

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.

BY

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A Dissertation submitted to the University of Zambia in partial fulfilment of the requirements for the award of the Degree of Master of Business Administration in Finance.

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DECLARATION

I, **Anderson Banda**, do hereby declare that this work is my original work achieved through personal reading and research. This work has never been submitted to the University of Zambia or any other Universities. All sources of data used and literature on related works previously done by others, used in the production of this Dissertation have been duly acknowledged. If any omission has been made, it is not by choice but by error.

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APPROVAL

This Dissertation by **Anderson Banda** is approved as a partial fulfilment of the requirements for the award of the Degree of Master of Business Administration in Finance.

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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. Secondary data used in this study was extracted from Copperbelt Energy Corporation Plc's published audited financial statements for the period of 5 years from 2017 to 2021. Regression analysis using GraphPad software and Microsoft tools were used to analyze 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

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LIST OF ACRONYMS

BN	Background Note
BOZ	Bank of Zambia
CEC	Copperbelt Energy Corporation
CPC	Copperbelt Power Corporation
ESCOM	Electricity Supply Commission
GDP	Gross Domestic Product
HDI	Human Development Index
HIPC	Heavily Indebted Poor Countries
IAS	International Accounting Standards
IASB	International Accounting Standards Board
IDC	Industrial Development Corporation
IMF	International Monetary Fund
IPP	Independent Power Producers
ITO	International Trade Organisation
KWH	Kilowatts-Hour
LHPC	Lunsemfwa Hydro Power Company
MDRI	Multilateral Debt Relief Initiative
MW	Mega Watts
NWEC	North Western Energy Corporation
PMRC	Policy Monitoring and Research Centre
PPP	Purchasing Power Parity
SAPP	Southern African Power Pool
SOE	State Owned Enterprises
UNZA	The University of Zambia
WTO	World Trade Organisation
ZCCM-IH	Zambia Consolidated Copper Mine - Investments Holding
ZDA	Zambia Development Agency
ZESCO	Zambia Electricity Supply Corporation

CHAPTER 1

RESEARCH BACKGROUND

1.1. Introduction

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). Energy is not something that can be ignored as many things are driven by energy. Energy is found everywhere in the world and it is produced using different methods. 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 of generating, transmitting and distributing electricity, 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). This is true because an increase in population will drive high the demand for electricity as economic activities which people engage in increase. Increased population leads to an increase in the construction of homes and each home requires electricity. Similarly, new businesses emerge which require electricity to operate effectively.

In 2016, Lubna Hameed and Dr. A. A. Khan observed in their study 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. Utility companies provide services such as electricity, natural gas, dams, water and sewerage services to the large group of consumers. 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, and this

was even before Covid 19 emerged (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. Power utility companies are purely involved in the production and trade of electricity.

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 catalyst for development (Rai, 2020). Sources of power include; hydro power, fossil energy and solar energy. Decent financial performance of power generating companies is key to economic growth of the nations as machineries in different industries require adequate power supply to keep up with their daily operations.

Expanding the capacity of power generation, transmission and distribution requires serious investments. According to the World Bank study of India, it was stated 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 shows 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 impact of energy crisis cannot be over emphasized as it can be felt by every citizen due to increased loadshedding in the nations where there is scarcity of power. When power is in short supply leaders tend to ration the available power to consumers. Scarcity of power slows down production, which in turn lowers the nations' gross domestic product (GDP). Countries with low production are forced to depend on other nations by importing goods and services from outside their borders. Whenever a country produces less, it is forced to spend more money to import products, goods and services more than it exports. This has an effect on a nation as it lowers its GDP.

In the journal article written by Nyasha and Stephen, it was stated that the mining sector in Zimbabwe was badly hit by electricity load shedding. This was due to several factors that

contributed to inadequate supply of power, among them being vandalism, interference from politicians, drought, aged equipment, lack of ability to expand the generation of power and high cost of supply to the thermal plant (Kaseke & Hosking, 2012). Recent development revealed that Zimbabwe had to cease generation of electricity on 28th November 2022, from the Zambezi River at the South Power Station of the famous Kariba Dam due to low water levels. At the same time, Zambia announced that there would be 6 hours of load shedding every day because water levels at the Kariba Dam had drastically reduced. These are clear signs that the energy sector must have adequate funds to invest in new projects to increase power generation to meet the high demand. A lot of funds would also be required if power utility companies were to diversify into other energy sources. In the study conducted by Chenai and Mukuka, it was indicated that more than thirty countries in Africa experience shortage of power including Zambia (Mukumba & Mukuka, 2016). This was primarily because of low investment levels in the energy sector that had failed to meet the demand of the countries' high growth. It was stated by the duo that the demand for electricity kept on increasing by 200MW every year (Mukumba & Mukuka, 2016). In order for the economy of the nation to perform well there must be stable or uninterrupted power supply. The use of electricity increases in line with the increase in population, industries and increase in people's disposable income (Umar & Kunda-Wamuwi, 2019).

1.2. Background of the study

In Zambia, the most pressing social, economic, and environmental issues affecting all areas are related to energy and its accessibility. It is especially important in developing nations since it has a big impact on how poverty is reduced. Numerous research examining the relationship between reliable energy availability and The Human Development Index (HDI) show that reliable energy access promotes human development. Energy influences access to clean water and sanitation which is primarily applicable in rural clinics and schools (Marvin & Fred, 2017). Furthermore, having access to dependable energy has a significant impact on a nation's capacity to achieve its developmental goals. Energy access and economic growth go hand in hand.

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 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).

In the Background Note (BN) from the PMRC Energy Series examines the health of Zambia's energy industry and what it portends for future economic growth, industrial development, and job creation. The goal is to contribute to the present policy discussions surrounding the energy sector and to urge the government to hasten the creation of policies and financial investments in infrastructure and renewable energy sources (ZDA, 2020).

