

# Factors Which Influence the Exchange Rate of the Kwacha and Its Effects on The Zambian Economy

Case Study of Businesses Beareu de Change, Banks, Financial Institutions, and Firms

(Conference ID: CFP/252/2017)

Kabubi M. Marvin

Department of Social Research  
Information and Communications University and Zambia  
Research and Development Center  
Lusaka, Zambia  
[marvinkabubi@ymail.com](mailto:marvinkabubi@ymail.com)

Mukonda Fred, Phd

Department of Engineering  
Information and Communications University ICU, and  
Zambia Research and Development Center  
Lusaka, Zambia  
[zrdcserver@gmail.com](mailto:zrdcserver@gmail.com)

**Abstract**— The purpose of this paper is to investigate the factors which influence the K/\$ Exchange Rate and its impact on the Zambian economy. The paper seeks to document information on the factors that influence the foreign exchange rate by assessing the performance of the economy (GDP) and macroeconomic performance indicators. It also establishes the impact of the current exchange rates on the economy. Primary data which was collected was used to assess the impact. This study provides empirical evidence on the critical questions which are often asked on the following; the Zambian currency, Kwacha exchange rates with foreign currencies and the impact on imports and exports and eventually on the economy at large.

Both primary and secondary data are employed in this paper in order to have a wider and more accurate understanding of the economic factors which affect the exchange rate particularly in Zambia. Primary data was collected to assess the impact of the current \$/K exchange rate on the Zambian economy while secondary data (macroeconomic statistics) were collected from the bank of Zambia as well as the central statistical office. STATA (Data Analysis and Statistical Software) was used to analyze all the data. The scope of analysis includes regression models, econometric analysis and statistical projections of the variables from economic data collected.

The research paper has demonstrated the systematic findings on the factors influencing the exchange rate and its impact on the Zambian economy. In this research paper it is apparent that Zambia has seen a depreciating currency due to low exports coupled with relatively higher imports in both volume and value released. The financial risk emanating from the two previously introduced but now abandoned statutory instruments

namely S.I 33 and S.I. 55. For the business sector, the research established that uncertainty and political risk in the economy could not go without mention as they are contributing factors the saw the exchange rate worsening in Zambia. Inflation rate and speculation by currency speculators have also been found as factors that influence the exchange rate in Zambia.

This study has come at a time when Zambian kwacha exchange rate against the dollar has more than doubled the normal or usual rate. Therefore, the findings generated from this study are very beneficial in understanding this phenomenon. We intend to avail much information to the planners and policy makers as well as the government in order to help fix this problem. This study is intended to significantly contribute to the body of knowledge by providing empirical evidence and stop mere speculation on this matter. For a non-diversified developing country, Zambia being an obvious case, nominal appreciation should result from long run increases in the productivity of exportable combined with declining structural inflation. This combination allows for continued export competitiveness and a “stronger” currency.

**Keywords**— Determinants, Exchange rate, Kwacha-Dollar, Impact, Zambia

## 1.0 INTRODUCTION

Foreign exchange markets are often the most active and important asset markets in developing and transition economies, yet few research papers on the subject have systematically documented their structures or main characteristics (Jorge Iván, 2004). The focus of academic discussions of exchange rate policy has shifted in recent years. The new literature on exchange rate regime choice emphasizes considerations relating to the problems of credibility in exchange rate targeting and the connections between exchange rate regime choices and choices of monetary and fiscal policy (Alan C. Stockman, 1992). To bridge the information gaps with regards to foreign exchange rates particularly the \$/K and how it impacts the Zambian economy, this paper seeks to analyze factors that influence the foreign exchange rate as well as its impact on the economy.

It is unfortunately the case that analytical and empirical discussion of exchange rates suffers from frequent use of terms that carry implicit or explicit subjective judgements. It is common to read that the exchange rate "strengthens" or "weakens", meaning appreciation and depreciation, respectively. In the same vein the phrase "improvement in the exchange rate" invariably refers to an appreciation and "deterioration" to a depreciation. (Weeks, 2013). In finance, foreign-exchange rate between two currencies is understood to be the rate at which one currency will be exchanged for another. It is also regarded as the value of one country's currency in terms of another currency.

