely depend on the relative cost of assembling the materials and distributing the finished products. Many firms tend to locate where the transfer costs are at a minimum (Gbakeji, 2014).

4.1.3 Rational Expectations Theory

This theory was developed by John F. Muth in 1961. This is a theory of interest rate based on the fact that expectations are formulated on the basis of all information available in the market. The theory holds that the estimation for future interest rate is the current spot rate. Any variations from the spot rate are primarily due to changes in factors such as the amount of borrowing, regulatory framework or any other unexpected information. The limiting factor of this theory is that it is difficult to gather information and understanding how the general public will use that information to form their expectations (Friedman, 2017).

The theory is based on two major assumptions; average expectations in an industry are more accurate than models, although there might be considerable difference in opinions and reported expectations underestimate the extent of changes that actually take place. Expectations are informed predictions about the future events and therefore they are called “rational”. However, it is argued that these rational expectations may be inadequate to explain especially due to changes over time (Hall & Sargent, 2018).

A man’s expectations may be distinguished in two ways; static expectation and adaptive expectations. Static expectations are given by the last predicted value and they assume that no change is expected in future. Adaptive expectations are based on extrapolation of recent developments into the future. However, the rational expectations theory disapproves this approach and
suggests that expectations are the same as the predictions of relevant economic theory. The theory assumes that people make the maximum use all the information available including current and prospective policies to forecast the future (Frommel, 2017).

4.2 Conceptual Framework

Conceptual framework is a concise description of a phenomenon under research accompanied by a visual presentation of variables of study (Mbovu & Mburu, 2018). Eldridge, Lancaster, Campbell, Thabane, Hopewell, Coleman and Bond (2016) defined conceptual framework as a diagrammatical representation that explicitly shows the relationship between the independent and the dependent variables. The conceptualization of variables in a study is important as it forms the basis for the hypotheses testing and devising findings of the study (Odhiambo & Waiganjo, 2014). The conceptual framework considered the relationship between foreign exchange determinants and financial performance of manufacturing firms quoted at the NSE.

![Figure 1 Conceptual Framework]

4.3 Discussion of Key Variables

4.3.1 Inflation Rate

When writing about the rise in prices in a country, the term inflation is used. However, studies reviewed have revealed that inflation can be defined in different ways. The general idea suggested is that it is a “too rapid increase in volume of currency” It can be also described as the increase in commodity prices in a country. Inflation affects all sectors of the economy including international trade. The high prices are unfavorable for trading and carrying out numerous transactions, therefore, it is assumed as an economic crisis and hence the government ensures that inflation levels are controlled at any given time. However, inflation can also effect positively when a company invests heavily before the inflation period and later enjoys the benefits during the inflation period (Arthmar & McLure, 2017).

Shaari, Ahmad and Razali (2018) researched on the effect of inflation on financial performance of commercial banks. The study set out that inflation and financial performance are negatively related. The increase in inflation decrease the company’s
profits, however, there was no clear pattern for the total cash flows and assets. She concluded that inflation rate have a strongest clear pattern with the banks’ profits and therefore significant association with the financial performance of the banks.

Zermeno, Martinez and Preciado (2018) performed a study on inflation and financial performance in 84 developed and developing countries. Their study revealed that inflation rate decreases the level of financial development, mainly in developing countries where the effect was found to be stronger. However, the study did not conclude on the effect on developed countries as no robust evidence was obtained for a conclusion to be derived. Despite the lack of evidence, the study observed that inflation rate in the developed economies have been kept under control over a long period which has enabled them enjoys a relatively stable macroeconomic atmosphere. The study concluded that a non-linear association exists between inflation and financial performance.

Khan (2015) conducted a study on the impact of inflation on financial development in Pakistan for the period 1991-2011. The study discovered that there is a negative effect of inflation on the financial development in Pakistan. He concluded that inflation leads to reduction in efficiency of the financial sector in both short and long run.

4.3.2 Interest Rate

Interest rate is the price for obtaining finances either for conducting a business or for investment. It is the amount that is calculated as a percentage of the overall balance outstanding in a given time period. The interest rate affects the financial performance of an organization when the organization borrows monies from financial institutions. This loan may be borrowed in home currency or in foreign currency. Loans that are borrowed in foreign currency bring in the aspect of foreign exchange rate fluctuations. The higher the rate of exchange the higher the interest cost therefore reducing the financial performance of the organization (Harswari, 2017).