According to Policy Monitoring and Research Centre (PMRC), it is 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 energy which is reliable. In the research conducted by PMRC it indicates that, according to Ministry of Finance, over the period of 10 years, Zambia's economy had been growing at the rate of 5 percent per annum on average and that what can improve delivery of services in rural areas and reduce poverty levels is development and strategic usage of national energy sources (PMRC, 2013).

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.

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 has 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.

Companies today operate across borderlines, making foreign exchange rates a crucial element in running businesses. Other companies may import their raw materials (inputs) needed in production or finished product for sale while other companies may export their products and services to other countries. This makes it impossible to ignore the effect of foreign exchange rates on power utility companies. Considering that companies trade internationally, exchange rates come into play because settlement of bills will have to be done between two or more companies whose currencies are different. A certain rate has to be determined at which a single unit of one currency will be exchanged for the unit of another currency. As a result, these currencies tend to fluctuate over time due to the law of demand and supply.

Financial performance analysis is a very important part of any entity in the current dynamic and flexible environment. 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 which helps to 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. 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 if the company trades internationally or if the company sources its inputs from the foreign markets. 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 value or lose value.

There are two terms commonly used when it comes to the value of currencies. The terms used are appreciation and depreciation of currencies. When a local currency loses value against any foreign currency, it is said that the currency has depreciated as citizens will require more of local currency to buy one unit of foreign currency. A term like devaluation of the currency is also used when the currency loses its value. Devaluation is defined as the reduction in the official value of a nation's currency in relation to other currencies. On the other hand, when a local currency gains value against other currencies, it is said that the currency has appreciated. This implies that less amount of local currency will be required to exchange it for a unit of a foreign currency.

With the Zambian kwacha being at the centre of this study, it can be stated that the devaluation of the Zambian kwacha has several effects on the performance of any business as domestic residents may find it very costly to import goods from foreign markets or Zambian citizens may find it costly to travel abroad. Devaluation may also lead to the reduction in the output of the nation if imports are more than the exports. Contrary, devaluation of a local currency maybe advantageous to those businesses that deal in exports more than they import as it becomes cheaper to export to foreign markets. Basit Ali observes in his study that devaluation is pointedly related to the growth of the economy and further states that devaluation in the local currency is harmful, however, useful for the country depending on the policies made by the policy makers (Ali, 2019).

It was indicated in a study conducted in the Asian journal of empirical research 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 rate had a significant and 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 a study done in Nigeria by Ikenna Nnoli, it was 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 two terms i.e., devaluation and depreciation were used interchangeably because depreciation and devaluation lead to loss of value of the local currency and appreciation, on the other hand, leads to the local currency gaining value.

Historically, exchange rates in Zambia have gone through several regimes which are categorized by what is called fixed exchange rate policy and floating exchange rate policy. Zambia was running a fixed exchange rate policy from the time it got its independence in 1964 to the year 1982 and from 1987 to 1991 (Shula, 2015). Between 1983 to late 1985, the Zambian kwacha was pegged to currencies of its main trading partners with a monthly 1 percent adjustment which was later increased to 1.5 percent because at that time the economy was in depression. In late 1985, a floating exchange rate was introduced by the authorities, and in 1992 a mechanism of free-floating exchange rate was also introduced (Shula, 2015). Shula Kampamba states in his report that at that time commercial banks were allowed to start trading in foreign currencies with the Bank of Zambia (BOZ) thrice in a week (Shula, 2015). Due to instability in the exchange rates, the adjustment was made from trading three times in a week to trading daily with the aim of controlling exchange rates

volatility. He further indicated in his report that although all these interventions were put in place, Zambia continued to experience volatility increase in foreign exchange rates. In July 2003 an interbank foreign exchange market system was introduced so that weaknesses perceived in the former exchange rate regimes could be addressed (Shula, 2015). It is clear that Zambia has not been spared from the exchange rate volatility. Records from the Bank of Zambia (BOZ) show that the Zambian kwacha has been depreciating and appreciating over a period of time now.

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

1.3. Statement of the problem

Financial performance of an entity shows how competitiveness the business is and the potential that the business has. In conducting 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. According to International Accounting Standards (IAS 21) different rules are used to translate transactions of the above-mentioned statements into a presentation currency if a company has subsidiaries operating in other countries other than the country where the parent company is based.

Considering the significant role that Copperbelt Energy Corporation Plc plays in generating, transmitting and distributing power, and the fact that it is trading across borders, 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 the financial performance as a result of the devaluation of Zambian kwacha has been done in the energy sector in Zambia. This research will

seek 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. The benefit of this research is providing insightful information to shareholders and stakeholders. This information will be helpful in decision making concerning the effect that foreign exchange rates may have in the energy sector and how to deal with the possible downsides in future investments.

1.4. The Aim of The Study

The aim of the study is to assess the effect of foreign exchange rates on the financial performance of the energy sector in Zambia as a result of the devaluation of kwacha. The study is further aimed at providing information which will be useful to shareholders and stakeholders in decision making. Understanding of the viability of the energy sector will be enhanced and help future investors to be aware of any effect that may arise due to exchange rates volatility.

1.5. Research Objectives

The objectives of this study are:

- To assess the effect of foreign exchange rates on the financial performance of power utility companies in Zambia as measured by CEC's revenue.
- To assess the effect of foreign exchange rates on the financial performance of power utility companies in Zambia as measured by CEC's operating profit.
- To assess the effect of foreign exchange rates on the financial performance of power utility companies in Zambia as measured by CEC's profit after tax.

1.6. Research Questions

- what is the effect of foreign exchange rates on the financial performance of power utility companies in Zambia as measured by CEC's revenue?
- What is the effect of foreign exchange rates on the financial performance of power utility companies in Zambia as measured by CEC's operating profit?
- What is the effect of foreign exchange rates on the financial performance of power utility companies in Zambia as measured by CEC's Profit after tax?

1.7. Scope of the study

The research will not cover all companies that are involved in power trading in Zambia. The study will only deal with the effect of foreign exchange rates on the financial performance of Copperbelt Energy Corporation Plc and will only cover the period of five (5) years from 2017 to 2021. The research will be conducted from Lusaka and only secondary data, which is historical in nature, will be used in this study. Since only one company out of the five major companies in the power trading will be used for the study, there will be need for further studies to be conducted on other companies in this sector to gain a deeper understanding.

