Effect of Currency Depreciation on Share Prices of Listed Agricultural Firms in Kenya

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

Original Research Article

ABSTRACT

This paper sought to assess the effects of currency depreciation on share prices of listed Agricultural firms in Kenya in the recent past 2020- 2023. It adopted a descriptive correlational research design. The target population was all the six Agricultural companies listed at the NSE as of December 2023. Secondary data was collected from the Nairobi Securities Exchange and Central Bank for the period January 2020 and December 2023, data collected took a panel dimension thus a simple regression analysis was done to establish the extent of the relationship between variables. It is evident that the shilling has drastically depreciated against the dollar while stock prices exhibited a price increase. The paper found out that a unit change in exchange rates leads to a change in stock prices by 0.094. This means that stock prices increase by 9.49%. Thus a weak positive relationship between exchange rates and stock prices therefore exchange rates alone cannot be used to explain stock price volatility. This paper findings informs investors, portfolio managers, regulators, listed companies, financial institutions, and other market players. portfolio managers are better when they increase their positions in equity stocks when they forecast a depreciation of the foreign currency and consequently dispose of shares in their portfolio if they predict an appreciation of the foreign currency. Additionally the government of Kenya should

also establish measures and policies to enhance the country's agricultural exports as this will go a long way in improving the performance of its agricultural listed. Finally it recommends further studies on the topic since it considered only two variables; exchange rates and share prices over four years.

Keywords: Exchange rate depreciation; stock prices; listed agricultural firms; KES /USD.

1. INTRODUCTION

"Stock prices and exchange rates play a pivotal role in the economic growth of a nation. The relation between stock returns and exchange rates has become a major concern to economists for varying reasons, as both play key roles in influencing the development of a country's economy" [1]. "Currency depreciation is the fall in value of one currency against the other currencies leading to the rise of desired and undesired effects in an economy. There are various ways in which the depreciation of a currency affects the performance of firms. For instance, Firms that export to foreign external markets benefit from the depreciation of local currencies while firms that import and who do not engage in international business are negatively impacted. Foreign exchange rate volatility influences the value of the firm since the future cash flows of the firm change with the fluctuations in the foreign exchange rates. Since stock market performance is generally considered to be the indicator of the financial and economic conditions of a country its volatility is unavoidable, even desirable, as the stock price fluctuation indicates changing values across economic activities and may facilitate better resource allocation" [1].

According to the World Bank economic prospectus [2] "financial market turbulence from 2018 to 2022 illustrated clearly that developed, emerging markets, and developing economies faced the risk of unstable exchange rate movements". "Compelling central banks to tighten policies, reduce currency pressures, and hedge against inflationary pressures despite the slackening growth. Moreover, many emerging markets and developing economies confronted significant currency depreciations by tightening monetary policies to restore market confidence. Currency pressures have most been pronounced in Turkey and Argentina, due to acute concerns about monetary policy frameworks and debt sustainability. However, African economies suffered from sharp exchange rate depreciations, particularly those with large external financing needs and countries unable to maintain misaligned currency pegs or other forms of currency arrangements. Central banks have been forced to tighten monetary policies to restore market confidence for instance in the last quarter of 2022, the number of Countries that hiked policy interest rates was four times larger than those that cut theirs" [2].

In Kenya today, there has been increasing variability in the exchange rates as the shilling drastically depreciated against all major global currencies in the last decade posing adverse effects on the domestic economy. Adler and Dumas (2015) posit Kenya has always been affected by widespread economic implications on the economy as a result of the local currency depreciation that has happened over the last many years. The country has experienced different exchange rate regimes for instance the fixed exchange rate regime from 1966 to 1992 and thereafter in 1993 the exchange rate system was matched to the official interbank rate and the shilling was allowed to float, this system allowed the prices of currencies to be determined by the demand and supply of money leaving companies exposed to the exchange rate risk (Adler and Dumas 2015).

"There is a negative implication when the Kenya Shilling depreciates as this implies a higher cost in Shillings to finance imports. However, there is also a positive side to a weak Shilling as it means lower foreign prices for our exports; this increases the country's competitiveness in the world market, which improves our balance of trade position. Further, a weak Shilling promotes domestic investments that create employment and also discourages the final consumption of luxury imports. All these are necessary to improve the current account balance and support economic growth. Literature suggests that a wide range of factors may be relevant in explaining the stock prices volatility among them: goods prices, money supply, real activity, exchange rates, political risks, oil prices, trade sector, and regional stock market indices" [1].

