International Journal of Engineering and Management Research
e-ISSN: 2250-0758 | p-ISSN: 2394-6962
https://ijemr.vandanapublications.com

Peer Reviewed & Refereed Journal
Volume-14, Issue-1 (February 2024)
https://doi.org/10.5281/zenodo.10825669

A Study of the Effect of Foreign Exchange Rates on the Financial Performance of Power Utility Companies in Zambia: A Case of Copperbelt Energy Corporation Plc

Anderson Banda[1] and Lubinda Haabazoka[2]
[1]Graduate School of Business, University of Zambia, Lusaka, ZAMBIA
[2]Graduate School of Business, University of Zambia, Lusaka, ZAMBIA

[1]Corresponding Author: abandaz7@yahoo.com

Received: 25-01-2024 Revised: 14-2-2024 Accepted: 28-02-2024

ABSTRACT

Just like other sectors, energy sector in Zambia has faced exchange rates volatility for a long time. Research has shown that Zambian kwacha has been unstable and that it has been depreciating. This study aimed at assessing the effect of foreign exchange rates on the financial performance of power utility companies in Zambia as a result of the devaluation of kwacha. It was an empirical study as the researcher sought to gain knowledge by using quantitative data. Purposive sampling was used in selecting Copperbelt Energy Corporation Plc and secondary data used in the study was extracted from the company's published audited financial statements. Regression analysis using GraphPad software and Microsoft tools were used to analyse data and findings were presented in tables and graphs.

The main results of the study showed that foreign exchange rates had an effect on the financial performance of CEC Plc. Whenever kwacha depreciated, financial performance of the company went down and vice versa. The results further, suggests that there was a medium positive relationship between foreign exchange rates and key financial performance indicators. Henceforward, it was recommended that CEC Plc should ensure that foreign exchange risk management techniques such as money market hedge, exposure netting and hedging with invoice currency are used to minimize foreign exchange risks. It was also recommended that further studies be done in this sector using other financial performance indicators which were not employed in this study to increase the knowledge base.

Keywords-- Financial Performance, Exchange Rate Volatility, Exchange Rate, Devaluation of Kwacha

I. INTRODUCTION

It is undisputable that the energy sector is among the major drivers of the economy and contributes to many countries' gross domestic product (GDP). Without the energy sector, countries would not have experienced the development recorded in the different sectors (Mengistu, 2017). The sustainability of the energy sector plays a big role in the development of the societies and the nations because energy is a driving force for the growth of the economy (Liu, et al., 2020). The energy sector can be defined as the sector which consists of companies that are involved in the generation, transmission and distribution of power. Further, the energy sector consists of companies that carry out oil exploration and development as well as gas drilling and refining.

Power utility companies form part of the energy sector. For power utility companies to remain viable in their business, they ought to be financially sound as they are supposed to keep on expanding to meet the ever-increasing need for electricity. With the continued population growth in the developing countries, the problem of power shortages is expected to worsen (Al-Sumaiti, 2015).

It was revealed by Dr Khan that electricity in the world is massively used for domestic purposes and that domestic consumption of electricity was increasing as population increased (Hameed & Khan, 2016). Similarly, an increase in the industrial activities which spur economic growth is highly likely to increase power consumption. It had been found out that many power utility firms were facing underinvestment and poor financial performance in the Sub-Saharan Africa as these utility companies were receiving funds only enough to meet operating costs and debt services (Balanyan, et al., 2021). Every country in the world has utility companies which provide these amenities. Some utility companies are privately owned, others are publicly owned and other companies are jointly owned by private individuals and the states.

Many countries in the world rely on power supply to keep the wheels of their economy running. Several developing Countries cite shortage of power as a barrier to economic growth because manufacturers are faced with substantial challenges when there is shortage of power, considering that power is the major input in their operations (Zhang, 2017). All Countries, whether developed, under developed or developing, use power as a

Peer Reviewed & Refereed Journal
Volume-14, Issue-1 (February 2024)
https://doi.org/10.5281/zenodo.10825669

catalyst for development (Rai, 2020). Sources of power include; hydro power, fossil energy and solar energy.

Expanding the capacity of power supply requires serious investments. It was revealed in a World Bank study that power sector had to expand if any country was to meet its growth target (Banerjee, 2015, p. 1). A study conducted in four (4) developing countries which are; Bangladesh, Nepal, Ghana and Zambia show that deficiency of energy services in the parts of the developing countries is prevalent, thus making energy services expansion an extensive task (Maria Elojarvi, 2012). Any Country's ability to manage its development objectives can easily be affected by level of access to reliable source of energy as economic growth is synonymous with access to energy (PMRC, 2013).

The nation's economic growth, particularly in the mining, manufacturing, and agricultural sectors, has led to an increase in the demand for energy. The Ministry of Finance in Zambia reported that over the last ten years, Zambia's GDP had grown at an average rate of 5 percent annually. Zambia's energy resources can be developed and strategically used to boost industry competitiveness, enhance service delivery to rural areas, and lessen rural poverty (ESCOM, 2013).

According to Policy Monitoring and Research Centre (PMRC), it was clear that what sits at the centre of all nations' environmental, social and economic concerns is energy and its accessibility. The study indicates that access to reliable energy is critical because nations seek to manage poverty levels. The study further indicates that correlation exists between the Human Development Index (HDI) and accessibility to dependable energy. Further, it was indicated that, over the period of 10 years, Zambia's economy had been growing at the rate of 5 percent per annum and that what could improve delivery of services in rural areas and reduce poverty levels was development and strategic usage of national energy sources (PMRC, 2013).

An analysis of developments in the energy sector in Zambia showed that Zesco had encountered some difficulties due to hydro resources crisis and adverse movements of the currency (Bayliss & Pollen, 2020). In 2015, it was reported that ZESCO, the largest power utility company in Zambia, had requested the mines to cut its load by thirty percent so that the power deficit of 591 MW per month from September 2015 to December 2015 could be managed (Mukumba & Mukuka, 2016). The blackout leads to low economic growth as production is usually interrupted which further leads to high production costs (Mukumba & Mukuka, 2016). When production is reduced there is likely to be high demand for products and services which can further lead to inflation as prices for goods and services may increase over a period of time.

Economic activities have been increasing in Zambia in the recent past causing an increase in the demand for hydroelectric power. This led to the introduction of load shedding schedule lasting for twelve (12) hours every day (Umar & Kunda-Wamuwi, 2019).

Statement of the Problem

In the course of business, companies may transact with other entities that use different currencies. Financial performance of some of the entities can be influenced by the foreign exchange rates. Dufera indicates in his study that analysis of financial performance through identification of strengths and weaknesses using indicators of financial performance can be of great contribution to management, stakeholders and to the whole economy (Dufera, 2020). Public Companies such as Copperbelt Energy Corporation Plc mainly prepare four types of financial statements which are: (1) Statement of profit or loss and other comprehensive income, (2) Statement of financial position also referred to as the balance sheet, (3) Statement of cash flows and (4) Statement of changes in equity.

Considering the significant role that Copperbelt Energy Corporation Plc plays in the energy sector, it is imperative that a study be done to assess the effect of foreign exchange rates on its financial performance. Although some studies on the effect of foreign exchange rates have been done in other countries, no study of the effect of foreign exchange rates on financial performance as a result of the devaluation of Zambian kwacha has been done in the energy sector in Zambia. This research seeks to carry out a study of the effect of foreign exchange rates on the financial performance of Copperbelt Energy Corporation Plc as a result of the devaluation of kwacha.

Main Hypothesis

The main hypotheses of the study were framed as follows:

H0: Foreign exchange rates have an effect on financial performance of CEC Plc.

H1: Foreign exchange rates have no effect on financial performance of CEC Plc.

II. EMPIRICAL LITERATURE REVIEW

Financial Performance

Financial performance of power utility companies is critical to the sustainability of the firm's operations. To understand the soundness of a company's financial performance, an analysis of its financial statements had to be performed. Financial Performance analysis helps management to determine the current financial status, available opportunities, potential problems and understanding future capabilities of the company. It helps managers to identify resources and manage resource allocation in an entity.

Peer Reviewed & Refereed Journal
Volume-14, Issue-1 (February 2024)
https://doi.org/10.5281/zenodo.10825669

Financial performance analysis involves evaluating the connection between component parts of the financial statements to gain a deeper understanding of the position of the company and its performance to helps predict the future (Mengesha, et al., 2014). Misra defines financial performance analysis as a process of discovering truth about the entity based on the interpretation of financial data available. It involves the ability to leverage operational and investment decisions and strategies to achieve a business' financial stability.