Mnang’at, Namusonge and Oteki (2016) in their study of SMEs in West Pokot County concluded that banks SMEs are dissatisfied with the time it takes to secure the loan from Banks and other lending institutions. The needs of the SMEs are surpassed due to the duration taken to obtain credit. The rate of interest on the long term financing also lead to decrease in the financial profit of the SMEs, therefore, SMEs find it more appropriate to use short term financing as it is cheaper.

A study conducted by Ngure (2014), on the effect of interest rate on financial performance of commercial banks in Kenya displayed that there is a linear relationship between interest rate and financial performance for the banking sector. The higher the interest rate the higher the profits of the bank. However, one of the limitations noted in this research was that the high rate of interest did not lead to reduction in demand for loans. This implied that the demand for borrowings in Kenya was inelastic.

Odalo, Achoki and Njuguna (2016) in their study of influence of interest rate on financial performance of agricultural firms listed at NSE concluded that the interest rate influence the financial performance of the agricultural firms significantly. The study also recommended that the financial institutions should involve these firms while setting up interest rate policies as an increase in the level of interest can consequently decrease the financial performance of the agricultural firms.

4.3.3 Political Stability

Political stability determines the amount of investment that the foreign investors will do in a country. The foreign investors need to be assured that their investment is safe and will yield them good returns. If a country is politically stable, there will be more investments by foreign investors which will increase the performance of the country’s economy and this will lead to an increase in the value of the home currency against the foreign currency. The exchange rate of the home currency against the foreign currency will decrease any therefore any organization that transacts in that foreign currency will benefit, increasing its financial performance (Prechel & Morris, 2014).

Maina (2014) studied the effect of political risk on the financial performance of Kenya Airways Ltd and reported that political risk has a significant negative influence on the financial performance of the Airline. He further added that for the Airlines’ performance to improve political stability is a must and the government needs to ensure that political risk is controlled.

According to Roe and Siegel (2015) political stability has a substantial and significant impact over financial development over many decades. They insisted the political stability needs to be added as one of the core factors that determine financial development around the world. They argued that political instability harms the financial markets which lead to financial backwardness. Political stability is seen as being able to protect the investors and development agencies have been tasked to ensure that. The study concluded that understanding political stability is foundational for finance and should help in explaining the cross-country differences in financial development.

4.3.4 Public Debt

Public debt is defined as how much a country owes to its outside lenders. Public debt is usually also referred to as national debt (Amadeo, 2018). The main focus, when it comes to public debt, lies in the relationship between the public debt and the economic
growth of the country. The traditional view suggests that in the short term, aggregate output is increased, however in the long run, investments are reduced which harms the economy and thereby affecting the financial performance of companies (Kim, Ha & Kim, 2017).

Kobey (2016) found out that heavy debt burden leads to increase in taxes to finance the high debt service payments, therefore, a negative relationship exists between debt and financial performance. Mwaniki (2016) explained that bank loans borrowed by the government have a negative impact on the economic performance of the country. This may be because of the high interest rate on the borrowings that affect the investment activities in the domestic economy negatively. The study revealed that external debt is a crucial determinant of the economic performance of the country which will in turn have a direct impact on how the other countries compare with the home country.

According to Hukkinen (2017), there exists an inverse relationship between public debt and economic growth; however, the economic implications of these findings are not clear due to the causality issue which cannot be resolved. The study also mentions that the changes in public debt not only depends level of income but also on the sizes of fiscal multipliers and the time horizon. Public investment during depression is much different from the investment done during economic booms. He concluded that excessive debt slows down the economic growth.

Fochmann, Sachs, Sadrieh and Weimann (2018) explain in there study that increased public debt leads to intergenerational transmission of tax burden to the future generation. The study also reveals that implementation of a prudent public debt policy will avoid excessive indebtedness. In the USA, excessive public debt has from time to time triggered brief illiquidity for the central government.

### 4.3.5 Financial Performance

The research will focus on financial measures that are important for the success of the organization. From the literature reviewed the most common financial measures used are the Return on Assets (ROA) and Return on Equity (ROE) (Peters & Bagshw, 2014; Ngure, 2014). Kobey (2016) employed the use of percentage of the GDP. Odalo, Achoki and Njuguna (2016) employed Return on Assets (ROA), Return on Equity (ROE) and Earnings per Share (EPS). Khan (2015) employed the use of GDP, bank credit to private sector and the social spending. Flammer (2015) employed Return on Assets (ROA) and Net Profit Margin (NPM).