According to CBK [3], "the agriculture sector continues to play a critical role in Kenya accounting for 20 percent of Gross Domestic

Product (GDP) and 27 percent indirectly through its linkages with other sectors. The sector also employs over 40 percent of the total population and more than 70 percent of the rural populace. Given the critical role the sector plays in providing livelihoods and a food basket for the Kenyan economy, it is imperative to ensure that we assess the role the exchange rate plays in its performance". There are six listed agricultural firms in Kenya [4] see Appendix 1.

Exchange rates form a critical part of the macroeconomic factors in Kenya's economy. Currently, the Kenyan shilling is experiencing the worst extended decline period of the rapid depreciation since 2008 which has adversely affected economic growth thus impacting the performance of various firms particularly the agricultural firms whose contribution to the economy in respect of food security and the creation of employment is very significant.

Studies have been done on the effect of Kenyan shilling depreciation on the economy some have been done to expound on the impacts of foreign exchange exposure /volatility, depreciation, and devaluation on firm performances in the economy. For instance Chirchir [5] examined how changes in exchange rates and stock prices are related to each other for Kenya over the period November 1993- April 2011. The findings indicate that there was a bi-directional causal relationship between exchange rate and share price. As regards the sign of causality, negative causality existed in both directions. Musyoka and Pundo (2012) sought to assess the impact of exchange rate volatility on the economic growth of Kenya for the period 1993 -2009 and concluded that the exchange rates exhibited an appreciating volatility trend which negatively impacted on country's overall international competitiveness. Consequently, Otieno (2012) established that exchange rate fluctuation significantly affected the performance of a firm. However, Samuel [6] sought "to establish the factors that influence the performance of agricultural firms listed in the Nairobi Securities Exchange. Specifically, the study looked at the influence of liquidity, ownership structure, company size, sales growth, operating cost efficiency, and internal and external factors on the financial performance of agricultural firms listed at the Nairobi Securities Exchange". Regardless of the vast literature on the effect of currency depreciation on economic growth, there are no known studies in the recent past assesing the effect of currency depreciation on the

performance of firms in the agricultural sector in Kenya. Thus this paper seeks to assess specifically the effects of currency depreciation on share prices of listed agricultural firms in Kenya in the recent past 2020- 2023.Thus the objective of the paper was: To assess the impact of currency depreciation on share prices of listed agricultural firms in Kenya in the recent past 2020- 2023.

The next section in this paper is the theoretic and the literature reviews relevant to the topic.

2. LITERATURE REVIEW

2.1 Theoretical Review

"Purchasing power parity (PPP) involves a relationship between a country's foreign exchange rate and the level of movement of its national price level relative to that of a foreign country. Purchasing power parity (PPP) is a simple theory that holds that the nominal exchange rate between two currencies should be equal to the ratio of aggregate price levels between the two countries so that a unit of currency of one country will have the same purchasing power in a foreign country" [7]. The general idea behind purchasing power parity is that a unit of currency should be able to buy the same basket of goods in one country as the equivalent amount of foreign currency, at the going exchange rate, can buy in a foreign country, so that there is parity in the purchasing power of the unit of currency across the two economies. Relative PPP implies that changes in national price levels are set by commensurate changes in the nominal exchange rates between the relevant currencies.

2.2 Empirical Review

2.2.1 Exchange rate depreciation

"Exchange rates are based on supply and demand for particular forms of currency. Domestic currency supply changes as a result of a country's fiscal and monetary policies. Demand for currency can be influenced by a large number of factors, including interest rates, inflation, and views on impending government regulation. The continuing increases in world trade and capital movements have made the exchange rates as one of the main determinants of business profitability and equity prices" (Kim, 2013). "Exchange rate changes directly influence the international competitiveness of firms, given their

impact on input and output prices" (Joseph, 2012). "Foreign exchange rate volatility influences the value of the firm since the future cash flows of the firm change with the fluctuations in the foreign exchange rates. The depreciation of the exchange rate will have adverse effects on exporters and importers. Exporters will have an advantage against other countries exporters and increase their sales and their stock prices will be higher. That is, currency depreciation has both a negative and a positive effect on the domestic stock market for an export-dominant and an import-dominated country, respectively" [8].

"Exchange rates affect stock prices not only for multinational and export-oriented firms but also for domestic firms. Domestic firms can also be influenced by changes in exchange rates since they may import a part of their inputs and export their outputs. For instance, a depreciation of its currency makes imported inputs more expensive and exported outputs cheaper for a firm. Thus, depreciation will have a positive effect on export firms" [3].