1.8. Significance of the study

The significance of the study is to provide better understanding of the effect that foreign exchange rates have on the financial performance of power utility companies in Zambia. The results from the study will help management in decision making. Further, the study will be useful to shareholders to make sound decisions regarding their investment. Financial trend analysis will be of great use in predicting the future of the energy sector.

1.9. Operational Definition

Energy: Energy is defined as the capacity or effort to create heat, light, or motion (capacity to do work). Energy is also used to generate power. Power is a measure of the rate at which energy flows, and in electrical systems it is measured in watts (W). A watt is a measure of energy flow.

Exchange rate: Exchange rate is the rate at which one currency will be exchanged for another currency. The exchange rate is also regarded as the value of one country's currency in relation to another currency.

Currency Fluctuation: Currency fluctuations are a natural outcome of floating exchange rates, which is the norm for most major economies. Numerous factors influence exchange rates, including a country's economic performance, the outlook for inflation, interest rate differentials, capital flows.

Fluctuation: an irregular shifting back and forth or up and down in the level, strength, or value of something.

A Company is a legal entity formed by a group of individuals to engage in and operate a business enterprise in a commercial or industrial capacity.

Corporation: A corporation is a business structure that is legally separate from its owners, who are known as shareholders. Corporations have limited liability for their owners, which means that shareholders are only responsible for the amount of money they invested in the corporation and are not responsible for any of the corporation's debts or liabilities.

Performance: Performance refers to the degree of the achievement of objectives or the potentially possible accomplishment regarding the important characteristics of an organization for the relevant stakeholders. Performance is therefore principally specified through a multidimensional set of criteria.

Financial Performance: Financial Performance refers to the degree to which financial objectives being or has been accomplished and is an important aspect of finance risk management. It is the process of measuring the results of a firm's policies and operations in monetary terms. It is used to measure firm's overall financial health over a given period of time and can also be used to compare similar firms across the same industry or to compare industries or sectors in aggregation.

1.10. Thesis Outline

This thesis is organized into six chapters. Chapter one focuses on the research background of the study and states out the statement of the problem, research objectives, research questions, scope of the study and significance of the study. Chapter two covers literature review by providing an overview of foreign exchange rates, company financial performance, an overview of Copperbelt Energy Corporation Plc and a review of similar studies conducted. Chapter three looks at the theoretical framework and conceptual framework of the study whilst chapter four outlines the research design and methodologies. Data presentation is covered under chapter five and finally chapter six provides the conclusion of the study and the recommendations made by the researcher.

CHAPTER 2

LITERATURE REVIEW

2.1. Introduction

Chapter one looked at the background of the study. Now this chapter presents reviewed literature linked to several studies done in many countries across the globe related to this topic. The chapter is structured into a number of sections starting with the financial performance and followed by overview of the foreign exchange rates. Other sections in which the chapter is structured are evolution of foreign exchange rate determination, Company's Financial Performance, Zambia energy sector review, overview of Copperbelt Energy Corporation Plc and a review of similar studies conducted on the foreign exchange rates in relation to company's financial performance.

2.2. Financial Performance

Financial performance is defined as the ability to leverage operational and investment decisions and strategies to achieve a business' financial stability. Financial performance comprises of achievement measurements of an organization. Financial performances measure an organization's benchmarks and financial objectives.

Even though there are four main types of financial statements, not all of them are used to carry out an analysis of financial performance. 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). Whilst the statement of profit or loss and other comprehensive income is used to measure the financial performance of the company, the statement of financial position is used to measure the company's financial position by looking at the company's assets, liabilities and equity. As for the statement of cash flows, IAS 7 states that the main aim of the statement of cash flows is to measure the company's ability to generate cash and cash equivalents. Coming to the statement of changes in equity, it is an expansion of the equity section of the statement of financial position as it shows the movements in the equity (ACCA, 2020).

Performance is the result of the fulfillment of the tasks assigned. Company performance describes how individuals in the company try to achieve a goal. Company performance illustrates the

magnitude of the results in a process that has been achieved compared with the company's goal (Lagat & Nyandema, 2016). Company's performance is evaluated in three dimensions. The first dimension is company's productivity, or processing inputs into outputs efficiently. The second is profitability dimension, or the level of which company's earnings are bigger than its costs. The third dimension is market premium, or the level of which company's market value is exceeding its book value (Aghion, 2009).

Financial performance plays an important role in the company's performance that is expressed in monetary term. Financial performance emphasizes on variables related directly to the financial report. Before investing their funds, investors should first know about 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 companies, a company is expected to be able to maintain and improve its performance in order to compete with others. Zambia's energy and fuel sector has been experiencing seemingly unstoppable growth for the last decade. The increase seems adorable from below zero amount to the amount of 60.11 percent in two years (Khalid, 2017).

The Development of the energy sector in Zambia has increased in this decade. It is seen from the rampant development that greatly increased in the field of utilization throughout Zambia. The main importance of the study emerges from the fact that energy sector plays a significant role in enhancing the country's economy. It has also been the primary concern of business practitioners in all types of organizations since financial performance has implications to organization's health and ultimately its survival. 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). Since the Bretton Woods fixed exchange rate system was abolished in 1971, exchange rate changes have been a major source of anxiety for everyone, including investors, analysts, managers, and shareholders. A system of floating exchange rates was instituted to replace this one, in which the cost of currencies is decided by the supply and demand for money. Exchange rates may affect any company through a variety of business operation models. A company may produce at home for

export sales as well as domestic sales or a company may produce with imported as well as domestic components. A company may even produce the same product or a different product at plants abroad. The model of the company must be broad enough to capture all of these channels.

2.3. 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, the relative value of one currency in terms of another, 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. In his case study on the effect of interest rates and exchange rates on the stock market performance in Pakistan, 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). In their journal article, 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). There are several currencies just like there are several nations. Almost every nation in the world has its own official currency, although some of the countries use common currencies. Over the years, exchange rate has not been static. It keeps on changing based on economic factors. One country’s currency may appreciate whilst the other country’s currency may depreciate.