Therefore, the study measured the financial performance by analyzing its profitability in terms of Return on Assets, Return on Equity and Return on Capital Employed. Return on assets is the expressed as a percentage of net income to the total assets. The formula was decomposed as follows: Return on Assets = EBIT / Average total assets (Rozendaal, Malevergne & Sornette, 2016). Return on equity is the expressed as a percentage of net income to the shareholders equity.

Return on equity measures a firm’s performance by calculating how much profit a firm has been able to generate from the monies that the shareholders have invested. It is computed by dividing the net profit by the equity (Demaria, 2015). Return on capital employed refers to the amount of net income returned as a percentage of the capital employed. Pradhan and Shrestha (2017) used the return on capital employed to measure the efficiency and profit generating ability of a firm’s capital investments. It is expressed as: EBIT / Capital employed.

### 5. Research Methodology

The study adopted a cross sectional survey research design whereby a mix of both quantitative and qualitative data will be used to establish the effects of foreign exchange fluctuations on financial performance. As described by Creswell (2014), use of both quantitative and qualitative data provides different type of information. Use of the mix of data provides a better understanding of the research problem. The design was adopted as it was deemed to be the most effective to significantly contribute to the specificity and depth of the study (Mbuvi, Namusonge & Arani, 2016).

The target population for this study was 232 respondents derived from the Imports Department, Accounts Department, Finance Department and Sales Department of 9 manufacturing firms that are listed on the NSE as at March 2019 as shown in Table 1.

Stratified random sampling was used for the study as the target population is stratified in terms of departments. The reason for this is that the respondents required for this research have to be knowledgeable in the area being studied. Therefore, the stratum will comprise of officers in these firms that deal in processes which involve trading in foreign currency. The advantage of this sampling method is that it provides assurance of equitable distribution of the target population (Dolnicar, Grun, & Leisch, 2016).
The formula developed by Yamane in 1967 was adopted to arrive at the sample size for the study:

\[ n = \frac{N}{1 + N(e)^2} \]

Where,
- \( n \) = sample size
- \( N \) = target population
- \( e \) = margin of error at 5%

\[ n = \frac{232}{1 + 232(0.05)^2} = 146 \]

Using the above formula a sample size of 146 respondents was derived. Proportionate random sampling was then used to select samples from each stratum to ensure that there is equal representation. Table 2 below illustrates the total population in each firm for the four strata’s selected and sample size:

**Table 2 Sample Size**

<table>
<thead>
<tr>
<th>S/No.</th>
<th>Business Name</th>
<th>Target Population (N)</th>
<th>Sample Size (n)</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>B.O.C Kenya Ltd</td>
<td>25</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>British American Tobacco Kenya Ltd</td>
<td>32</td>
<td>21</td>
<td>14</td>
</tr>
<tr>
<td>3</td>
<td>Carbacid Investments Ltd</td>
<td>28</td>
<td>18</td>
<td>12</td>
</tr>
<tr>
<td>4</td>
<td>East African Breweries Ltd</td>
<td>35</td>
<td>22</td>
<td>16</td>
</tr>
<tr>
<td>5</td>
<td>Mumias Sugar Co. Ltd</td>
<td>15</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>6</td>
<td>Unga Group Ltd</td>
<td>22</td>
<td>13</td>
<td>9</td>
</tr>
<tr>
<td>7</td>
<td>Eveready East Africa Ltd</td>
<td>24</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>8</td>
<td>Kenya Orchards Ltd</td>
<td>12</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td>Flame Tree Group Holdings Ltd</td>
<td>39</td>
<td>26</td>
<td>18</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>232</td>
<td>146</td>
<td>100</td>
</tr>
</tbody>
</table>

6. Data Analysis and Discussion

6.1 Descriptive Analysis

This section outlines the descriptive results on inflation rate, interest rate, political stability, public debt and financial performance. The analysis performed covered calculation of the mean and standard deviation for all the variables of the study included in the questionnaire. Likert scale of 1 – 5 was used to quantify the responses received from the survey questionnaire, where 1 = Strongly Disagree and 5 = Strongly Agree.