The objective of financial performance analysis is to provide a precise picture of the entity's financial conditions (Misra, 2017). However, financial performance of a company can be affected by several factors such as inflation, low demand for the company's products or services and many more. The researcher seeks to assess if foreign exchange rates have an effect on the company's financial performance. It is considered that cross border trading makes companies face changes in the foreign exchange rates as they settle and receive payments. Sometimes exchange rates become unstable as involved currencies may either gain or lose value.

Some research indicated that depreciation of local currency exerts a positive and negative impact on exports in the long run and short-run respectively and it was further revealed that volatility in the exchange rates had a significant negative effect on exports (Innocent.U.Duru, et al., 2022). Depreciation usually leads to devaluation of the local currency. As a result, devaluation of local currency is rarely discussed without referring to the foreign exchange. In Nigeria, Ikenna Nnoli found out that a positive and significant relationship existed between the exchange rate and the agricultural export values (Nnoli & Enilolobo, 2023). In this study, the 2 terms i.e., devaluation and depreciation were used interchangeably because depreciation leads loss of value of the local currency whilst appreciation leads to the local currency gaining value.

Historically, exchange rates in Zambia have gone through several regimes among them being fixed exchange rate policy and floating exchange rate policy (Shula, 2015). Records from the Bank of Zambia (BOZ) show that the Zambian kwacha has been depreciating and appreciating over a period of time of which to the large extend the value of Zambian kwacha has been reducing against other foreign currencies. It is clear that Zambia has not been spared from the exchange rate volatility.

Each financial statement has its own purpose. According to the International Accounting Standard (IAS 1), which deals with the presentation of financial statements, it states that the most significant indicator of the financial performance of a company is the statement of profit or loss and other comprehensive income (ACCA, 2020).

Before investing their funds, investors would want to know the performance of the company. The simplest way to determine the performance of the company is to look at the company's financial statements. In this intense competition among the companies, the company is expected to be able to maintain and improve its performance in order to remain competitive. Zambia's energy and fuel sector has been experiencing seemingly unstoppable growth for the last decade.

Empirical literature examines how financial and nonfinancial factors, such as leverage, liquidity, size, age, and ownership have an influence on the firms' financial performance (Ahmed, 2020). Operating cash flows and CEC value are impacted by exchange rate swings due to translation, transactional, and economic consequences of exchange rate risk exposure (Chipili, 2015).

Overview of Exchange Rate

The foreign exchange market, "commonly referred to as the forex or FX market, is a decentralized global marketplace where currencies are bought and sold (Melvin, 2020). Participants in this market vary from governments, financial organizations, multinational businesses, to individual traders, together engaged in the buying and selling of currencies. The exchange rate is the key variable in this market and plays a vital role in determining the cost of international commerce and investments. Exchange rates are impacted by a plethora of variables, including but not limited to interest rates, inflation, economic development, political stability, and market mood. The intricacies of these interwoven factors make exchange rate determination a dynamic process, susceptible to frequent changes and volatility.

By definition, an exchange rate is the rate at which one currency is exchanged for another currency. An exchange rate is also viewed as the rate at which one nation's currency is valued against other currencies. Khalid states that exchange rate was considered the most significant among all the elements which affect market volatility behaviour, hence attracting the attention of the investment community besides policy makers and the economists (Khalid, 2017) Muhammad and Victor defined foreign exchange as the value of other international currencies in relations to a local currency (Muhammad & Ushahemba, 2013). Foreign exchange refers to assets denominated in currencies other than the local currency (Lagat & M.Nyandema, 2016).

The central banks of various nations play a vital role in managing the exchange rates by putting their monetary policies into action. Zambia's exchange rates have gone through several regimes over the years that may be categorized into two groups: fixed exchange rate policy and floating exchange rate policy. Zambia had a fixed exchange rate regime from the time it attained its

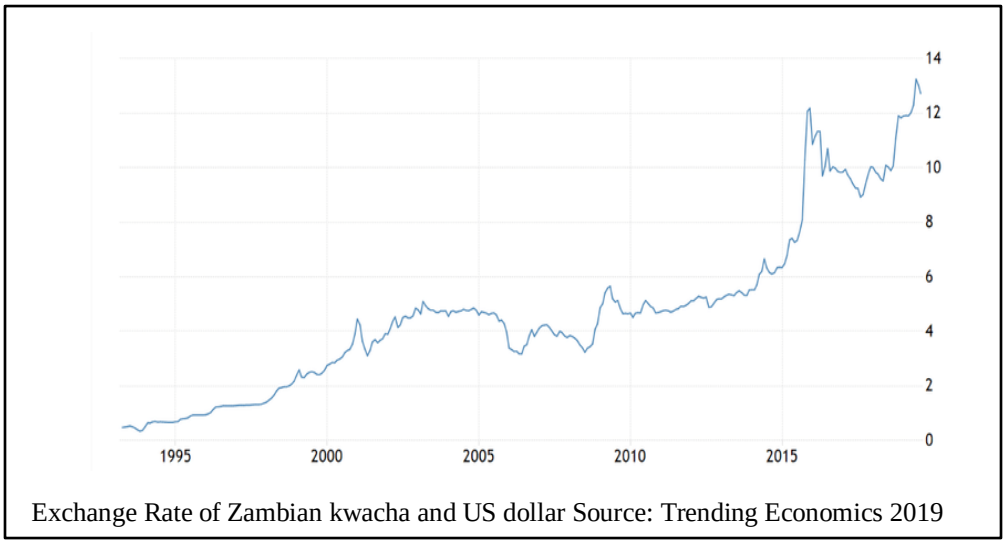
Peer Reviewed & Refereed Journal
Volume-14, Issue-1 (February 2024)
https://doi.org/10.5281/zenodo.10825669

independence in 1964 until 1982 and from 1987 to 1991 (Shula, 2015).

Mining was the primary economic sector, contributing around fifty percent of the GDP and ninety percent of all export revenue (Chipili, 2013). As copper prices and output continuously increased, substantial copper revenues originally supported the development strategy. Due to the reduction in copper prices and output in the early 1970s, copper revenue subsequently suffered. The terms of trade decreased as a result of oil price shocks that occurred in 1973–1974 and again in 1979–1980 (Ahmed, 2020).

The government responded by enacting exchange and trade regulations, such as caps on product prices as well as foreign exchange restrictions on current and capital account transactions. There were also established interest rate ceilings. The currency rate was constant, despite loosening monetary and fiscal measures. Efforts to diversify the economy away from its dependence on copper and lessen the dominance of state-owned enterprises (SOEs) created to support the industrialization development strategy in the late 1980s failed as a result of underlying inefficiencies caused by the policies in place. Real GDP growth rates that were negative had become the norm by the middle of the 1990s.

As a result, the economy was liberalized as market-oriented reforms were implemented at the beginning of the 1990s with assistance from the IMF and World Bank. In 1994, exchange controls were removed as part of a reform package that also deregulated product prices, liberalized trade, and made current and capital accounts completely convertible, which eventually gave way to a market-determined exchange rate. Other reform measures included the privatization of SOEs, including mining companies, the removal of interest rate ceilings in 1991, the implementation of treasury bills auctions in 1993, the adoption of indirect instruments of monetary policy in 1995, the rationalization of expenditures (especially non-essential ones), and the improvement of domestic revenue collection (Chipili, 2013). Since 1994, Zambia has maintained a free-floating flexible exchange rate regime. Before it, the exchange rate had been predetermined since the country's independence in 1964. From 1964 to 1982 and 1987 to 1991, the currency exchange rate was fixed, while from 1983 to 1985, a crawling peg was used. Between 1985 and 1987, the kwacha underwent its initial flotation. Early in the 1990s, as a result of economic changes, a more flexible currency rate regime was implemented (BOZ, 2022). Traditional economic and political justifications had a significant role in the selection of each of these exchange rate regimes (Chipili, 2015).



Exchange Rate of Zambian kwacha and US dollar Source: Trending Economics 2019

Figure 1: Exchange Rate of Zambian Kwacha and US Dollar

Figure 1 above shows that kwacha/US dollar exchange rate exhibited a rising trend over the period 1995-2015 with some volatility, particularly during the global financial crisis of 2007/8 and the period following debt forgiveness (HIPC Initiative and MDRI) in early to mid-2000.