When a company decides to source its products, stocks, or services internationally or export its products or services, the foreign exchange rate comes into play. 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 independence in 1964 until 1982 and from 1987 to 1991 (Shula, 2015).

Economic policy has recently been concentrated on boosting economic growth and lowering poverty by consolidating the stability achievements obtained since the beginning of economic reforms in the early 1990s. The government also places a high priority on improving public financial management and accountability as well as financial and commercial sector development. Shortly after the nation obtained its independence in 1964, industrialization based on import substitution was adopted as the government's top objective before the introduction of economic reforms.

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 exchange 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 mid 1990s.

As a result, the economy was liberalized as market-oriented reforms and 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 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).

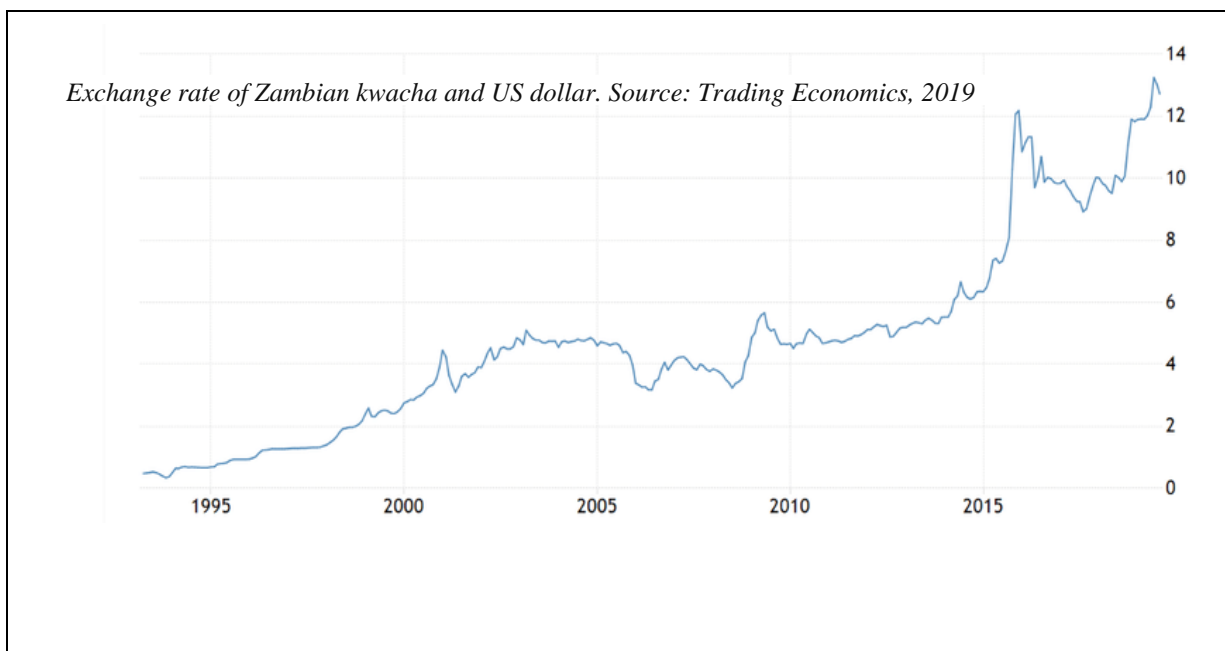


Figure 2.1: Exchange rate of Zambian kwacha and US dollar

According to figure 2.1, the 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. During the same period, remarkable economic improvements were posted, evinced by sustained real GDP growth since early 2000, showing a strong growth in agricultural output which were supported by good weather and appropriate farmer input support programme by government. In the mining

sector recovery was recorded following huge re-investment after privatising the state-owned mining conglomerate. In tourism, pick-up was as a result of various promotional activities and in the construction sector steady growth was owing to the boom in private commercial and housing properties whilst investment in educational facilities, public health and road infrastructure were supported by the government.

Additionally, since the start of economic reforms in early 1990, inflation has steadily decreased to single digits, reflecting the stabilization program that the government had implemented. Similar to how loan rates at commercial banks have decreased in step with inflation trends. In recent years, the rate of increase of the money supply has slowed and stabilized at about 20% annually, showing the government's determination to keep inflationary pressures under control while promoting growth.

2.4. 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 one person could exchange goods and services produced by him or her with goods and services produced by another person. Andrew Beattie explains that barter system had been in use before money came into play (Beattie, 2015). Barter system worked on the principle of double coincidence. This means that two coincidences had to happen where one had to find someone who was willing to sell what you wanted and at the same time that person must be willing to accept what you had in exchange. This system of direct exchange of one commodity for another required direct satisfaction of both parties.

Lack of flexibility due to the difficulties of dividing commodities was one of many problems with the barter system. 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. The value of money comes from its functions as a means of commerce, a repository for wealth, and a unit of measurement.

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 advantages of money over barter system are that money is durable, it is homogeneous, it is portable and it is divisible. The other advantage of money is the speed it gives at which people can seal their deals. This was not so with barter system as one had to negotiate if that person felt that goods and services being exchanged were not corresponding in terms of value.

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. IMS has an effect on the foreign exchange rates, balance of payments, capital flows and international trade. On the other hand, foreign exchange rate also has an effect on the foreign investments and loans which are obtained internationally. In a paper done by I.N. Efremenko, L. Haabazoka and V.A. Larionov, it was well-known that due to several economic crises, the International Monetary System had gone through different stages of evolution and the trio stated 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).