6.1.1 Inflation Rate

The first objective of the study sought to determine the effect of inflation rate on the financial performance of manufacturing firms quoted at the NSE. Respondents were asked to give their opinions on set questions relation to inflation rate. The statement that unemployment rate affect the country’s inflation rate had the highest mean of 4.96 and a standard deviation of 0.268. The statement the amount of international trade affects inflation rate had a mean of 4.95 and a standard deviation of 0.284, followed by
the amount of money supply with a mean of 4.88 and a standard deviation of 0.444 and lastly the GDP growth rate with a mean of 4.86 and standard deviation of 0.670. Table 3 below presents the results of descriptive statistics for all items for inflation rate.

<table>
<thead>
<tr>
<th>Statement</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The amount of money supply affects the inflation rate</td>
<td>110</td>
<td>4.88</td>
<td>.444</td>
</tr>
<tr>
<td>The amount of international trade affects the inflation rate</td>
<td>110</td>
<td>4.95</td>
<td>.284</td>
</tr>
<tr>
<td>Unemployment rate affects the country’s inflation rate</td>
<td>110</td>
<td>4.96</td>
<td>.268</td>
</tr>
<tr>
<td>The GDP growth rate affects the inflation rate</td>
<td>110</td>
<td>4.86</td>
<td>.670</td>
</tr>
</tbody>
</table>

The findings of the study are supported by the study done by Zermeno, Martinez and Preciado (2018), where they found that the estimated coefficients of inflation rate had a higher degree of heterogeneity on the different quantiles of finance distribution. Ahmed (2015) examined the relationship between inflation rate and financial performance of commercial banks and found that profits, assets and cash flows have a significant impact due to inflation rate.

6.1.2 Interest Rate

The second objective of the study sought to establish the effect of interest rate on the financial performance of manufacturing firms quoted at the NSE. Respondents were asked to give their opinions on set questions relation to interest rate. From the analysis, the influence of regulatory framework on interest rate had the highest mean of 4.15 with a standard deviation of 1.057. Secondly, the size of the company had a mean of 4.07 with a standard deviation of 1.123. The amount of borrowing had a mean of 4.05 with a standard deviation of 1.237. This was followed by the unemployment rate with a mean of 3.83 and a standard deviation of 1.400. Table 4 below presents these results. Mwangi (2017) found out in his study that lending rate has a positive influence on the financial performance of commercial banks.

<table>
<thead>
<tr>
<th>Statement</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The regulatory framework influences the interest rate</td>
<td>110</td>
<td>4.15</td>
<td>1.057</td>
</tr>
<tr>
<td>The unemployment rate influences the rate of interest on financial loans</td>
<td>110</td>
<td>3.83</td>
<td>1.400</td>
</tr>
<tr>
<td>The amount of borrowing influences the rate of interest on financial loans</td>
<td>110</td>
<td>4.05</td>
<td>1.237</td>
</tr>
<tr>
<td>The effect of interest rate on the financial performance depends on the size of the company</td>
<td>110</td>
<td>4.07</td>
<td>1.123</td>
</tr>
</tbody>
</table>

6.1.3 Political Stability

The third objective of the study sought to analyze the effect of political stability on the financial performance of manufacturing firms quoted at the NSE. Respondents were asked to give their opinions on set questions relation to political stability. The frequency of riots occurring received the highest mean of 4.91 with a standard deviation of 0.372, followed by the level of democracy affects the foreign investments in the country that had a mean of 4.84 and standard deviation of 0.498. Insurrection by a group affects the amount of foreign investments in the country had a mean of 4.77 with standard deviation of 0.463 and lastly the level of terrorism influencing foreign investments in the country had the lowest mean of 4.24 with a standard deviation of 1.173.

Table 5 presents the results of the descriptive statistics for all items of political stability. The study conducted by Roe and Siegel (2015), found out that political stability had a significant impact on the stock market development and it predicts a wide range of financial outcomes.
Table 5 Descriptive Results for Political Stability

<table>
<thead>
<tr>
<th>Statement</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The level of democracy effects the foreign investments in the country</td>
<td>110</td>
<td>4.84</td>
<td>.498</td>
</tr>
<tr>
<td>The level of terrorism influences the amount of foreign investments in the country</td>
<td>110</td>
<td>4.24</td>
<td>1.173</td>
</tr>
<tr>
<td>The frequency of riots occurring effects the financial performance of a company</td>
<td>110</td>
<td>4.91</td>
<td>.372</td>
</tr>
<tr>
<td>Insurrection by a group influences the financial performance of a company and amount of foreign investments in the country</td>
<td>110</td>
<td>4.77</td>
<td>.463</td>
</tr>
</tbody>
</table>