Evolution of Foreign Exchange Rate Determination

Centuries ago, there was no money in the world. During those ancient days, people used barter system to trade between themselves by exchanging goods and services. Barter System is the system by which a person could exchange goods and services produced by them with

Peer Reviewed & Refereed Journal
Volume-14, Issue-1 (February 2024)
https://doi.org/10.5281/zenodo.10825669

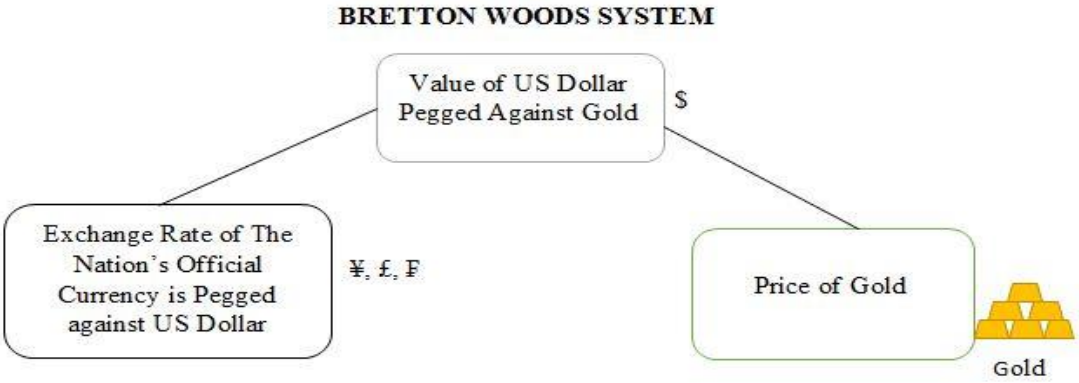
goods and services produced by others. Barter system had been in use before money came into play (Beattie, 2015). Barter system worked on the principle of double coincidence, meaning that two coincidences had to happen where one had to find someone who was willing to sell what one wanted and at the same time another person must be willing to accept what one had in exchange.

Due to the rigidity of the barter system, a substitute emerged in which valuable metals were employed as a medium of exchange in the exchange of commodities and services. This was used where little metals with a defined value and weight bearing an official seal served as the hallmark of the issuing authority. Gold and silver were the first metals utilized during this period. Later, copper was among the various metals employed as a means of exchange. Money was first used in this manner.

Money enables traders to trade services and goods indirectly. It enables people to know the prices for goods and services and the way of saving for future purchases. The value of the money is backed up with the fact that everyone knows that every person will accept it as a means of payment (Beattie, 2015).

The determination of foreign exchange rate is a component of the International Monetary System (IMS). International Monetary System is a set of rules, policies, regulations and mechanisms concerning how exchange rates are determined, capital flow is accommodated and how international payments are made. It was well-known that due to several economic crises, the International Monetary System had gone through different stages of evolution and that the IMS reforms were likely to happen considering the crises which were still growing in the financial systems as well as in the credit relations (Efremenko, et al., 2017).

The monetary system passed through several regimes starting with the classical gold standard regime of 1875 to 1914, in which countries would peg their currencies to gold and exchange rate between two currencies would be determined by their relative gold content (Cristina & Ramona, 2020). When the gold standard was abandoned during the Inter War Period of 1915 to 1944, a Bretton Woods Regime emerged in 1945 and lasted up to 1972. The Bretton Woods Regime was created as an arrangement for International Monetary Exchange.



The Bretton Woods led to the monetary arrangement in which the US Dollar replaced gold as an international medium of exchange (Igwe, 2018). This regime required the United States dollar to be pegged to gold and the rest of the nations' currencies pegged to the US Dollar.

Following the collapse of the Bretton Woods System in 1973, Flexible Exchange Rate Regime emerged where central banks were allowed to intervene with the purpose of ironing out unwarranted volatilities. Under the flexible exchange rate regime, the determination of the exchange rate is based on the law of supply and demand of different currencies on the foreign exchange markets. Since the abolition of the Bretton Woods' fixed exchange rate in 1971, financial analysts, regulators, investors and policymakers have been concerned with the foreign exchange rate instabilities (Elhussein & Osman, 2019).

Foreign exchange is significant to gaining an insight of the development of all world's nations and that exchange rate is a sturdy indicator for assessing overall economic performance (Muhammad & Ushahemba, 2013). Historically, Zambian foreign exchange rates have been volatile which prompted a study to be conducted on the effect of foreign exchange rates volatility on Zambian stock market by Sichoongwe (Sichoongwe, 2016).

Concerning the evolution of the exchange rates in Zambia, Oswald Mulenga mentioned that Zambia had experimented numerous exchange rates regimes which are

Peer Reviewed & Refereed Journal
Volume-14, Issue-1 (February 2024)
https://doi.org/10.5281/zenodo.10825669

grouped into two. These are fixed exchange rate and flexible exchange rate regimes. Initially the fixed exchange rate used the British pound before shifting To United States dollar. In January 1968 the Zambian kwacha replaced the British pound which was then used in Zambia (Mungule, 2020).

Zambia Energy Sector Overview

By 2022, Zambia had thirty one percent average access to electricity, with sixty seven percent of urban residents and just 4 percent of rural residents having access. As a result, the economy's need for power has expanded quickly in recent years and is still growing. According to the Zambia Development Agency (ZDA), the demand for energy is increasing by an average of 3 percent annually (ZDA, 2020).

Zambia's five major electricity-generating companies are the government-owned Zambia Electricity Supply Corporation (ZESCO) Limited, Copperbelt Energy Corporation Plc (CEC), North-Western Energy Corporation (NWEC), Lunsemfwa Hydro Power Company (LHPC), and Maamba Collieries Limited. In addition to managing and operating power plants, transmission lines, and distribution networks, ZESCO, the largest energy provider in the nation and a vertically integrated parastatal, also serves as the only utility-scale off-taker of independent power producers (IPPs).

Zambia's installed capacity stands at 2,800 Megawatts (MW); eighty five percent of that is hydro-based and increasingly vulnerable to climate change. Main hydro power stations include Kariba North Bank Power Station, Kafue Gorge Power Station, Victoria Falls Power Station, Lunsemfwa Hydro Power Station, and the Itezhi Tezhi Hydro Power Station (Report, 2021). There is one coal-fired plant, Maamba Collieries, which was commissioned in late 2016 and can generate up to 300 MW of power for ZESCO.

In close collaboration with the Ministry of Energy, Zambia's Industrial Development Corporation (IDC) completed the first Scaling Solar project. Zambia's first utility-scale solar project, a 47.5 MW plant that feeds power directly into ZESCO's national grid, was commissioned in March 2019 by a joint French (Neoen) and American (First Solar) consortium (Neoen, 2022).

Review of Similar Studies

The devaluation of the currency rises when there are forces that push down the currency value and its effect is dependent on the transaction type. Arikewuyo and Akingunola indicated that the effect is usually negative when the currency depreciates on locally manufactured goods that depend on products from the foreign markets. Further, it was indicated in the same article that escalation of production costs and net exports are caused by currency depreciation while production costs and net exports are cut down by currency appreciation (Arikewuyo & Akingunola, 2019).

Stable foreign exchange rates are required for transactions between two countries to be properly conducted. When there are uncertainties being experienced in the exchange rates of the country's currency, companies' financial performance will also be influenced and the firms value will similarly be affected too. Exchange rates have an influence on investment interests once investors analyse company's capital structure (Utomo, et al., 2020). Santosa stated that exchange rate had an impact on the financial performance factors and that capital market experts such as asset managers and investors observe movements in the exchange rate when making investment decision (Santosa, 2019).

In other studied researchers pointed out that exchange rates are influenced by interest rates and inflation rates. It was indicated that the rate of interest, exchange rates and inflation rates are highly interrelated. Central banks can influence both the rate of inflation and the exchange rates by manipulating the rate of interest (Lagat & Nyandema, 2016). Changing the rate of interest can have an impact on the inflation and the value of the currency. Further it was mentioned that higher interest causes the rise in the exchange rates and at the same time attracts foreign capital. Similarly, the opposite is also true that any decrease in the rates of interest tends to lower exchange rates (Lagat & Nyandema, 2016).

Foreign exchange rate is vital in the world's economy as it plays an important role. Some studies have suggested that exchange rate plays what is referred to as an authoritative moderating role between the conversion cycle of cash and financial performance. The results published by Hussain show that exchange rate has an effect on both return on equity and return on asset (HUSSAIN, et al., 2021). According to Rebecca, exchange rates are vital in the economy internationally as they affect export and import prices of all countries and also affect the value of every overseas investment. Rebecca concludes that fluctuations in the exchange rates have potential effect on investment flow and international trade across nations (Nelson, 2013).