2.2.2 Firms stock returns

"Stock performance is generally considered to be the reflector of the financial and economic conditions of a country. Stock volatility indicates the degree of price variation between the share prices during a particular period. A certain degree of market volatility is unavoidable, even desirable, as the stock price fluctuation indicates changing values across economic activities and it facilitates better resource allocation. However frequent and wide stock variations cause uncertainty about the value of an asset and affect the confidence of the investor" [8]. "The risk-averse and the risk-neutral investors may withdraw from a market at sharp price movements. Extreme volatility disrupts the smooth functioning of the stocks" [8].

2.2.3 Relationship between exchange rates and stock returns

Research on the link between stock returns and exchange rate movements has a long tradition in the international finance literature. Researchers have reported that this link is small and hardly significant. In recent years, researchers have documented that the link between stock prices and exchange rate movements is nonlinear. Mbogo [9] Examined the adverse effects of currency depreciation on financial performances of manufacturing firms listed at the NSE Kenya

looking at the imports and exports vis a vis the firms profitability and competitiveness for the period 2004 to 2013. They conclude that currency depreciation affected the overall financial performance, export sales and reduced its competitiveness additionally there was increased cost of production due to high cost of imports during that period. Patro et al [8] studied how the local stock market reacted to currency devaluation by a country's central bank from 41 countries from 1979 to 2011. They found out that currency Devaluations appear to be anticipated by the local stock markets, and there are significant negative abnormal returns even one year before the announcement of the devaluation. A negative trend in stock returns persisted for up to one quarter following the first announcement, and then becomes positive thereafter.

Kiguel (2013) studied "the exchange rate movement shocks in 23 developing countries of Africa using data from the year 2000 to 2010. From his findings there were various exogenous shocks such as worsening terms of trade mainly on account of fluctuations in international commodity prices, oil price shocks and volatility in capital flows, which have created macroeconomic management policy challenges". Chirchir [5] examined "how changes in exchange rates and stock prices are related to each other for Kenya over the period November 1993- April 2011. The findings indicate that there is a unidirectional causal relationship between exchange rate and share price. As regards the sign of causality, negative causality exists in both directions". Musyoka and Pundo (2012) sought to assess the impact of exchange rate volatility on the economic growth of Kenya for the period 1993 -2009 and concluded that the exchange rates exhibited an appreciating volatility trend which negatively impacted on country's overall international competitiveness.

Sifunjo and Mwasaru [10,11] examined "the causal relationship between foreign exchange rates and stock prices in Kenya covering the period November 2003 to May 2009. The empirical results showed that foreign exchange rate and stock prices are non-stationary both in first differences and level forms, and the two variables are integrated in order one. The finding from this study shows that exchange rates Granger causes stock prices in Kenya. There is a unidirectional causality from exchange rates to stock prices".

Nyamute [12] studied "the relationship between stock prices and other financial variables like money supply, interest rates, inflation rates, and exchange rates in Kenya. The findings were that a positive relationship exists between stock prices and exchange rates".

3. METHODOLOGY

The paper adopted a descriptive correlational research design which sought to predict and explain the relationship between variables. This design allows for the measurement and analysis of the data through graphs, charts and the computation of mean, standard deviations, and correlation between variables as explained by Cooper & Schindler (2003). The relationship between the variables was assessed in detail to make objective and conclusive findings of the paper. The target population for this study was all the six agricultural companies listed at the NSE as of December 2023 see Appendix 1. Since the population was small sampling was not done.

The paper used secondary data collected from the Nairobi Securities Exchange and Central Bank for the period January 2020 and December 2023. Since they had information that was very pivotal to this paper and have been vetted and accepted. Monthly Data on exchange rate movements for the Kenyan currency (Kshs) against the United States dollar (USD) was collected. The monthly stock market returns data was also collected for all the agricultural companies which were listed at the Nairobi Securities Exchange as of 31st December 2023, for the period 2020 to 2023. Using this data, a simple regression analysis was done to establish the extent of the relationship between exchange rate depreciation and stock market performance. The study applied the following simple regression model.

$Y_t = \beta_0 + \beta_1 X_1 + \varepsilon$
Where Y = the exchange rate depreciation
And X1 = Stock price
β_0 = Constant
β_1 = co-efficient of the variables,
E = Error term.
A T-test at a 95% confidence level was done to establish the significance of the independent variable in explaining the changes in the dependent variable.

4. DATA ANALYSIS AND RESULTS

This section presents details of the results analysed from the consolidated secondary data collected for the years 2020 to 2023. Since the data has taken a panel dimension, the study can tell from the 6 companies considered and the various effects of currency depreciation on stock prices. The study findings are presented as descriptive in the form of tables and graphs.