Since the mid-2000s short term movements in the Kwacha have received considerable attention as a result of variations that most analysts attribute to fluctuations in the price of copper, the country's most important export (Weeks, 2007:, IMF, 2009:, and Moona, 2010). The Zambian government raised fuel prices and reduced maize and fertilizer subsidies, but the medium-term fiscal impact of these initiatives is uncertain. These

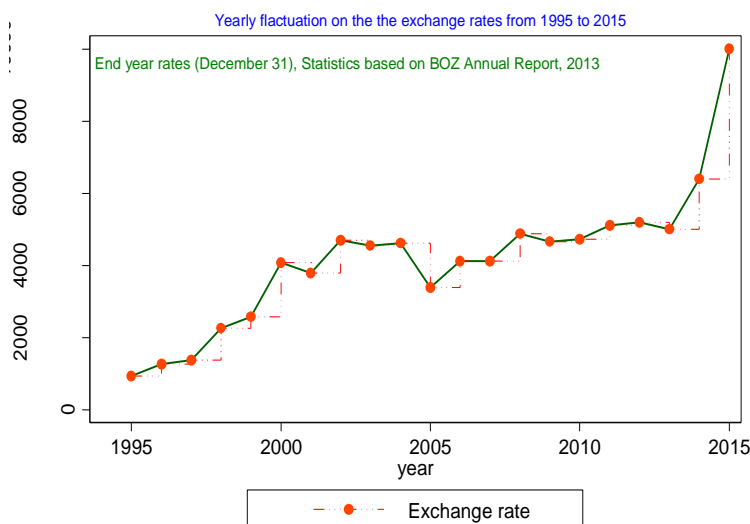
reforms aimed to create space for expanding better targeted spending programs. But the fiscal benefits of a fuel price increase could erode if retail prices are not periodically adjusted to reflect shifts in the world price of oil and in the kwacha-dollar exchange rate (World Bank, 2013).

This study provides empirical evidence on the critical questions which are often asked and these include; the Zambian currency, Kwacha exchange rate with foreign currencies and the impact on imports and exports and eventually on the economy at large.

## 1.2 Zambia's Economic overview

Zambia's economy has experienced strong growth in recent years, with real GDP growth in 2005-13 more than 6% per year. Privatization of government-owned copper mines in the 1990s relieved the government from covering mammoth losses generated by the industry and greatly increased copper mining output and profitability to spur economic growth. Zambia's dependency on copper makes it vulnerable to depressed commodity prices, but record high copper prices and a bumper maize crop in 2010 helped Zambia rebound quickly from the world economic slowdown that began in 2008. Zambia has made some strides to improve the ease of doing business. Regulatory changes by the current government in 2012-2013 included Statutory Instruments (SI) Number 33 (mandating use of the kwacha for domestic transactions) and SI Number 55 (monitoring foreign exchange transactions). Along with problems of fiscal management and weakening global copper prices, these SI's were perceived as undermining confidence in Zambia's economy and currency, leading to sharp depreciation of the kwacha in March 2014. In response, the Minister of Finance revoked SI 33 and 55 in late March 2014. Despite a strong economy, poverty remains a significant problem in Zambia, made worse by a high birth rate, relatively high HIV/AIDS burden, and by market distorting agricultural policies (CIA, 2015).

**Figure 1.0, Yearly fluctuations of the \$/K**



**exchange rates from 1995 to 2015 (Computed by the researcher, from BoZ data)**

In developing countries like Zambia, it is difficult formulating the right exchange regime and this has been the main challenges faced by macroeconomic policy designers in recent years. Historically, Zambia has used many different types of exchange rate policies or regimes. Figure 1.1 shows the yearly fluctuations of the K/\$ exchange rate in Zambia from 1995 to 2015. It can be clearly observed that the \$/K exchange rate has consistently increased over the past two decades hence the research problem.

There is a general view among the public that a “strong” kwacha represents a strong economy. This view while having its merits is flawed for several reasons. Firstly most of Zambia’s exports are copper; hence a strong Kwacha usually means that copper prices are sufficiently high to sustain favorable exchange earnings. Secondly this view undermines the Government’s effort to diversify the economy away from copper (Weeks, 2013). Although this statement could be true, the major problem is that the kwacha exchange rate is relatively weaker and has continued to do so for decades also its impact is felt heavily in the Zambian economy.

The exchange rate market responds to both fundamental factors such as some of the demand and supply factors related to external trade, but it also responds to sentiments which tend to drive demand and supply away from fundamentals. Clearly, other issues have been raised with respect to mining tax policy and value added tax which also impact on sentiment in our market (Kalyalya, 2015). The combination of the underdevelopment of financial services and the domination of forex markets by a few private participants makes effective hedging impossible in the foreseeable future. In effect, BoZ participation in forex markets partially socializes hedging risks. Hedging leads the discussion to the capital account and the foreign exchange practices of the copper companies (Weeks, 2013).