As long as a company accesses its inputs from other countries or supplies its outputs to other countries, it is expected that payments and receipts will be made which affect two or more different currencies. This is because one company will have to convert its currency when making settlements to the other company. The monetary system passed through several regimes. During the classical gold standard regime of 1875 to 1914, countries would peg their currencies to gold and exchange rate between two currencies would be determined by their relative gold content. Under the gold standard, the monetary unit was as a certain amount of gold. However, it was not just gold which was used. Other metals such as silver were also used to peg currencies. The pegging of national currencies was later changed such that only dollar was pegged to gold and other currencies were pegged to dollar. Gold is considered to be a very vital component of the international reserve, particularly in the developed nations, due to crises that hit the globe and banks became the net purchasers of gold in 2010 (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. A year prior to the Bretton Woods Regime, world leaders met in the Bretton Woods – New Hampshire to discuss how a post war world monetary system should work. A delegate of 730 representatives from 44 countries attended the United Nations Monetary and Financial Conference (Igwe, 2018). This was a collective effort which was aimed at recovering from the impact of post-World War II. The conference was aimed at invigorating international trade by ensuring that exchange rates across the globe are standardized.

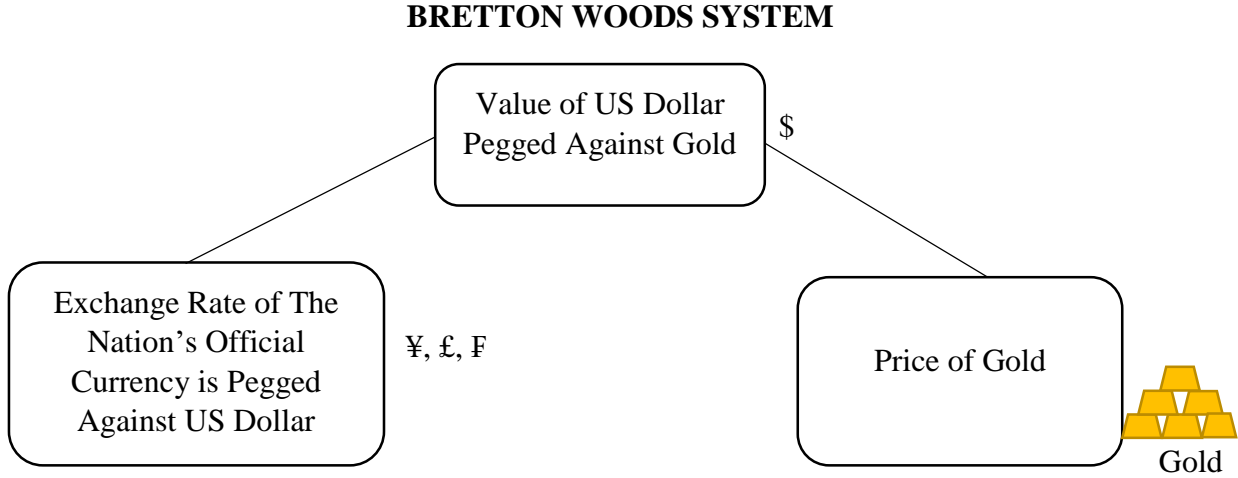


Figure 2.1.1: Exchange Rate Determination During the Bretton Wood System

The Bretton Woods Agreement led to the formation of the three main organizations. The organizations set up by the Bretton Woods Conference in 1944 were the International Monetary Fund (IMF) and the World Bank. Later in 1948 the International Trade Organisation (ITO) was also established. This International Trade Organisation was short lived and changed into the World Trade Organisation (WTO). The Bretton Woods Conference also made 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.

The International Monetary Fund was formed with the aim of providing technical assistance, financial assistance and surveillance. It promotes stability of the international monetary and

financial systems. Further, IMF also promote economic growth and employment, helps member countries plan for fiscal policies and also lends out to member countries with financial challenges. Currently the International Monetary Fund membership is at 189 member countries (Isiani, et al., 2021). On the other hand, the World Bank's main focus is on poverty reduction and aid in long term economic development. The World Bank issues loans to poor and developing nations to finance developmental projects (Arsić & Obradović, 2013)

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 in 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).

It must be noted that there are two main exchange rates. These are floating exchange rate and fixed exchange rate. Floating exchange rate is also referred to as flexible exchange rate. The two terms are used interchangeably. The fixed exchange rate is where the government, through the central bank, takes full control and manipulates the country's currency. The central government does not allow the exchange rate to be determined by the market forces. Contrary, floating exchange rate is the one that fluctuates with response to the market forces based on the law of demand and supply. The value of the nation's currency changes based on the market forces.

The floating exchange rate has its own merits and de-merits. Some of the advantages of the floating exchange rate regime is that it eliminates problems of undervaluation and overvaluation of the country's currency, it does not require holding high volumes of gold reserves, it enhances efficiency in resource allocation and it promotes venture capital in form of foreign exchange. Some of the demerits are that it discourages international trade and investment because of the uncertainties caused by the fluctuation of the currency which causes market instability and encourages speculation among traders.

In a study conducted in Nigeria, it was stated that foreign exchange was 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). A journal article

published in 2016 shows that, 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 (Sichoongwe, 2016).

Currencies are quoted using acronyms such as ZMW representing Zambian kwacha, USD representing United States dollar, JPY representing Japanese Yen, GBP representing Great British Pound etc. Foreign exchange rates are quoted using two different methods which are direct quotation and indirect quotation. The difference between the two is that direct quotation, also called American quotation, measures the amount of domestic currency which can buy one unit of another currency. For instance, ZMW/USD measures the amount of Zambian kwacha required to buy one unit of United States dollar. On the other hand, indirect quotation, also called European quotation, measures the amount of foreign currency required to buy one unit of a domestic currency.

Concerning the evolution of the exchange rates in Zambia, Oswald Mulenga mentioned in his study that Zambia had experimented numerous exchange rates regimes which are grouped into two. These are fixed exchange rate and flexible exchange rate regimes as already alluded to above. 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). Since then, Zambia has maintained the Zambian kwacha as the nation's official currency.