Marvin and Fred explained that exchange rates are determined by the law of supply and demand and they further alluded to the fact that there are countries whose determination of the balance of payment is based on the exchange rate, making it the most important price in their economies (Marvin & Fred, 2017).

III. THEORETICAL LITERATURE REVIEW

Generally, theories exist which support that the relationship exists between the company's value and the

Peer Reviewed & Refereed Journal
Volume-14, Issue-1 (February 2024)
https://doi.org/10.5281/zenodo.10825669

movement in the exchange rates. Suggestions have been made by economic theory that a shift in the stock prices can be produced if there are fluctuations in the exchange rate especially for importing and exporting companies, multinational firms and those companies which import inputs from other firms based in foreign countries. The effect of exchange rate fluctuation has an indirect influence on the entities that import finished goods as well as the cost of imported inputs (Mbithi, 2013).

Because of the existence of multinational companies and cross border trading taking place all over the world, the International Accounting Standard Board (IASB) issued an International Accounting Standard (IAS 21) in 2003 which provides guidelines on how to account for effect of changes in foreign exchange rates (ESCOM, 2013). The IAS 21 was introduced to prescribe how transactions in foreign currency should be included in the company's financial statements. It also prescribes how financial statements of a foreign subsidiary should be translated into a presentation currency.

3.1.1 The Mint Parity Theory

This theory explains the determination of the exchange rates under the gold standard system. Under this system the national currencies were pegged to gold or silver. The Mint Parity Theory states that the value of the currency was determined by the content of gold or silver and the exchange rate determination was based on the metallic content of the currencies. It further explains that exchange rate determination was also based on the weight-to-weight basis of the currencies. Bindu explained that the rate which was used to convert the standard currency into gold for any particular country was referred to as mint price of gold or mint parity (Bindu, 2021).

3.1.2 The Rational Expectations Theory

The theory of rational expectations is a widely used concept and modelling technique in macroeconomics. It suggests that human rationality, their past experience and available information are the three primary factors on which people base their decisions. The theory suggests that the current expectation which people may have about the economy may influence the future state of the economy. Gullied states that the theory of rational expectation would also apply for future exchange rates as expected variations in the future exchange rates would somewhat contribute to the determination of the exchange rate. (Gulleid, 2020).

The Theory of Rational expectations is founded on the premise that people tend to use information which is available to them to make economic decisions although the application of the theory to econometrics as well as macroeconomics is technically demanding (Sargent, 2013). The rational expectations theory contradicts with the thoughts which state that policies formulated by the government have influence on economic and financial decisions. Augenblick and Lazarus indicated that the rational expectations is quite challenging to test because individual's beliefs cannot easily be observed directly (Augenblick & Lazarus, 2019).

3.1.3 Purchasing Power Parity (PPP)

Firstly, Purchasing Power refers to the amount of goods or services one can buy with a certain amount of money. Purchasing power can increase or decrease. Purchasing power reflects the value of money and it was stated by Giovanoli and Devos that the public loses confidence if the currency's purchasing power decreases (Giovanoli & Devos, 2010).

Purchasing Power Parity (PPP) therefore is an old theory which is widely used and it states that identical goods should cost the same in a free market (MAGWIZI, 2011). It is based on the law of one price where the price of one good in one country should have the same price of the identical good in another country when converted into different currencies. It is helpful in comparing the living standards between nations as it defines accurate exchange rates for easy comparison of prices and income in currencies of different countries (Sanane, 2020).

There are two versions of the Purchasing Power Parity. These are:

1. Absolute Purchasing Power Parity and
2. The Relative Purchasing Power Parity

The Absolute Purchasing Power Parity states that same products should cost the same in different countries (Sanane, 2020).

The second version of PPP is the Relative Purchasing Power Parity which takes into account inflation. It does so by taking into account the changes in exchange rates and the changes in the price ratio. This theory states that nations whose domestic inflation is higher compared to their rivals, their nominal exchange rate would depreciate while those nations with lower domestic rate of inflation than their competitors would have an appreciation in their currency value. Therefore, there is a relationship between national price levels and currency values (Okaro & Sunday, 2017). Relative PPP examines the relative changes in prices levels between two countries and maintains that exchange rates will change according to inflation. It is based on this fact that the relative PPP is better than the absolute PPP.

3.1.4 The Balance of Payment Theory

This theory is based on the law of supply and demand and it is also called the Modern Theory of exchange rate determination. It states that the exchange rate for a country's currency is determined by the demand and supply for its currency. If the demand for foreign currency goes up, its value will also rise and vice versa. According to Okaro and Sunday, under the regime of free exchange rates, a nation's exchange rate is dependent on the balance of payment. They indicated that if the balance of payment is favourable the exchange rate will rise while

Peer Reviewed & Refereed Journal
Volume-14, Issue-1 (February 2024)
https://doi.org/10.5281/zenodo.10825669

the non-favourable balance of payment will decrease the exchange rate. To the dual, it implied that the rate of foreign exchange was a determinant of the law of supply and demand. They also stated that the revaluation and devaluation of currencies in the case of surpluses and deficits respectively can be made through adjusting the balance of payments (Okaro & Sunday, 2017).

3.1.5 The Portfolio Balance Theory

This theory is based on the relationship between the relative price of bonds and the exchange rates. It states that it is not only the monetary factors but also the holding of financial assets such as domestic bonds and foreign bonds which influence exchange rates. Under this theory exchange rates are determined by balancing the total demand of stock and supply of financial assets in each country involved. This theory has its own limitations in the sense that it treats money as the only financial asset. Others factors that contribute to the determination of exchange rates such as risk, price level, real income, interest rates and wealth are ignored.

IV. RESEARCH METHODOLOGY

Research Design

A research design is considered as a blue print for the research since it provides processes undertaken by a researcher to assess the relationship between variables (Myanga, 2019).This was an empirical study as the researcher sought to gain knowledge about the study by using quantitative data. It was a quantitative research as numerical data was used to carry out the study. The study was designed to attempt answering what effect foreign exchange rates have on the financial performance of power utility companies in Zambia.

Population of the Study

There are mainly five major power utility companies in Zambia. Among them is Copperbelt Energy Corporation Plc which was selected for this study because it is the biggest privately owned power utility company in Zambia.

Sample and Sampling Procedure

The researcher used purposive sampling to select Copperbelt Energy Corporation Plc because, apart from it being a biggest privately owned power utility company in Zambia, CEC Plc is registered on the Lusaka Securities Exchange and has over 5000 individual and institutional shareholders and at the same time, the company is a member of Southern Africa Power Pool (SAPP) (CEC, 2021). Purposive sampling is a non-probability sampling technique which allows the researcher to identify or choose sample which is likely to possess certain characteristics that will fit in the study to produce intended results from the targeted population (Etikan, et al., 2016). Additionally, a period of 5 years, which runs from 2017 to 2021, was selected for this study. This was because the researcher used secondary data which was readily available in the company's published annual reports posted on their website. As at the of the study the other annual reports were not published on the company's website, hence the researcher's decision to stick to the 5-year period.

Data Collection

Secondary data was used in this study and this data was extracted from audited published financial reports which were accessed from the company's annual reports. These annual reports were published in the company's website. The following data was specifically extracted and utilised in the study:

i. Revenue
ii. Operating Profit
iii. Profit After Tax

Additionally, exchange rates between the Zambian kwacha and the US dollar were obtained from the bank of Zambia. These were used as independent variables while dependent variables were obtained from the company's published annual reports.

Data Analysis

Data collected was properly sorted and classified. Data was further tabulated to make it easy to analyse. The secondary data which was collected was analysed using Microsoft office tools and GraphPad software. The results were further presented using line charts, bar charts, tables and figures to make it easier to understand. Graphical presentation enhances readers' understanding of the research outcomes. Financial ratios were computed to enhance the understanding of company's financial performance and the results of the financial ratios were further presented in a way that is easier for the readers to comprehend.

Model Specification

The researcher used regression equation, ratio analysis and trend analyses in this study.

The regression equation formula used in the study by the researcher was:

$Y = \beta 0 + \beta 1X + \varepsilon$

Where:

Y = dependent variable
$\beta 0$ = is the intercept (constant)
$\beta 1$ = slope coefficient of independent variable
X = independent variable (Exchange rate)
ε = error term

Linear Regression

A linear regression is a linear approach for modelling the relationship between a dependent variable and an independent variable. The linear regression graphs were used to present data for easy interpretation and understanding.