This paper investigated the macroeconomic performance indicators of the Zambian economy to determine the extent to which they influence the Kwacha exchange rate. As it was pointed out, there are several other but they cannot be easily determined. The Zambian financial industry is still developing and heavily dominated by few participants coupled with lack of sharing of vital information. The impact of the Kwacha exchange rate was determined based on a survey which was undertaken. This study seeks to investigate the factors which influence the exchange rate (\$/K) as well as assessing its impact on the Zambian economy. It is intended that the findings generated in this project will contribute significantly to the body of knowledge as well as providing useful information to policy makers.

**1.3 Objectives**

The specific objectives include of this study is: To establish how Economic performance (real GDP growth) as a determinant of exchange rate affects the economy, To ascertain how Terms of trade (Exports) as a determinant of exchange rate affects the economy, To investigate the influence of imports as a determinant of exchange rate on the economy and to investigate influence of nontraditional exports as a determinant of exchange rate on the economy. Others are to establish the role of interest rate (commercial bank weighted lending base rate) as a determinant of exchange rate and its

influence on the economy, to ascertain the effectiveness of monetary policy in Zambia, to ascertain the future of foreign exchange market in Zambia and to investigate the impact of Kwacha depreciation on the Zambian economy.

## 1.4 Conceptual framework of the study

Table 1.0, Factors that Affect Foreign Exchange Rate Movements (Demand for currency and price of currency)

↑ Demand for Currency ⇒ ↑ Price of Currency	
↑ National Income	⇒ ↑ Demand for Currency
↑ Real Interest Rates	⇒ ↑ Demand for Currency
↑ Inflation Rates	⇒ ↑ Demand for Currency
↑ National Wealth (↑ Current Account)	⇒ ↑ Demand for Currency
↑ Preferred Currency Mix	⇒ ↑ Demand for Currency
↓ Financial Risk	⇒ ↑ Demand for Currency
↓ Political Risk	⇒ ↑ Demand for Currency
↓ Supply of Domestic Bonds	⇒ ↑ Demand for Currency

Source: Levich (2001)

The conceptual framework on the previous page shows that an increase in the demand for the currency means that leads to an increase in the price of the currency. Thus, the currency appreciates. It also demonstrates that an increase in national wealth, real interest rates, inflation, preferred currency mix, and current accounts increases the demand for the currency. It also shows that decrease in financial risk, political risk and supply of domestic bonds increases the demand for the currency.

## 1.5 Literature Review

Economists have so far found it notoriously difficult to explain currency movements. This difficult is mirrored in the approaches that have over time generated a very large literature attempting to explain exchange rate determination (Williamson, 2008; De Grauwe, 2005; Sarno & Taylor, 2002; Isard P. , 1995; Taylor P. M, 1995). Exchange rates are prices of

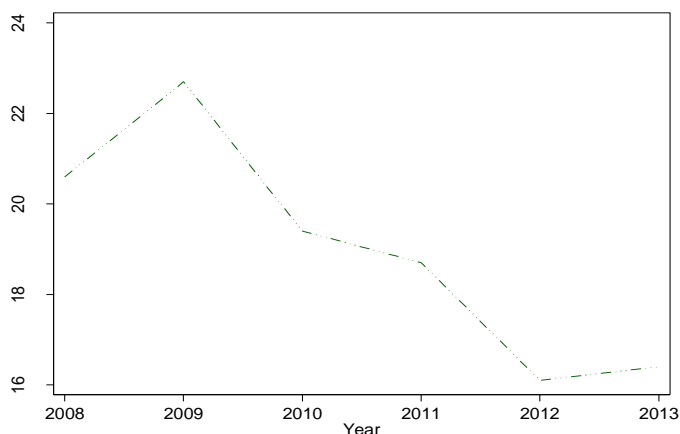
currencies that are determined on a daily basis by market forces of supply and demand. For some countries the exchange rate is the single most important price in the economy because it determines the international balance of payments. (Levich, 2001).