4.1 Descriptive Statistics

The paper considered the following descriptive statistics; mean, standard deviation, minimum, and maximum. The variables used in this study were exchange rates and stock prices for each company. The exchange rate is stated as the Kenya shillings price of one US dollar (1US dollar = 'XX' Kenya shillings). Therefore when the exchange rate "increases" it denotes depreciation of the Kenya shilling or appreciation of the foreign currency.

From Table 1, the mean value of the exchange rate for the period was found to be 118.45 a with a minimum of 100.79 and 154.09 maximum value a clear indication of depreciation. While the mean stock prices for Eagards Ltd, Kapchorua Tea Kenya Plc, Kakuzi Plc Limuru Tea Co. Ltd, Sasini Plc, and Williamson Tea Kenya Plc are 12.28,110.49, 378.82,381.00 20.42, and 152.12 respectively.

4.2 Trend Analysis

We adopted graphical illustrations to demonstrate the trend of all the variables over the entire period across the panels. The exchange rates exhibit an upward trend, a clear indication of currency depreciation. While stock prices exhibit an upward trend in all the companies.

4.3 Diagnostic Tests

4.3.1 ANOVA test

The significance of the model was tasted by use of the Analysis of Variance (ANOVA) technique. From the ANOVA statistics, the review had a significance level of 2.1267% which means that the information was effective for concluding the populace parameters as the estimation of significance Level (p-value) was under 5%. The ANOVA Table 2 reports an F test value of 65.102 which is Significant at p value 5.4E215 = 0. This is an indication that exchange rates influence stock performances. The significance value was equivalent to 0.05 indicating that the model was significant.

**Table 1. Descriptive statistics**

	USD/KES	Eagads Ltd.	Kapchorua Tea Kenya Plc	Kakuzi Plc	Limuru Tea Co. Ltd.	Sasini Plc.	Williamson Tea Kenya Plc
Mean	118.4504167	12.28396	110.4927	378.8233	381.0833	20.41	152.1096
Median	113.145	12.625	95	385.7	385	20	138.54
Standard Deviation	14.23533317	1.414183	44.51254	35.15371	49.22715	3.034171	29.91743
Sample Variance	202.6447105	1.999914	1981.366	1235.783	2423.312	9.206196	895.0526
Kurtosis	0.332759954	-0.07146	1.596494	0.321926	-0.1489	1.393826	1.544427
Skewness	1.173845282	-0.76059	1.623158	-0.8738	0.107793	1.137395	1.374258
Minimum	100.79	8.24	65	288.5	280	16.1	110.91
Maximum	154.09	14.1	239.25	441.25	510	30	236.9
Count	48	48	48	48	48	48	48
Confidence Level (95.0%)	4.133509874	0.410636	12.92509	10.20757	14.29407	0.881032	8.687116

Source: Research data

Table 2. ANOVA

ANOVA						
Source of Variation	**SS**	**Df**	**MS**	**F**	**P-value**	**F crit**
Between Groups	6665995	6	1110999	65.102	5.4E-215	2.126772
Within Groups	307047.5	322	953.5636			
Total	6973043	328				

Source: Research data
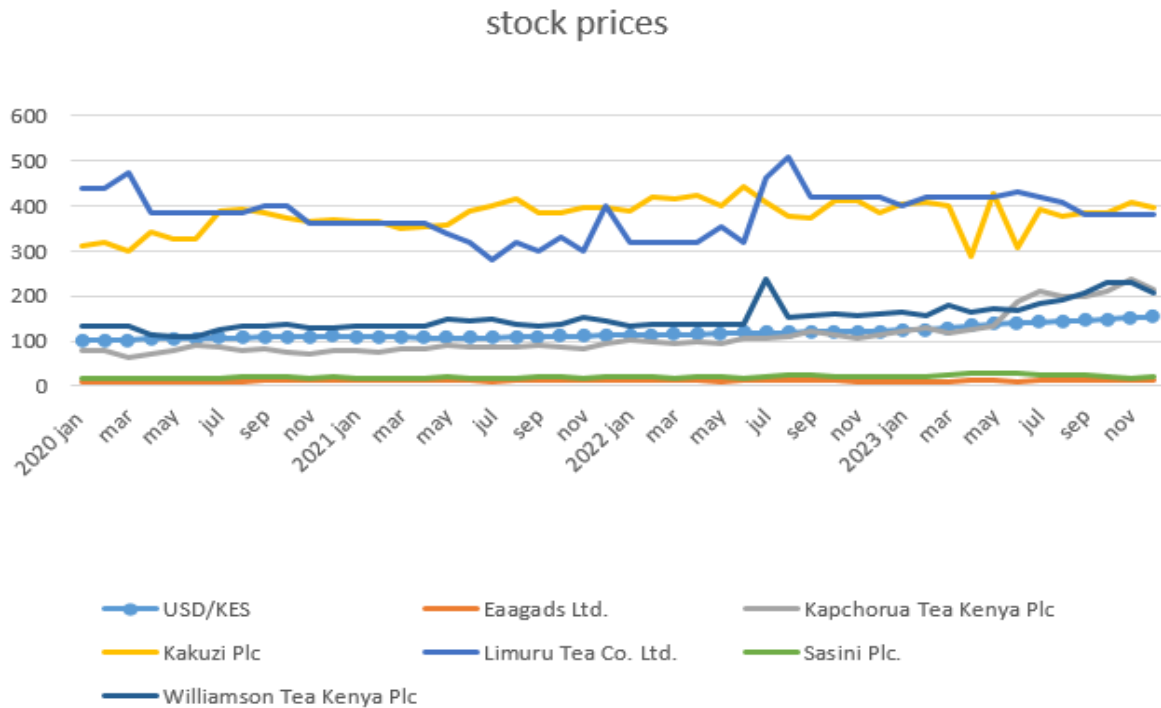
Fig. 1. Trends in exchange rates and stock prices
Source: Research data