Peer Reviewed & Refereed Journal
Volume-14, Issue-1 (February 2024)
https://doi.org/10.5281/zenodo.10825669

Gross Profit Margin

Gross Profit margin, also called Gross Margin is a metric used in the assessment of a company's financial health. Gross profit margin is the difference between net sales and cost of goods sold. It is calculated by subtracting cost of goods sold from total sales. It is usually abbreviated as (COGS). The formula for computing gross profit margin is as follows:

Gross Profit Margin = (Net Sales – Cost of Goods Sold / Revenue) *100

Operating Profit Margin

The operating profit margin of a company indicates the amount of profit a company generates or makes under its main or core operations by taking into account all operating expenses. It takes into account all additional expenses like interest charges. The calculation of this metric is done by subtracting cost of goods sold, operating expenses, depreciation and amortization frototal revenue made by the company. Operating profit margin is expressed as a percentage of revenue by multiplying the results by 100. The higher the margin the better. The formula for calculating operating profit margin is as follows:

Operating Profit Margin = (Operating Profit / Revenue) * 100

Net Profit Margin

Another financial metric used in financial performance analysis is the net profit margin. It measures the net profit or net income a company generates as a percentage of sales. This ratio is calculated as a percentage of revenue. Net Profit margin is computed using the formula below:

Net Profit Margin = (Net Profit / Revenue) *100

Audited financial data used was summarized in the company's 2021 annual report (Report, 2021).

V. RESEARCH RESULTS AND ANALYSIS

Table 1 below shows the closing exchange rates for each year between the Zambian kwacha and the United States dollar for the period of five years from 2017 to 2021. The exchange rates were obtained from the Bank of Zambia. These exchange rates are graphically presented in figure 2.

Table 1: Exchange Rates between Zambian Kwacha and US Dollar

Year	**2017**	**2018**	**2019**	**2020**	**2021**
Exchange Rate (ZMW/USD	10.03	11.91	14.38	21.09	16.78

Source: *Bank of Zambia*

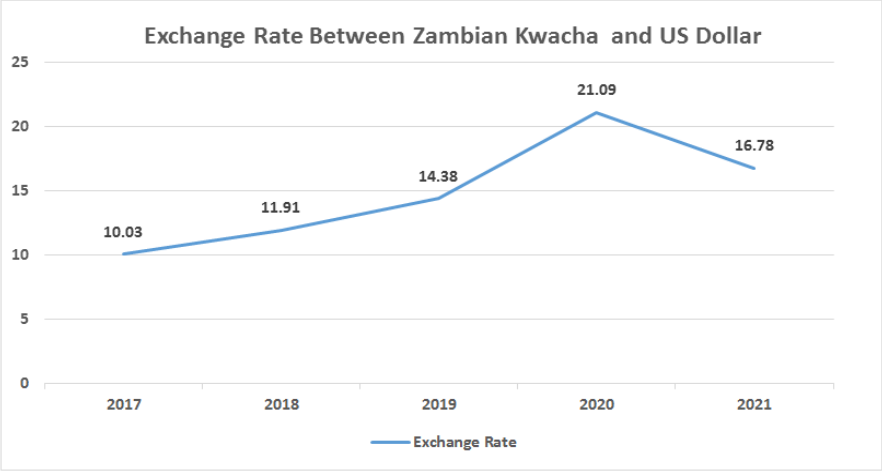


Figure 1: Foreign Exchange Rate Graph

The graph above shows that the value of Zambian kwacha continued to drop between 2017 to 2020 before it showed signs of improvement in 2021. Although the Zambian kwacha had appreciated in 2021 as compared to 2020, its value was still less as compared to the other years, i.e., 2017 to 2019.

Use of Indirect Quotation of the Exchange Rate

The exchange rates presented in the graph above under figure 2 are based on the direct quotation of the exchange rate which Zambia uses. The direct quotation of the exchange rate is the one which measures the number of units of the domestic currency required to buy one unit of a foreign currency. On the other hand, indirect quotation is

Peer Reviewed & Refereed Journal
Volume-14, Issue-1 (February 2024)
https://doi.org/10.5281/zenodo.10825669

the opposite of direct quotation in that it measures the number of units of the foreign currency required to buy one unit of the domestic currency.

Not forgoing the fact that Zambia uses direct quotation, which is also referred to as an America quotation, the researcher used indirect quotation which requires to calculate how much of the US dollar was required to buy one unit of the domestic currency. This was necessitated by the fact that Copperbelt Energy Corporation Plc prepares its financial statements in US dollar. By so doing, data presentation and results interpretation were made easy as the analysis of data was done using the same currency which was used in preparing financial statements. The purpose of using indirect quotation of the exchange rate was to show how much of the United States dollar was required to purchase one unit of a Zambian kwacha.

Table 2: The Value of Kwacha in US Dollar Terms

Year	**2017**	**2018**	**2019**	**2020**	**2021**
US Dollar	1	1	1	1	1
Exchange Rate (ZMW/USD)	10.03	11.91	14.38	21.09	16.78
Value of ZMW1.00 in USD Terms ($)	**0.10**	**0.08**	**0.07**	**0.05**	**0.06**
Amount in Cents	**10**	**8**	**7**	**5**	**6**

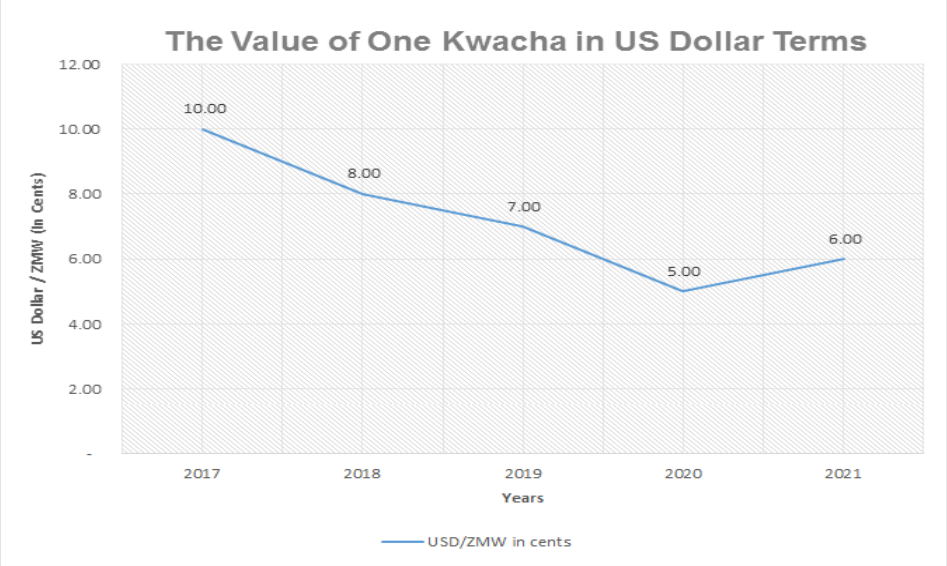


Figure 3: Exchange Rate between US Dollar and Zambian Kwacha

Figure 3 above shows the graphical presentation of the value of kwacha in US dollar terms. It shows that in the year 2017, only USD0.10 (10 cents) was needed to buy ZMW1.00. In 2018 the amount of US dollar which was required to buy ZMW1.00 reduced to $0.08 (8 cents). This means that the US dollar appreciated against the Zambian kwacha between 2017 and 2018. The appreciation of the US dollar implies that the Zambian kwacha had depreciated. This trend continued in 2017 up to 2020 when only $0.05 (5 cents) was required to buy ZMW1.00. It was observed that the Zambian kwacha depreciated by 50 percent between 2017 and 2020. The data indicates that that there was an appreciation of the Zambian kwacha in 2021 as compared to 2020. This appreciation of kwacha was an indication that the US dollar depreciated against the Zambian kwacha.

Analysis of Exchange Rates Volatility

Volatility of the exchange rates in Zambia and the world at large has always been considered as a major source of concern. The fact that Zambia trades internationally, it makes it susceptible to volatility in the foreign exchange rates (Sichoongwe, 2016). Since Zambia is a land locked country and that the country imports more of its products and services than it exports, it has not been spared from exchange rates volatility. As observed in figure 3 above, the foreign exchange rates between the United States dollar and the Zambian kwacha has been volatile over the five-year period reviewed. On average, the Zambian kwacha lost value by twenty percent in a

Peer Reviewed & Refereed Journal
Volume-14, Issue-1 (February 2024)
https://doi.org/10.5281/zenodo.10825669

period of one year from 2017 to 2018, lost thirty percent in a period of two years from 2017 to 2019, and lost fifty percent of its value in a period of three years from 2017 to 2020. On average, between 2017 and 2021, Zambian kwacha lost forty percent against the US dollar.