Some researchers do not agree with the statement that the exchange rate is determined exclusively by fundamentals. J.A. Frankel and K.A. Froot argue that the high value of the US dollar in 1984 and 1985 could best be explained as speculative bubble, based on the self-confirming market expectations driven by the increase in forecasting weight given to the chartist as a result of their previous forecasting success (Frankel and Froot, 1990, p. 182). Other researchers hold that these fundamentals are important only in the long run but have little to offer in explaining short-term movements, while others believe that macroeconomic fundamentals have explanatory power both in the long- and the short run (McDonald, 1999, p. F673–F691). Foreign exchange rate models that include macroeconomic fundamentals do not perform better than a random walk in out-of-sample forecasting. Exchange rate volatility is simply the standard deviation of the error term (Frankel and Rose, 1995; Rogoff, 1999, p. F655–F659).

Adherents to the third view think that neither macroeconomic fundamentals nor the random walk model adequately account for exchange rate behavior at short horizons. Rather, short-run exchange rate movements are attributed to market microstructure factors, including inventory management and information aggregation by foreign exchange dealers. Specifically, the microstructure approach suggests that non-dealers learn about fundamentals affecting the exchange rate, and this knowledge is reflected in the orders they place with dealers. Dealers in turn learn about fundamentals from order flow. The outcome of this two-stage learning process results in the formation of a price (Lyons, 2001). This has resulted in disagreement over what the appropriate set of variables to include in an empirical exchange rate equation should be (Meese, 1990).

There is no general theory of exchange rate determination, but Eiteman et al, (2001) divide the potential exchange rate determinants into five areas: parity conditions, infrastructure, speculation, cross-border foreign direct investment and portfolio investment, and political risks. Although no model has been consistent in predicting short-term foreign exchange rate behavior, there are several major concepts that play a role in determining the long-term behavior of foreign exchange rates. The first concept is based on the idea that the current price of an asset reflects all available information; and therefore, only unexpected events cause exchange rates to fluctuate. (Levich, 2001). An important major determinant of long-run behavior of real exchange rates is economic activity such as a rise in productivity or growth in manufacturing. These factors affect the overall quality and quantity of goods produced and consumed, the “national consumption basket.” While there is agreement that growth in economic activity and differences in productivity influence the long-term real exchange rate, calculation of these effects are still debated. (Solnik, 2000).

The approach this study undertook in light of all



this information from the scholars was to assess the influence of economic activity (Real GDP) and other macroeconomic performance indicators on the Kwacha exchange rate, as pointed out there is hardly no set of variables for this assessment.

## 2.0 RESEARCH METHODOLOGY

### 2.1 Research Design and data

To achieve the desired results for the aforementioned objectives, the study started by used the case study approach which was analytical in nature by determining the factors which influence the \$/K exchange rate and then measured the impact of the rate thereafter. The data sources for key macroeconomic performance were the Bank of Zambia and CSO. The study used primary data which was collected through employment of questionnaire given to randomly selected respondents ranging from businesses to financial institution, from which descriptive statistical charts were computed.

This study was basically a case study of the businesses, financial institutions, firms and manufactures among Lusaka district. These were selected in order for the researchers to fully understand the effects of the exchange rates on the economy.

In this study various questionnaires were developed for the targeted respondents in order to extract as much data as possible. Interviews and focus group discussions were also done to help validate the data that was to be collected via questionnaires.

Secondary data (especially historical data) from credible sources such as the Bank of Zambia and Central Statistical Office was also collected and used in the computations.

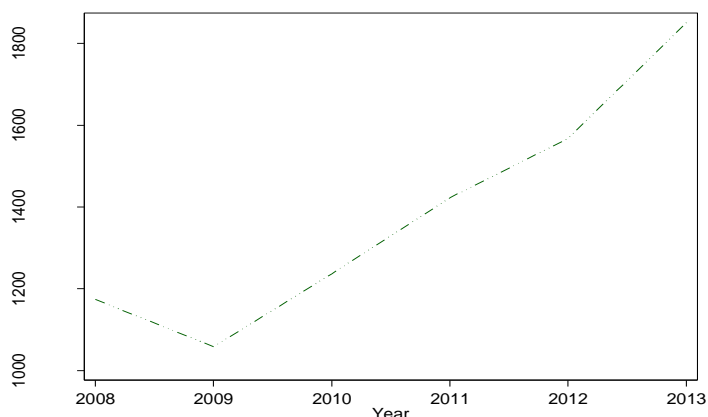
Time series data running from 2008 to 2013 data was collected on the following variables: commercial banks weighted lending base rate, real GDP growth, and average annual exchange rate. Others are total exports and nontraditional exports. Foreign exchange rate was taken as a dependent (regressand) variable and the rest were treated as regressors (independent) variables.