Valid N (listwise) 110

6.1.4 Public Debt

The last objective of the study sought to evaluate the effect of public debt on the financial performance of manufacturing firms quoted at the NSE. Respondents were asked to give their opinions on set questions relation to public debt. The economic growth of a country received the highest mean of 4.95 with a standard deviation of 0.403, followed by the availability of a free market with a mean of 4.94 and standard deviation of 0.254. The amount of accumulated foreign exchange had a mean of 4.90 and a standard deviation of 0.405 while the amount of interest paid had a mean of 4.76 with a standard deviation of 0.877. Table 6 presents the results of the descriptive statistics for all items of public debt. Pegkas (2019) found out from his study on government debt on economic growth in Greece that public debt has a positive contribution to economic growth in the long run.

Table 6 Descriptive Results for Public Debt

<table>
<thead>
<tr>
<th>Statement</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The availability of a free market influences amount of foreign trading in the country</td>
<td>110</td>
<td>4.94</td>
<td>.245</td>
</tr>
<tr>
<td>The amount of public debt affects the economic growth of a country</td>
<td>110</td>
<td>4.95</td>
<td>.403</td>
</tr>
<tr>
<td>The amount of interest paid on the public debt affects the financial performance of a company</td>
<td>110</td>
<td>4.76</td>
<td>.877</td>
</tr>
<tr>
<td>Amount of accumulated foreign exchange is affected by the amount of borrowing by the country</td>
<td>110</td>
<td>4.90</td>
<td>.405</td>
</tr>
</tbody>
</table>

Valid N (listwise) 110

6.1.5 Financial Performance

For improvement of financial performance, the statement rated highest was that which suggested that the return on assets decreased due to foreign exchange fluctuations which had a mean of 4.94 and a standard deviation of 0.413. The results also revealed that the return of capital employed had the lowest mean of 4.81 with a standard deviation of 0.697, followed by the return on equity and profitability of the firm both with a mean of 4.87 and a standard deviation of 0.576 and 0.431 respectively. Table 7 presents the results of the descriptive statistics for all items for financial performance. The study by Otieno (2017) found that foreign exchange determinants have an inverse relationship with financial performance as a unit increase of the independent variable leads to decrease in the dependent variable. However, study findings contradicts the findings of Pegkas (2019) who found that the direction of movement of the independent and dependent variable depends on how the management of the firm makes its predictions and decisions.

Table 7 Descriptive Results for Financial Performance

<table>
<thead>
<tr>
<th>Statement</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The return on assets has decreased due to foreign exchange fluctuations</td>
<td>110</td>
<td>4.94</td>
<td>.413</td>
</tr>
<tr>
<td>The return on equity has decreased due to foreign exchange fluctuations</td>
<td>110</td>
<td>4.87</td>
<td>.576</td>
</tr>
<tr>
<td>The return on capital employed has decreased due to foreign exchange fluctuations</td>
<td>110</td>
<td>4.81</td>
<td>.697</td>
</tr>
<tr>
<td>The profitability of the firm has decreased due to foreign exchange fluctuations</td>
<td>110</td>
<td>4.87</td>
<td>.431</td>
</tr>
</tbody>
</table>

Valid N (listwise) 110

6.2 Inferential Statistics
6.2.1 Coefficient of Correlation

The coefficient of correlation was computed using the Pearson Bivariate correlation coefficient to establish the correlation between the dependent variable (financial performance) and the independent variables (inflation rate, interest rate, political stability and public debt). The relationship between the dependent and independent variables is assumed to be linear with the correlation coefficient ranging from -1.0 (perfect negative correlation) to +1.0 (perfect positive correlation).