2.5. Company Financial Performance

According to Lagat and Nyandema (Lagat & Nyandema, 2016), it was found that the relationship which existed between indicators of financial performance and foreign exchange rates was a strong positive relationship. Financial performance is a measure of how well a company makes use of its resources to generate revenues. The company's financial performance can either be good, bad or average. Financial performance helps companies' investors know how the company is performing. Such information is key in making decision concerning their future investments. A power utility company can be considered to be financially stable if the company is capable of providing adequate electricity and at the same time make investments to meet future demands whilst generating enough funds to meet operational costs (Mengistu, 2017).

To ensure that there is access to power which is affordable, sustainable and reliable, the energy sector must be financially viable (Huenteler, et al., 2020). The findings from the study conducted in India by Aditya Rai indicate that performance for privately owned power generating entities was pathetic and the chances of insolvency were very high (Rai, 2020). In Romania, a study conducted revealed that financial status of most of the companies in the energy sector were poor (Paun, 2017). An analysis of developments in the energy sector in Zambia shows that Zesco had encountered some difficulties due to hydro resources crisis and adverse movements of the currency (Bayliss & Pollen, 2020). However, it is not clear whether foreign exchange rates have any effect on the financial performance of power utility companies in Zambia due to devaluation of kwacha as no in-depth study has been conducted so far.

2.6. Zambia Energy Sector Overview

By 2022, Zambia had a 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 (NWECC), 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 electricity supply company 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).

2.7. Overview of Copperbelt Energy Corporation Plc

The Copperbelt Energy Corporation was formed in 1953 as the Rhodesia-Congo Border Power Corporation and its mandate was to interconnect thermal power stations which were running separately and to improve supply of power for mining operations across the mining belt of Zambia and Democratic Republic of Congo. It was later named as Copperbelt Power Company (CPC) in 1964 and became part of the mining conglomerate, the Zambia Consolidated Copper Mines (ZCCM-IH). The company name was later changed again to Copperbelt Energy Corporation Plc (CEC) in November 1997.

Copperbelt Energy Corporation Plc runs and maintains a vigorous network of transmission, power generating assets and power distribution which accounts for a reasonable portion of national electricity consumption. The company provides a path for the transmission of power within southern Africa through its interconnector with the Democratic Republic of Congo. Copperbelt Energy Corporation Plc (CEC) is a company listed on the Lusaka Securities Exchange and it is a member of Southern African Power Pool (SAPP). Further, it is one of the major international traders of power in the region (CEC, 2021).

Copperbelt Energy Corporation Plc's mission is to ensure that company customers' unique needs in the changing environment are met by providing high quality services and supplying dependable energy. This firm intends to accomplish this by efficient and proactive maintenance of its robust infrastructure and diversification of the sources of power by using its professional team. The company further wishes to increase value for its shareholders by being responsible and engaging in transparent corporate governance, innovation and investing prudently (CEC, 2021).

The company's vision is focused on being the leading Zambian investor in the development and operation of energy infrastructure in the continent of Africa by ensuring that solutions are innovatively provided and that through its committed professional team, a strategic partnership is built. CEC Plc is a company which upholds high values of supporting each other, being open to

ideas that are new, upholding honest in all its dealings, developing a “can do” attitude as well as building good team relationship (CEC, 2020).

2.8. Review of Similar Studies

In 2016 a study was done on the risk of foreign exchange and financial performance of which it was revealed that firms were able to increase their profitability during the period when currency was overvalued and were exposed to losses when local currency was going through devaluation. This study was conducted on the manufacturing and service companies in Turkey. (Parlak & Ilhan, 2016). Another study conducted in 2013 on the foreign exchange rates effect on financial performance of firms listed at the Nairobi Securities Exchange showed that financial performance of firms is affected by foreign exchange rate movements (Mbithi, 2013). It was also observed that depreciation of Zambian kwacha had a negative effect on the economy as most of the business responded badly to kwacha’s depreciation (Marvin & Mukonda, 2017). These studies referred to above were not conducted in the energy sector but in other sectors which creates a gap because no similar study was conducted in the energy sector in Zambia.

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. It was stated in the article done by Arikewuyo and Akingunola 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 rate of the country’s currency, company’s 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 analyze company’s capital structure (Utomo, et al., 2020). In a journal article produced by Santosa, it was clear that exchange rate has an impact on the financial performance factors. Capital market experts such as asset managers and investors observe movements in the exchange rate when making investment decision (Santosa, 2019).

In other studies conducted by other researchers it was 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. 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 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 in the Business Theory and Practice journal show that exchange rate has an effect on both return on equity and return on asset (HUSSAIN, et al., 2021). According to Rebecca M. Nelson, 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 in their journal article 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). CEC Plc has been operating on profit over the years. Although CEC Plc, like any other company was affected by the outbreak of covid19, the company continued to record profits on its income statements and positive cash and cash equivalent on its cash flow statements over the past five years.

CEC Plc prepares its financial statements in the foreign currency using the United States dollar. Though various financial metrics have been used to assess the financial performance of the firm, there is no study of the effect which foreign exchange rates may have on the financial performance of the company due to devaluation of the Zambian kwacha. In its audited financial statements, CEC Plc recorded some foreign exchange gains and, in some cases, losses were recorded.

2.9. Chapter Summary

Several literatures have been reviewed under this chapter concerning the topic of the study. Such literatures included an overview of financial performance, overview of foreign exchange rates, evolution of foreign exchange rates, company financial performance, Zambia energy sector review and overview of Copperbelt Energy Corporation Plc as well as a review of similar studies. It is evident that much has not been done to assess whether foreign exchange rates have an effect on the financial performance of power utility companies in Zambia.

CHAPTER 3

THEORETICAL AND CONCEPTUAL FRAMEWORKS

3.1. Introduction

According to Myanga, the theoretical and conceptual frameworks describe firm grounds for the study with the aim of making research findings meaningful and acceptable because these frameworks give life to a study (Myanga, 2019). Now that chapter two covered the literature review conducted, this chapter will look at the theoretical and conceptual frameworks relating to this study. Different theories have been developed in trying to explain what determines the exchange rates. Theories such as the Mint Parity Theory, Rational Expectation Theory, Purchasing Power Parity Theory, the Balance of Payment Theory and the Flow Oriented Model have been reviewed under this chapter.