The appreciation of the Zambian kwacha observed in 2021 was as a result of changes in the actual supply of foreign exchange and expectations which existed concerning the International Monetary Fund's (IMF's) Special Drawing Rights (SDR) which was allocated to Zambia. This was coupled with Extended Credit Facility (ECF) with the IMF and the improvement in the copper prices. The Bank of Zambia further explained that strong copper prices had increased foreign exchange flows from the mining sector through tax receipts which the mines remitted direct to the Bank of Zambia. The Bank of Zambia was able to release more foreign exchange liquidity back into the market to reduce excess demand (Mwanza, 2021). These factors helped the kwacha to appreciate against the US dollar in 2021.

The tables 3 to 5 below show the profit margin ratios computed using financial data extracted from the financial statements published in the company's annual reports. The results of the ratios have been summarised in table 6 and graphically presented in figure 4 below.

Table 3: Gross Profit Margin

Years	**2021**	**2020**	**2019**	**2018**	**2017**
Gross Profit Margin	**$'000**	**$'000**	**$'000**	**$'000**	**$'000**
Gross Profit	102,301	118,955	101,960	113,922	130,438
Revenue	342,520	370,931	408,272	421,203	389,532
	0.30	0.32	0.25	0.27	0.33
Gross Profit Margin	**30%**	**32%**	**25%**	**27%**	**33%**

Table 4: Operating Profit Margin

Years	**2021**	**2020**	**2019**	**2018**	**2017**
Operating Profit Margin	**$'000**	**$'000**	**$'000**	**$'000**	**$'000**
Operating Profit	70,101	9,947	17,372	92,182	79,579
Revenue	342,520	370,931	408,272	421,203	389,532
	0.20	0.03	0.04	0.22	0.20
Operating Profit Margin	**20%**	**3%**	**4%**	**22%**	**20%**

Table 5: Net Profit Margin

Years	**2021**	**2020**	**2019**	**2018**	**2017**
Net Profit Margin	**$'000**	**$'000**	**$'000**	**$'000**	**$'000**
Net Profit	51,252	5,609	12,246	55,856	48,378
Revenue	342,520	370,931	408,272	421,203	389,532
	0.15	0.02	0.03	0.13	0.12
Net Profit Margin	**15%**	**2%**	**3%**	**13%**	**12%**

Table 1: Summary of Gross Profit Margin, Operating Profit Margin and Net Profit Margin

S/N	**Years**	**Exchange Rate (USD/ZMW)**	**Gross Profit Margin %**	**Operating Profit Margin %**	**Net Profit Margin %**
1	2017	10 cents	33	20	12
2	2018	8 cents	27	22	13
3	2019	7 cents	25	4	3
4	2020	5 cents	32	3	2
5	2021	6 cents	30	20	15

Table 6 above summarizes data from table 3 to table 5. This summarized data is further presented in the graph to observe the movements in relation to the devaluation of the kwacha against the US dollar.

Peer Reviewed & Refereed Journal
Volume-14, Issue-1 (February 2024)
https://doi.org/10.5281/zenodo.10825669

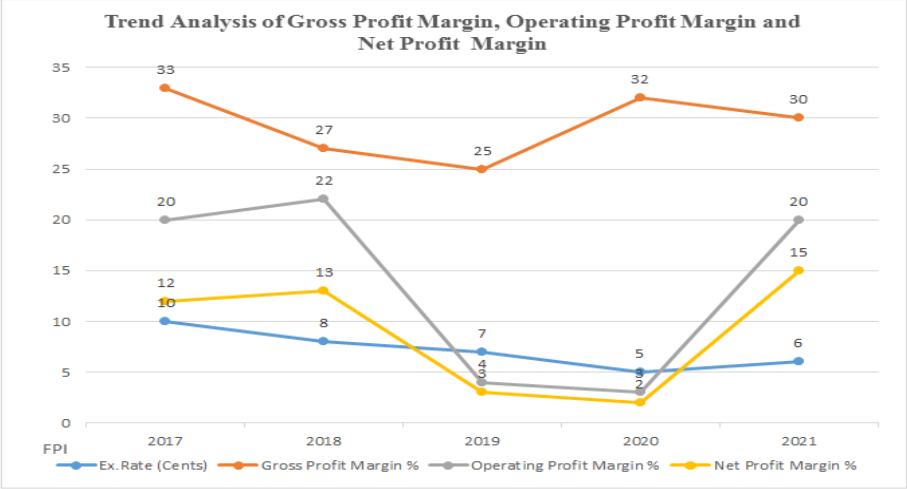


Figure 4: Trend Analyses of Profit Margins

The purpose is to determine whether devaluation of kwacha affects the company's gross profit margin, operating profit margin and net profit margin.

From figure 4 above, it can be seen that all the three profit margin ratios were moving in the same direction. As the value of the kwacha decreased so were the Gross Profit Margin (GPM), Operating Profit Margin (OPM) and Net Profit Margin (NPM). It can be seen from the year 2017 that as kwacha depreciated, gross profit margin, operating profit margin and net profit margin of the company were also reducing. The more the Zambian kwacha lost value, the more the value of the firm decreased as indicated by the three profit margin ratios shown above. It is clearly shown on the graph that the value of the firm sharply dropped between 2018 and 2019 when the kwacha constantly lost value against the US dollar and this continued up to the year 2020. As soon as kwacha started appreciating in 2021, the operating profit margin and net profit margin started showing positive trends except for gross profit margin which showed some improvements in 2020 and a minor drop in 2021.

The period when performance of kwacha was at its worst against the US dollar, was the time when two profit margin ratios (i.e., operating profit margin and net profit margin) performed at lowest.

Another key observation from figure 4 above is that the gap between the gross profit margin and the net profit margin became wider during the period when kwacha's value was at its lowest. Inversely the gap between the gross profit margin and the operating profit margin became narrower during the period of kwacha's appreciation. The increased gap between the two margins resulted into the company making less profits when kwacha lost its value and vice versa.

Regression Equation on Revenue, Operating Profit and Profit after Tax

Table 7: Regression Equation on Revenue

Year	Exc. rate USD/ZMW (in Cents)	Revenue ($'000)
2017	10	389,532
2018	8	421,203
2019	7	408,272
2020	5	370,931
2021	6	342,520

	Exc. rate USD/ZMW (in Cents)	Revenue ($'000)
Exc. rate USD/ZMW (in Cents)	1	
Revenue ($'000)	0.497298391	1
R-Square =0.4972983912	0.247305689	

Peer Reviewed & Refereed Journal
Volume-14, Issue-1 (February 2024)
https://doi.org/10.5281/zenodo.10825669

Table 8: Regression Equation on Operating Profit

Year	Exc. rate USD/ZMW (in Cents)	Operating Profit ($'000)	
2017	10	79,579	
2018	8	92,182	
2019	7	17,372	
2020	5	9,947	
2021	6	70,101	
		Exc. rate USD/ZMW (in Cents)	Profit After Tax ($'000)
	Exc. rate USD/ZMW (in Cents)	1	
	Operating Profit ($'000)	0.624419778	1
	R-Square = 0.6244197782	0.38990006	

Table 9: Regression Equation on Profit after Tax

Year	Exc. rate USD/ZMW (in Cents)	Profit After Tax ($'000)	
2017	10	48,378.00	
2018	8	55,856.00	
2019	7	12,246.00	
2020	5	5,609.00	
2021	6	51,252.00	
		Exc. rate USD/ZMW (in Cents)	Profit After Tax ($'000)
	Exc. rate USD/ZMW (in Cents)	1	
	Profit After Tax ($'000)	0.567957477	1
	R-Square = 0.5679574772	0.322575696	

Table 10: Summary of Correlations and R-Squares from the Regression Equation

	Revenue	Operating Profit	Profit After Tax
Correlation	0.50	0.62	0.57
R-Square	0.25	0.39	0.32
Equation	Y=8,036*X+32,636	Y=12,641*X-37,179	Y=7,017*X-15,854

Table 10 above shows the summary of correlation coefficients for three key financial performance indicators used in the study. These were computed using advanced excel and it can be seen that in all the three there was a positive relationship. It indicates that on average about 56 percent of the financial performance can be explained by the effect of foreign exchange rates. There was a medium positive correction between the foreign exchange rates and the dependent variables.