The results of Pearson correlation coefficients showed that there was positive correlation between the independent variables: inflation rate, interest rate, political stability and public debt and the dependent variable, financial performance implying that there was presence of linearity across all the variables and no indication of significant departure from normality. Inflation rate was positively and significantly correlated with financial performance \( (r = 0.689; \ p < 0.01) \), interest rate was positively correlated with financial performance \( (r = 0.259; \ p < 0.01) \), political stability was positively and significantly correlated with financial performance \( (r = 0.506; \ p < 0.01) \) and public debt was positively and significantly correlated with financial performance \( (r = 0.563; \ p < 0.01) \). Table 4.12 presents the correlation analysis with the values of Pearson correlation coefficient in matrix format across all variables. These results are in line with the findings of Otieno (2017) and Mwangi (2017) where they asserted that inflation rate and interest rate have a significant influence on the financial performance of commercial banks in Kenya. The results are also consistent with the findings of Roe and Siegel (2015) who found that political stability greatly affects the economic development of the country, hence affecting the financial performance of companies in that country.

### Table 8 Pearson Correlation Coefficients

<table>
<thead>
<tr>
<th></th>
<th>Financial Performance</th>
<th>Inflation Rate</th>
<th>Interest Rate</th>
<th>Political Stability</th>
<th>Public Debt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Performance</td>
<td>Pearson Correlation</td>
<td>.689**</td>
<td>.259**</td>
<td>.506**</td>
<td>.563**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>110</td>
<td>110</td>
<td>110</td>
<td>110</td>
</tr>
<tr>
<td>Inflation Rate</td>
<td>Pearson Correlation</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>110</td>
<td>110</td>
<td>110</td>
<td>110</td>
</tr>
<tr>
<td>Interest Rate</td>
<td>Pearson Correlation</td>
<td>.492**</td>
<td>.335**</td>
<td>.492**</td>
<td>.389**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>110</td>
<td>110</td>
<td>110</td>
<td>110</td>
</tr>
<tr>
<td>Political Stability</td>
<td>Pearson Correlation</td>
<td>.525</td>
<td>.728**</td>
<td>.167</td>
<td>.389**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>110</td>
<td>110</td>
<td>110</td>
<td>110</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).

6.2.2 Coefficient of Determination (R²)

A confirmatory factor analysis was conducted to assess the research model. The four factors identified in the study were subjected to linear regression in order to predict the causal relationship between the independent variables; inflation rate, interest rate, political stability and public debt, and the dependent variable, financial performance. Table 9 shows that 52.5% of the variations (Adjusted R Square = 0.507) on financial performance. This means that the remaining 47.5% can be explained by factors other than the ones proposed in the model.

### Table 9 Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.725*</td>
<td>.525</td>
<td>.507</td>
<td>1.09576</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Public Debt, Interest Rate, Political Stability, Inflation Rate

6.2.3 Analysis of Variance (ANOVA)
The significance of the overall model was presented using the ANOVA test. When testing for the significance level, if the p-value obtained was 0.05 or less, then the statistical significance was considered significant. ANOVA is used to test whether the regression model used is fit or not. The significance of F ratio was used to establish whether the model used was fit. According to Weeks and Namusonge (2016), if the value of F is significant, the model is considered fit and that the null hypotheses need to be rejected since it is not true.

The results of significance of the regression model in Table 10 shows that the p-value of 0.000 is less than 0.05 for all the independent variables which means that the null hypotheses is rejected. From the results obtained we can conclude that the model is significant in predicting how inflation rate, interest rate, political stability and public debt determine the financial performance of manufacturing firms quoted at the NSE. Based on a confidence level of 95%, the regression model achieved a high degree of fit at F = 29.028, p = 0.000. The results obtained are consistent with the findings of a recent research conducted by Otieno (2017) who found out that there is a significant positive effect of foreign exchange determinants of the banking sector in Kenya. Odoku (2017) in his research conducted on the impact of foreign exchange factors on profitability of manufacturing firms on the NSE, found out that foreign exchange factors have a strong positive influence of the profitability of manufacturing firms on the NSE.

### Table 10 Analysis of Variance

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regressor</td>
<td>139.417</td>
<td>4</td>
<td>34.854</td>
<td>29.028</td>
<td>.000</td>
</tr>
<tr>
<td>Residual</td>
<td>126.074</td>
<td>105</td>
<td>1.201</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>265.491</td>
<td>109</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Financial Performance  
b. Predictors: (Constant), Public Debt, Interest Rate, Political Stability, Inflation Rate

6.2.4 Regression Analysis

Multiple regression analysis was conducted to establish the causal relationship between the dependent variable, financial performance, and the four independent variables; inflation rate, interest rate, political stability and public debt. This is represented by the multiple regression model \( Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon \). The results obtained from the analysis are shown in Table 11 below.