3.2. Theoretical Framework

Generally, theories exist which support that the relationship exists between the company's value and the 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. A representation currency is a currency used by a parent company when preparing its financial statements with the aim of using one currency for easy understanding.

3.2.The Mint Parity Theory

The Mint Parity Theory was prevalent during the 19th Century and early 20th century. 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. The whole Mint Parity Theory was based on the Gold Standard System. 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. This theory has its own criticisms because the gold standard system on which mint parity theory was based does not exist anymore, it was based on the free selling and free buying of gold and its movements between countries while governments do not allow that anymore. According to Bindu, its other failure is the fact that it failed to explain how exchange rates are determined considering that countries now are on paper currencies which are inconvertible (Bindu, 2021).

3.2.2. The Rational Expectations Theory

The theory of rational expectations is a widely used concept and modeling 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. In his study of the effect of exchange rate fluctuations on financial performance of forex bureaus in Nairobi, 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).

3.2.3 Purchasing Power Parity (PPP)

Before we look at what Purchasing Power Parity is, it is important to first consider what Purchasing Power is. 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. For instance, if a citizen was able to buy a 25kg bag of breakfast mealie meal at ZMW150.00, but now that ZMW150.00 cannot afford to buy a 25kg bag of breakfast mealie meal, it means that the purchasing power has decreased. 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. This implies that the purchasing power should be the same for products which are identical. PPP refers to the situation where your income has the same purchasing power in all the countries. Purchasing power parity helps to determine the value of the currency although the value of the currency may not be the same with the existing market value. 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). For example, if the cost of pizza in Zambia is ZMW150.00 whilst the same pizza costs BWP100.00 in Botswana, then according to the law of one price which is also referred to as the absolute purchasing power parity, the purchasing power of the two currencies should be the same. Hence the exchange rate between the two currencies should be just the matter of finding the ratio of the two prices.

Exchange rate therefore can be determined as follows:

Exchange rate: $ZMW150.00 / BWP100.00 = ZMW1.50$ is equal to $BWP1.00$. The exchange rate in this case is 1 pula is equivalent to 1.50 Zambian kwacha.

Nevertheless, it must be noted that the absolute purchasing power parity does not hold because of various reasons. This is because the absolute purchasing power parity is based on the assumptions which are not realistic. Some of the reasons why absolute purchasing power parity does not hold are:

- Absolute PPP ignores transport costs. Transport costs vary in different countries. Further, transportation costs are influenced by geographical locations. Some places are very far from the production or manufacturing sites and the state of the roads or the mode of transport used may significantly influence the overall cost of transporting goods.
- Absolute PPP ignores taxes. Tax rates may differ from country to country. Some countries have higher tax rates whilst some have lower tax rates. In some countries tax incentives may be given which may not be so in other countries.
- PPP ignores the fact that some goods are not tradeable. There are certain goods which are not allowed to be exported or imported. A good example in Zambia is that of Mukula tree which its exportation was banned by the Zambian government.
- There are also trade restrictions which absolute PPP ignores.

However, Gilleid indicates in his study that although the purchasing power parity theory has unrealistic assumptions, it could still be of importance as it may relate to what the causes may be that could have an effect on the exchange rate between two countries (Gulleid, 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. If, for instance, $ZMW1.00$ is equal to $R1.20$ and inflation rate in Zambia is at 0 percent whilst in South Africa inflation rate is at 10 percent. The new exchange rate can be estimated to be at $(R1.20 * 1.10) = R1.32 / ZMW1.00$. This means that the South African rand has depreciated against the Zambian kwacha. On the other hand, it would be said that the Zambian kwacha has appreciated against the South African rand. 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.

In general, PPP is considered to be more accurate as compared to the market exchange rates because market exchange rates are usually influenced by other factors such as government interventions, different rates of interests, speculation trading and hedging. It must, however, be noted that PPP is difficult to measure because of the differences in purchasing habits of the citizens of different countries.

3.2.4. The Balance of Payment Theory

Another theory which talks about the determination of foreign exchange rate is called 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 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).

3.2.5. 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.

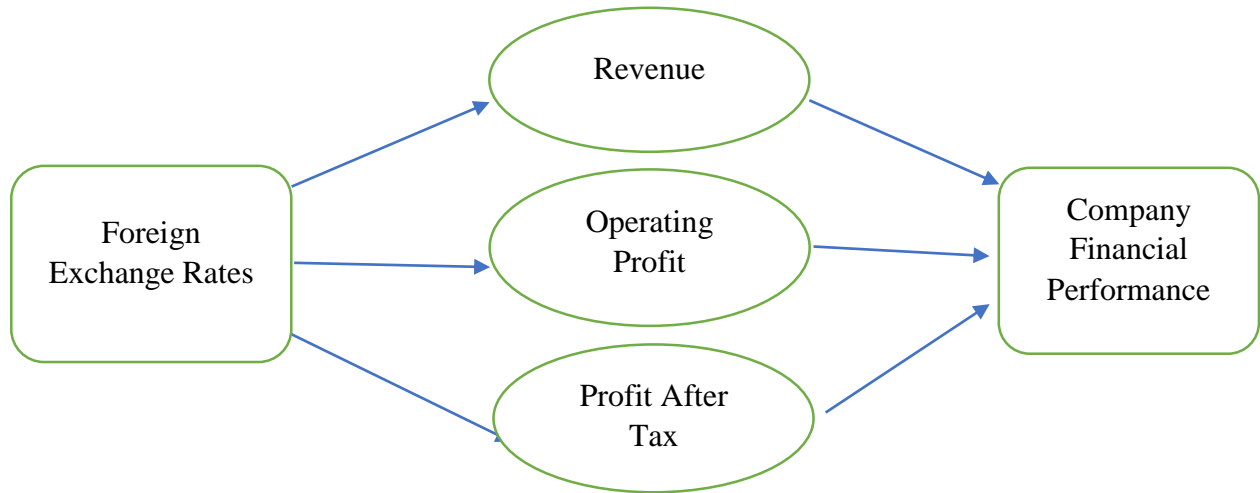
3.2.6. Flow Oriented Model

The Oriented Model is one of the old theories which was developed by Dornbusch and Fisher in 1980 which states that changes in exchange rates affect the company's competitiveness, which in turn affect the revenue generated by the company or cost of funds and the subsequent impact on the stock price for the company. What this model claims is that the international competitiveness of the company as well as the balance of trade position can be altered by the changes in the exchange rates. It further claims that the changes in the exchange rates may affect the output in the country and can also affect real income. The implication of the flow-oriented model theory is that if there is an appreciation caused by the changes in the exchange rates, exporters are likely to experience negative effects. Similarly, as stated by Farah M. Musa, an appreciation of the currency is expected to lead to goods and services being dearer on the international market (Musa, 2013). In this study the researcher adopted this theory to assess the effect that foreign exchange rate may have on the financial performance of power utility companies.