Peer Reviewed & Refereed Journal
Volume-14, Issue-1 (February 2024)
https://doi.org/10.5281/zenodo.10825669

Linear Regression Analysis

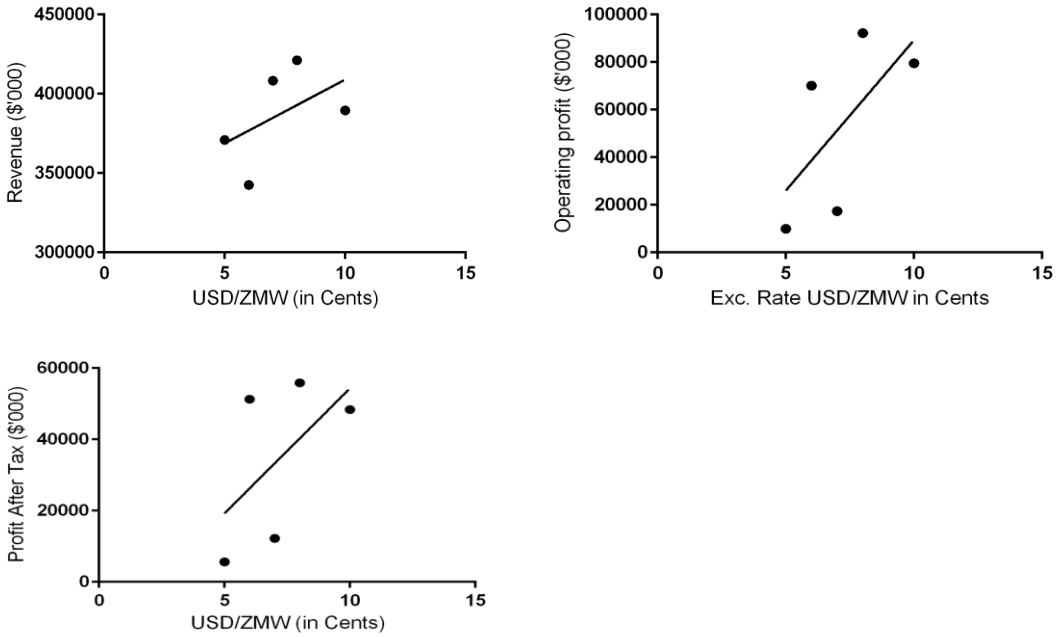


Figure 5: Analyses of Linear Regression for Revenue, Operating Profit and Profit after Tax

The results from the linear regression charts above using the GraphPad software indicate a positive relationship between the value of kwacha against the US dollar and the three dependent variables (Revenue, Operating and Profit After Tax). It implies that when kwacha gains value against US dollar, financial performance goes up as measured by revenue, operating profit and profit after tax, and vice versa. It was also observed that correlation coefficient and r- square obtained from the regression equation by using Microsoft excel and that obtained from the GraphPad software were similar, confirm that the results are correct.

VI. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary of Findings

The aim of the study was to assess the effect of foreign exchange rates on financial performance of power utility companies in Zambia as a result of the devaluation of the Zambian kwacha. The researcher used Copperbelt Energy Corporation Plc to conduct the study because CEC Plc is a biggest privately owned power utility company in Zambia which is involved in the generation, transmission and distribution of electricity. Furthermore, CEC Plc is a registered company on the Lusaka Securities Exchange (CEC, 2021). The purpose of the study was also to provide better understanding of the effect of foreign exchange rates on financial performance of companies involved in the power trading. The main findings have shown that foreign exchange rates have an effect on the financial performance of Copperbelt Energy Corporation, a power utility presented in the sub-sections below as mirrored by the research questions.

Conclusions

The main objective of this research was to determine the effect of foreign exchange rates on the financial performance of power utility companies in Zambia. The research was limited to one company (Copperbelt Energy Corporation) out of the 5 main companies involved in power trading in Zambia and secondary data for the period of 5 years from 2017 to 2021 was used in conducting the study. Data was analysed using Microsoft excel, regression equation and GraphPad software.

Based on the results, the findings have clearly shown that the relationship existed between the foreign exchange rates and the financial performance of the company. All the three answers pointed out to the fact that the devaluation of kwacha as a result of unfavorable movement of exchange rates on the foreign exchange markets had an effect on the financial performance of the company. Further, the analysis of other accounting ratios also pointed to the same fact that the relationship existed between the company's financial performance and the ratios which were used in the study. This suggests that there was an effect on the financial performance of the

Peer Reviewed & Refereed Journal
Volume-14, Issue-1 (February 2024)
https://doi.org/10.5281/zenodo.10825669

company caused by the foreign exchange rates. The results showed that whenever there was a drop in the value of kwacha, firm's financial performance also went down and vice versa.

Recommendations

From the findings of the study and the conclusions thereof, several recommendations have been suggested. From the start, Copperbelt Energy Corporation Plc should take into account foreign exchange risk that the company is exposed to. Upon identifying these foreign exchange risks, the company should implement appropriate foreign exchange risk management tools to minimize any negative effect of foreign exchange. As CEC trades across borders, risks such as transaction exposure may be inevitable. The researcher recommends the following methods to manage some of the transaction exposure risks that the company may face.

- ***Money Market Hedge:*** The company may hedge transaction exposure by lending and borrowing in the domestic and foreign money markets. The company may borrow in foreign currency to hedge foreign currency receivables and lend in foreign currency to hedge foreign currency payables.
- ***Exposure Netting:*** The other method which the company may adopt is exposure netting where the company matches its assets and liabilities in the same currency and only pays or receives the balance depending on which one is higher. Netting is also referred to as the practice of consolidating two different settlements in order to create a single value.
- ***Hedging Using Invoice Currency:*** This is where large firms generally use this method to hedge against exchange rate fluctuations. As it was alluded to in the Journal of Money, Credit and Banking that big entities are more likely to hedge transaction exposure by invoicing their exports in a foreign currency (Lyonnet, Martin, & Mejean, 2020).

REFERENCES

[1] ACCA. (2020). *Financial reporting.* London: BPP Learning Media Ltd.

[2] Aghion, P. A. (2009). Exchange rate volatility and productivity growth: The role of financial development. *Journal of Monetary Economics.*

[3] Ahmed. (2020). *The political economy of the in sub-saharan Africa – A case study of Zambia.* University College London.

[4] Ali, B. (2019). *Devaluation of domestic currency effect on economic growth.*

[5] Al-Sumaiti, A. S. (2015). *Power generation shortage in developing countries: causes, challenges and solutions.* Ontario.

[6] Arikewuyo, K. A. & Akingunola, R. O. (2019). *Impact of interest rate deregulation on fund mobilisation of deposit money banks in Nigeria. Journal of Varna University of Economics, 63*(2), 1-83.

[7] Arsić, S. & Obradović, J. (2013). *The financial assistance from the insufficient to overcome the crisis: YES OR NO?*. International Scientific Conference, 111.

[8] Augenblick, N. & Lazarus, E. (2019). *Restrictions on asset-price movements under rational expectations: Theory and evidence.*

[9] Balanyan, A., Semikolenova, Y., Hankinson, D., Nash, S & Parcels, C. (2021). African utilities during covid-19. *Utility Performance and Behaviour in Africa Today, 3.*

[10] Banerjee, M. K. (2015). *The financial performance of India power sector*. Washington DC.

[11] Bayliss, K. & Pollen, G. (2020). The power paradigm in practice: A critical review of developments in the Zambian electricity sector. *World Development, 1.*

[12] Beattie, A. (2015). The history of money: From barter to banknotes. *Investopedia, 1.*

[13] Bindu, A. S. (2021). *Mint parity theory.*

[14] BOZ. (2022). *Monetary policy statement.* Lusaka: BOZ. BOZ.

[15] CEC. (2020). *Annual report, 2020.* Copperbelt Energy Corporation Plc.

[16] CEC. (2021). *Annual report, 2021*. Copperbelt Energy Corporation Plc.

[17] Chipili, J. M. (2013). Exchange rate volatility and trade flows in Zambia. *Zambia: African Development Review, 25*(1), 55-66.

[18] Chipili, J. M. (2015). Exchange rate volatility and trade flows in Zambia. *African Development Review, 25*(1), 55-66.

[19] Cristina, M. S. & Ramona, O. (2020). The challenges of reforming the international monetary system in the post covid-19 world. *Studies in Business and Economics, 15*(3), 66.

[20] Dufera, A. (2020). Financial performance evaluation (A Case Study of Awash International Bank (AIB)). Mekelle, Ethiopia.