### Table 11 Regression Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>1.071</td>
<td>2.175</td>
<td>.492</td>
<td>.003</td>
</tr>
<tr>
<td>Inflation Rate</td>
<td>.693</td>
<td>.144</td>
<td>.500</td>
<td>.000</td>
</tr>
<tr>
<td>Interest Rate</td>
<td>.052</td>
<td>.042</td>
<td>.089</td>
<td>.224</td>
</tr>
<tr>
<td>Political Stability</td>
<td>.165</td>
<td>.071</td>
<td>.187</td>
<td>.231</td>
</tr>
<tr>
<td>Public Debt</td>
<td>.130</td>
<td>.115</td>
<td>.111</td>
<td>.212</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Financial Performance

Therefore, the regression model is given as:

\[ Y = 1.071 + 0.693X_1 + 0.052X_2 + 0.165X_3 + 0.130X_4 \]

Where:  
- \( Y \) = the dependent variable (Financial Performance)  
- \( X_1 \) = Inflation rate  
- \( X_2 \) = Interest rate  
- \( X_3 \) = Political stability  
- \( X_4 \) = Public debt

The regression equation establishes that when all other variables are zero, the effectiveness of the financial performance would be 1.071. The results obtained also show that taking all other independent variables at zero, a unit increase in the inflation rate will lead to 0.693 increase in the manufacturing firms financial performance, a unit increase in the interest rate will lead to 0.052 increase in the manufacturing firms financial performance, a unit increase in the political stability will lead to 0.165 increase in the manufacturing firms financial performance and a unit increase in the public debt will lead to 0.130 increase in the manufacturing firms financial performance.

This implies that all the four variables have a positive relationship with the dependent variable, financial performance. Inflation rate contribute the most to the dependent variable while interest rate have the least contribution. The predictor variables...
of financial performance being the inflation rate, interest rate, political stability and public debt have statistically significant variable coefficients with p-values of less than or equal to 0.05.

7. Conclusions and Recommendations

7.1 Conclusions

This study makes several conclusions as per specific objectives of the study:

i. The first specific objective of the study was to determine the effect of inflation rate on the financial performance of manufacturing firms quoted at the NSE. When the data collected was tested and analyzed it was found that inflation rate had a statistically significant influence of the manufacturing firms’ financial performance. Therefore, it was concluded that inflation rate was statistically significant in explaining the financial performance manufacturing firms quoted at the NSE.

ii. The second specific objective of the study sought to establish the effect of interest rate on the financial performance of manufacturing firms quoted at the NSE. When the data collected was tested and analyzed it was found that interest rate had a statistically significant influence of the manufacturing firms’ financial performance. Therefore, it was concluded that interest rate was statistically significant in explaining the financial performance manufacturing firms quoted at the NSE.

iii. The third specific objective of the study sought to analyze the effect of political stability on the financial performance of manufacturing firms quoted at the NSE. When the data collected was tested and analyzed it was found that political stability had a statistically significant influence of the manufacturing firms’ financial performance. Therefore, it was concluded that political stability was statistically significant in explaining the financial performance manufacturing firms quoted at the NSE.

iv. The forth specific objective of the study was to evaluate the effect of public debt on the financial performance of manufacturing firms quoted at the NSE. When the data collected was tested and analyzed it was found that public debt had a statistically significant influence of the manufacturing firms’ financial performance. Therefore, it was concluded that public debt was statistically significant in explaining the financial performance manufacturing firms quoted at the NSE.

7.2 Recommendations

The study made the following recommendations:

i. The study recommends that manufacturing firms quoted at the NSE should explore avenues to enhance their capacities within the firm to manage the effect of foreign exchange movements. The employees need to be exposed to continued education either through internal training or through short term training programs organized by professional organizations especially for the finance specialist in the firms. These trainings should be practical oriented and should not only focus on hedging foreign exchange but also include introductory contents on import-export trade. This will enable the management of the firm come up with mechanisms that will enable them respond to changes in the macro-economic environment.

ii. To regulate the interest rate levels, the study recommends that, by use of lobbying groups, firms should interact with the Central Bank of Kenya to put in place measures that will monitor the interest rate spread and regulate the interest rate that can be charged on the borrowings.

iii. Foreign exchange rate in Kenya in the recent past are constantly changing. The study recommends that the Government through it policy makers should find out how foreign exchange policy strategies could be modified in order to control and stabilize the Forex fluctuations.

References