4.3.2 Regression results

After conducting major tests where necessary, the final random effects model takes the following form based on the results in Table 3;

Table 3. Regression results

	IDV	DV
IDV	198.4229	
DV	0.094955	1

Source: Research data

$$Y_{i,t} = 198.422 + 0.0949x1 + \ldots\ldots\ldots 4.3$$

Where;

$Y_{it}=$ = currency depreciation measured by monthly average price of exchange rates.

The unit increase in exchange rates leads to a change in stock by 0.094. This means that stock prices increase by 9.49%.

5. SUMMARY, DISCUSSIONS AND RECOMMENDATIONS

Based on the study results presented above it is evident that the shilling has drastically depreciated against the dollar while stock prices exhibited a price increase as shown in the graphs above. This is in agreement with Chirchir [5] who examined how changes in exchange rates and stock prices are related to each other for Kenya over the period November 1993- April 2011. The findings indicate that there is a uni-directional trend between the exchange rate and share price as the exchange rate price increases the price of stocks also increases. Table 3 above through the linear model, exchange rate and was found to be a statistically significant determinant of stock prices at 5% and 1% significance level. The study found out that a unit change in in exchange rates leads to a change in stock price by 0.094. This means that stock prices increase by 9.49%. This implies a weak positive relationship between exchange rates and stock prices thus exchange rates alone cannot be used to explain stock price volatility. This is in line with Mwangi, [1] who explained a wide range of factors may be relevant in explaining the stock price volatility among them: money supply, goods prices, real activity, political risks, exchange rates, oil prices, regional stock market indices and trade sector.

Therefore Portfolio managers should maximize the wealth of their clients, sharp fluctuations in share prices as a result of currency depreciation may cause panic among them. This might force

them to dispose some of the stocks in their portfolios. Nonetheless, when the foreign currency depreciates the portfolio of stocks may raise the value. Therefore, it is imperative for portfolio managers to have a comprehensive understanding of the relationship between exchange rates and share prices.

6. CONCLUSION

In conclusion it is evident that exchange rates affect share prices in Kenya positively. Therefore when the exchange rate "increases" it implies depreciation of the Kenya shilling or appreciation of the foreign currency. These findings have implications for investors, portfolio managers, regulators, listed companies, financial institutions, and other market players. Based, on the results of this paper, portfolio managers are better when they increase their positions in equity stocks when they forecast a depreciation of the foreign currency and consequently dispose of shares in their portfolio if they predict an appreciation of the foreign currency. More so Kenya being an agriculture based economy should also establish measures and policies to enhance the country's agriculture exports as this will go a long way in improving the performance of agricultural firms listed firms in Kenya.

This paper recommends further studies on the topic since it considered only two variables; exchange rates and share prices over four years. A study may be done using additional variables considering other major exchange rates. Also, we suggests that the significance of our results could be improved upon by applying daily or weekly data.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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Appendix 1. List of listed agricultural companies at NSE as of December 2023

NO	LISTED COMPANY
1	Kapchorua Tea Kenya Plc.
2	Eaagads Ltd.
3	Kakuzi Plc
4	Limuru Tea Co. Ltd.
5	Sasini Plc.
6	Williamson Tea Kenya Plc.

Source NSE (2023)