## 3.0 RESULTS/FINDINGS

### 3.1 Graphical computations of some selected Macro- economic performance indicators

Figure 2.1 Commercial Banks WAL BR (%), 2008-2013; Computed by the researcher (BOZ, 2013 Data)

Figure 2.2 GDP per Capita (End Year US\$), 2008-



2013; Computed by the researcher (BoZ, 2013 Data)

Figure 2.3 Annual Inflation, end period 2008-2013, computed by the researcher, (BoZ, 2013 Data)

The computed figures shows the trend of some selected macroeconomic performance indicators of the Zambian economy before the exchange rates worsened.

The results on the below shows the correlated values between variables and their p-values at 95% level of significance. We present the results for the Exchange rates (\$/K) and GDP which is broken down and computed as primary, secondary and tertiary sector of the economy based on CSO data from 1995 to 2013. (*pwcorr exchange\_rate primary\_sector secondary\_sector tertiary\_sector, star(0.05) sig*)

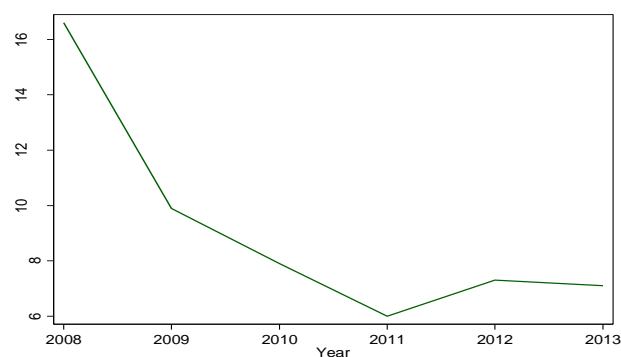
	Exchange rate	Primary sector	Secondary sector	Tertiary sector
<b>Exchange rate</b>	1			
<b>Primary sector</b>	0.6371*	1.0000		
	0.0033			
<b>Secondary sector</b>	0.7498*	0.9489*	1.0000	
	0.0002	0		
<b>Tertiary sector</b>	0.7501*	0.9724*	0.9887*	1.0000
	0.0002	0	0	

From the calculations above we observe that there is a strong correlation between the GDP and the \$/K rate, which is also confirmed by the p-values generated in the regression models and 95% level of

significance. This means in the long run, the Kwacha does not appreciate based on the rise an increase in GDP. Therefore, there is need to test other macroeconomic performance indicators and below are the results.

*pwcorr exchange\_rate\_annualaverage realgdpgrowthendyear gdppercapitalendyearus annualinflationendperiod commbankswalbr totalexportsfobusmn nontraditionexportsfobusmn importsfobusmn, star(0.05) sig*

	K/\$ Rate	Real GDP	GDP/capita	Annual Inflation
<b>K/\$ Rate</b>	1			
<b>Real GDP</b>	0.5352	1		
	0.2738			
<b>GDP per capita</b>	0.5881	0.1978	1	
	0.2195	0.7072		



	K/\$ Rate	Real GDP	GDP/capita	Annual Inflation
<b>Annual inflation</b>				1
<b>End year (%)</b>	0.8630*	-0.745	-0.5385	
	0.0269	0.0893	0.2703	
<b>Comm. Banks WALBR (%)</b>	-0.4679	-0.4209	-0.9153*	0.5295
	0.3494	0.406	0.0105	0.28
<b>Total Exports [fob] (US \$'mn)</b>	0.6221	0.475	0.9418*	0.7167
	0.1872	0.3411	0.005	0.109
<b>Non-traditional Exports [fob] \$m</b>	0.6825	0.2456	0.9727*	0.5512
	0.1352	0.639	0.0011	0.257
<b>Imports [fob] (\$'mn)</b>	0.3982	-0.268	0.5954	0.1227
	0.4343	0.6077	0.2124	0.8169

Computations by the researcher based on BoZ, 2014 data

From the results we observe that only annual inflation is statistically significant at 95%. However, there is so much inter-dependence among the variable with strong statistical significance.