[21] Efremenko, I., Haabazoka, L. & Larionov, V. (2017). European Research Studies Journal. In: *Development of the International Monetary System Conditions of Globalization*, pp. 269-279.

[22] Elhussein, N. H. & Osman, O. E. (2019). Exchange rate fluctuations and financial performance of banks: Evidence from Sudan. *International Journal of Economics and Finance, 11*(12), 15.

[23] ESCOM, E. S. (2013). *Integrated energy report.* Zambia: ESCOM.

[24] Etikan, I., Musa, S. A. & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics, 5*(1), 1-4.

[25] Giovanoli, M. & Devos, D. (2010). *International monetary and financial law.*

[26] Gulleid, G. J. (2020). *The effect of exchange rate fluctuations on the financial performnace on forex bureaus in Nairobi.* Nairobi.

[27] Hameed, L & Khan, D. A. (2016). Population growth and increase in domestic electricity consumption in Pakistan: A case study of bahawalpur city. *The Explorer Islamabad: Journal of Social Sciences, 2*(1), 1.

[28] Huenteler, J., Hankinson, D., Rosenthal, N., Balabanyan, A., Kochnakyan, A., Rana, A & Foster, V. (2020). *Cost recovery and financial viability of the power sector in developing countries.* World Bnak Group.

[29] Hussain, S., Hassan, A. A., Quddus, A., Rafiq, M., & Nguyen, V. C. (2021). Cash conversion cycle sensitivity by moderating role of exchange rates volatility on firm's financial performance. *Business: Theory and Practice, 22*(2), 277-289.

[30] Igwe, I. O. (2018). History of the international economy: the bretton woods system and its impact on the economic development of developing countries. *Athens Journal of Law, 4*(2), 105-126.

[31] Innocent.U.Duru, Eze, M. A., Saleh, A. S., Uzoechina, B. I., Ebenyi, G. & Chukwuka, E. (2022). Exchange rate volatility and exports: the Nigerian scenario. *Asian Journal of Empirical Research,* 11-28.

[32] Isiani, M. C., Obi-Ani, N. A., Obi-Ani, P., Chidume, C. G & Okoye-Ugwu, S. (2021). Interrogating the international monetary fund (IMF) policies in Nigeria, 1986–2018. *Cogent Arts & Humanities, 4.*

[33] Kaseke, N & Hosking, S. (2012). Cost of electricity load shedding to mines in Zimbabwe: Direct assessment approach. *International Journal of Physical and Social Sciences, 2*(6), 207.

[34] Khalid, W. (2017). Effects of interest rate and exchange rate on the stock market performance of Pakistan: A cointegration approach. *Journal of Finance and Economics, 5*(5), 3.

[35] Lagat, C. C. & M. Nyandema, D. (2016). The influence of foreign exchange rate fluactuation on the financial performance of commercial banks listed at the Nairobi securities exchange. *British Journal of Marketing Studies, 4*(3), 2.

[36] Lagat, C. C & Nyandema, D. M. (2016). the influence of foreign exchange rate flactuation on the financial performance of commercial banks listed at the Nairobi securities exchange. *British Journal of Marketing Studies, 4*(3), 1-11.

[37] Lagat, C. C & Nyandema, D. M. (2016). The influence of foreign exchange rate fluctuations on the financial performance of commercial banks listed at the Nairobi securities exchange. *British Journal of Marketing Studies, 4*(3), 1-11.

[38] Liu, B., Zhang, L., Sun, J., Wang, D., Liu, C., Luther, M & Xu, Y. (2020). Composition of energy outflows embodied in the gross exports of the construction sector. *Journal of Cleaner Production, 248,* 2.

[39] Lyonnet, V., Martin, J & Mejean, I. (2020). Invoicing currency and financial hedging. *Journal of Money, Credit and Banking, 1.*

[40] MAGWIZI, B. T. (2011). *Exchange rate behavior in the cases of the Zambian kwacha and malawian kwacha: is there misalignment?.* Grahamstown.

[41] Maria Elojarvi, A. R. (2012). *4th International Conference on Sustainable Energy and Environment.* Bankok, Thailand.

[42] Marvin, K. M & Fred, M. (2017). Factors which influence the exchange rate of the kwacha and its effects on the Zambian economy. *The International Journal of Multi-Disciplinary Research, 4.*

[43] Mbithi, M. A. (2013). *The effect of foreign exchange rates on the financial performance of firms listed at the Nairobi securities exchange. Nairobi.*

[44] Melvin, M. (2020). *International money and finance.* Academic Press.

[45] Mengesha, E., Worku, M & Makonnen, S. (2014). *Financial performance analysis: In the case of addis ababa home depot plc.* Addis Ababa.

[46] Mengistu, A. (2017). *Assessment of source of funds, power system efficiency, electricity tariff and financial performance: a case of ethiopian electric power and ethiopian electric utility*. Addis Ababa.

[47] Misra, P. (2017). An *empirical analysis of financial performance of leading power sector. International Journal of Research in Economics and Social Sciences (IJRESS), 7*(11), 713-717.

[48] Muhammad, L. & Ushahemba, I. V. (2013). Empirical Analysis of Exchange Rate Volatility and Nigeria Stock Market Performance.

Peer Reviewed & Refereed Journal
Volume-14, Issue-1 (February 2024)
https://doi.org/10.5281/zenodo.10825669

International Journal of Science and Research (IJSR), 2.

[49] Mukumba, C. & Mukuka, B. (2016). Cut international. *The Energy Crisis and its Impact on the Economy*, *1*, 1.

[50] Mungule, K. O. (2020). *The determinants of the real exchange rates in Zambia.*

[51] Mwanza, B. (2021). *Statement on developments in the foreign exchange market.* Press Statement, Lusaka.

[52] Myanga, P. (2019). *A study of the macro-economic factors affecting stock market performance in Zambia.* A Case of the Lusaka Securities Exchange.

[53] Nelson, R. M. (2013). Current debates over exchange rates: Overview and issues for congress. *Congressional Research Service*.

[54] Neoen. (2022). Power Africa. *Zambia Energy Sector Overview, 9.*

[55] Nnoli, I. & Enilolobo, O. (2023). Inflation, exchange rate and agricultural export in Nigeria. *Greener Journal of Agricultural Sciences,* 1-9.

[56] Okaro & Sunday, C. (2017). Currency devaluation and Nigerian economic growth (2000-2015). *NG-Journal of Social Development, 6*(1), 25-37.

[57] Paun, D. (2017). Sustainability and financial performance of companies in the energy sector in Romania. *MDPI, 1.*

[58] PMRC. (2013). The state of the energy sector in Zambia. *Implications for Industrial Development, Jobs and Poverty, 4.*

[59] Rai, A. (2020). Financial performance analysis. *Financial Performance Analysis of Power Generating Companies in India, 11.*

[60] Report, E. (2021). *Energy sector report.*

[61] Sanane, N. K. (2020). An analysis of how depreciation of the Zambian Kwacha (against the dollar) has affected Zambian businesses: A case study of the road local contractors. *The International Journal of Multi-Disciplinary Research,* 1-42.

[62] Santosa, P. W. (2019). Financial performance, exchange rate and stock return: evidence from manufacturing sector. *Journal Manajemen Teknologi, 18*(3), 205-217.

[63] Sargent, T. J. (2013). *Rational expectations and inflation*, (3rd ed.). Chicago: Princeton University Press.

[64] Shula, K. (2015). *The inevitable depreciation of the Zambian Kwacha.*

[65] Sichoongwe, K. (2016). Effects of exchange rate volatility on the stock market: The Zambian experience. *Journal of Economics & Sustainable Development, 7*(4), 2.

[66] Sichoongwe, K. (2016). Effects of exchange rate volatility on the stock market: The Zambian experience. *Journal of Economics and Sustanable Development, 114.*

[67] Umar, B. B. & Kunda-Wamuwi, C. F. (2019). Socio-economic effects of load shedding on poor urban households and small business enterprises in Lusaka, Zambia. *Energy Environment Research, 9*(2), 20.

[68] Utomo, D., Ghozali, I. & Jumanto, J. (2020). Financial performance, exchange rate, and firm value: The Indonesian public companies case. *Organisations and Markets in Emerging Economies, 11*(2), 348-366.

[69] ZDA. (2020). *Zambia development agency energy sector report.* Lusaka.

[70] Zhang, C. A. (2017). The impact of electricity shortage on firm productivity: Evidence from Pakistan. *World Bank Group.*