Running a simple linear regression using the exchange rate as the regressand and real GDP growth, total exports, imports, non-tradition exports

and commercial bank lending rates to check for influence gave us the following model:

$$\begin{aligned} \text{EXCHANGERATE} &= \text{C}(1) + \\ &\text{C}(2)*\text{COMMBANKRATE} + \text{C}(3)*\text{GDPGROWTH} \\ &+ \text{C}(4)*\text{IMPORTS} + \\ &\text{C}(5)*\text{NONTRADITIONEXPORTS} \end{aligned}$$

The estimated model (relation) on the factors influencing foreign exchange

$$\begin{aligned} \text{EXCHANGERT} &= -8370.54540929 + \\ &381.983591344*\text{COMMBAR} + \\ &567.052410583*\text{GDPGRO} - \\ &0.0157880883775*\text{IMPORTS} + \\ &1.17474794135*\text{NONTRADITIONEXPORTS} \end{aligned}$$

R-squared is equal to 0.958497, and the adjusted R-squared is 0.792486; implying that the included factors in the model explains about 79% of the variation (movements) in the foreign exchange rate. Durbin-Watson statistics is 2.860690 while R-squared 0.958497, therefore the model is not spurious. The estimated model (relation) is as follows;

$$\begin{aligned} \text{EXCHANGERATE} &= 3744.67683852 + \\ &0.144685202694*\text{TOTALEXPORTS} \end{aligned}$$

#### 4. EFFECTS OF THE EXCHANGE RATE ON THE ECONOMY

As demonstrated on the previous page, an increase in GDP does not necessarily mean appreciation of the local currency. The Zambian GDP has been growing consistently over the past two decades. However, the local currency continued to depreciate consistently. This paradox can only be explained by the fact that the weaker local currency has consistently made Zambian exports cheaper and imports expensive. On account of the fact that Zambia is heavily dependent on imports, this has continued to increase the production cost hence the rise in inflation rate has been observed in Zambia.

To assess the impact of the K/\$ rates, this study randomly collected data from 73 businesses and firms in Lusaka district. And below are the results.

Table 1.2 Economic situation

Type of Business	Importer	Exporter	Local Business	Wholesale
Percent (%) distribution	74.7%	2.7%	12.0%	10.7%

Table 1.2 type of Business

What is the effects of the current exchange rate (K/\$) on your business?	Slightly affected	Heavily affected
Percent (%) distribution	6.78%	93.22%

Table 1.3 effect of the exchange rate

Demand for products (goods and services)	Very High	Low	Very Low
Percent (%) distribution	12%	72%	16%

Table 1.4 demand for local goods and services

Materials used by manufacturers and small scale contractors	Locally made	Imported
Percent (%) distribution	37%	63%

Table 1.5 Source of the materials used in production of goods

#### Effects of load shedding

In this study, 6.25% reported that they had some alternative source of energy therefore they were not badly affected while 93.75% were heavily affected by load shedding leading to low productivity. Discussion and Implication of Findings

The factors that influenced the foreign exchange rate in Zambia as selected in this study were commercial bank lending rate, the volume and the value of total exports and in an indirect way GDP growth in the economy. Others were the volume and value of total imports relative to total exports, and non-traditional exports. Commercial Bank lending rate could be used to improve the performance of the Kwacha.

Although reducing imports improves the exchange rate, it would be ideal for the economy not to do so but rather increase the volume of exports. This is because of the WTO and multilateral institutions which have imposed conditions of allowing free trade among countries and removing all restrictive trade barriers. It was also found out that the exchange rate was determined by demand and supply, only within 2% threshold that the Bank of Zambia had given the financial institutions. The majority of the businesses, both wholesalers and retailers imported their products. Most of the materials used among the manufacturers or producers were imported. Although that was seen across the economy, the local business (buy, produce and sell within) was far worse affected than either the importers or exporters. The financial sector was not spared from the effect of the kwacha depreciation. The management of the foreign exchange market was not effective, as such there was need to improve it. It was also observed and well attested that the economy was faced with massive load shedding of power which significantly reduced productivity.

## 5. CONCLUSION

The factors that influenced the foreign exchange rate as selected in this report were commercial bank lending rate, the volume and the value of total exports and in an indirect way GDP growth in the economy. Others were the volume and value of total imports relative to total exports, and non-traditional exports. Commercial Bank lending rate could be used to improve the performance of the Kwacha. Although reducing imports improves the exchange rate, it would be ideal for the economy not to do so but rather increase the volume of exports. The economy has been negatively affected by the depreciation of the Kwacha such that most of the business responded badly to the Kwacha depreciation. Demand was cut down and as such (that) most businesses lost customers. Therefore, is need for prudent and sound policies especially intervention by the Bank of Zambia though the exchange rate was determined by the supply and demand forces within the threshold determined by the central bank.

## 6. ACKNOWLEDGMENT

I write to acknowledge the guidance and supervision rendered by Mr. Mukonda Fred for this work and the Zambia Research and Development Center for financial Support without which this work could not have been a success.

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