Out of all the theories discussed above, the researcher adopted the 6th theory which is the Flow Oriented Model theory because it looks at the effect that changes in the foreign exchange rates has on the businesses. This model has been employed by other researchers to assess the effect that changes in the foreign exchange rates have on other sectors of businesses.

3.3. Conceptual Framework

The conceptual framework in figure 3.1 shows the link between the independent variables and the dependent variables. It shows that foreign exchange rates have an impact on the firm's financial performance and that the financial performance of the company can be assessed using key financial performance indicators such as revenue, operating profit and profit after tax.



Independent Variable

Dependent Variable

Figure 3.1: Conceptual Framework

The study seeks to assess the effect which foreign exchange rates have on the financial performance of Copperbelt Energy Corporation Plc, a power utility company in Zambia. In this study, foreign exchange rates have been included as an independent variable whilst financial performance indicators have been included as dependent variables. The analysis of financial performance shall be done using the financial performance indicators which are Revenue, Operating Profit and Profit After Tax. The above conceptual framework shows that foreign exchange rates may affect financial key performance indicators which in turn may affect the financial performance of the company.

3.4. Chapter Summary

This chapter has talked about the reasons why theoretical and conceptual frameworks are significant in research. Inclusion of the theoretical and conceptual frameworks in research is essential as they enhance the quality of the study. The two frameworks play distinctive roles in the process of the research. Therefore, this chapter helped the researcher to understand theories which surround the determination of foreign exchange rates and to establish the dependent and independent variables for the study.

CHAPTER 4

RESEARCH METHODOLOGY

4.1. Introduction

This chapter describes the methods which the researcher used to carry out the research in order to assess the effect of foreign exchange rates on the financial performance of power utility companies in Zambia. Presented below are research design, data collection procedures, data analysis procedure and the model specification. Myanga defines research methodology as a means or ways for carry out a research work (Myanga, 2019). Research methodology consists of actions or activities which the researcher follows in order to reach a logical conclusion. The sampling techniques, characteristics of the study and statistical tools used to carry out the study are dealt with under this chapter.

4.2. Research Design

A research design provides a necessary framework for research. 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, that is independent variables and dependent variables (Myanga, 2019). This is an empirical study as the researcher sought to gain knowledge about the study by using quantitative data. The study was designed to attempt answering what effect foreign exchange rates have on the financial performance of power utility companies in Zambia. This research was a quantitative research as numerical data was used to carry out the study.

4.3. Sampling Technique

It being a case study, the researcher used Copperbelt Energy Corporation Plc to conduct the research because it 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 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). A period of 5 years, which runs from 2017 to 2021, was selected for this study. This was because the data was considered to be more recent and would be more useful as financial data becomes less useful over long period of time due to changes in the accounting standards. The Accounting bodies revise accounting standard through the International

Accounting Standards Board to ensure that accounting profession remains relevant and is up to date with the changes. Considering the fact that the objective of the financial reporting is to provide financial information about a reporting entity that is useful to existing and potential investors, it was necessary for the researcher to use financial data which is not too old.

4.4. Data Collection

The researcher used the latest annual reports for the company and extracted audited financial statements as the source of data for the study. Financial statements for the period of 5 years starting from the year 2017 to 2021 were obtained for the study. This information will be accessed from the company's official website since the company publishes its financial reports annually on their portal. All annual reports from 2017 to 2021 will be used to extract data which will be used in this study. The choice of the period of study of 5 years is based on the fact that latest financial data is more useful and is not too outdated since the researcher is dealing with historical data.

The major currencies which the researcher used in this study were the Zambian kwacha (ZMW) and the United States dollar (USD). This is because United States dollar is considered as the global currency (Eichengreen, et al., 2018). The exchange rates used in this research are the closing mid rates obtained from the Bank of Zambia (BOZ). The mid-rate in foreign exchange is the midway rate between the bid and asking price of the currency. For each year, a closing mid-rate for the month of December was used as our exchange rate.

4.5. Data Analysis

Data collected was properly sorted and classified. Data was further tabulated to make it easy to analyze. The secondary data which was collected was analyzed 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 to the readers to comprehend. Independent variables were accessed from Bank of Zambia while dependent variables were obtained from the company's published annual reports.

4.6. Model Specification

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

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

$$Y = \beta_0 + \beta_1 X + \varepsilon$$

Where:

Y = dependent variable

β_0 = is the intercept (constant)

β_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

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. In other words, it can be looked at as the money a company makes after taking into account the cost of doing business. It is usually stated as a percentage of sales and sometimes it is called gross margin ratio. Cost of goods sold is sometimes abbreviated as (COGS). Note that net sales and net revenue mean the same thing. The formula for computing gross profit margin is as follows:

$$\text{Gross Profit Margin} = (\text{Net Sales} - \text{Cost of Goods Sold} / \text{Revenue}) * 100$$

This metric usually expresses gross profit as a percentage of net sales. The significant of this metric is that it shows the profit made by the company before deducting administrative, general and selling costs. Gross profit margin helps companies in making decision in that the company can identify where to making improvements by cutting some costs whilst improving sales.

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 from total revenue made by the company. Just like gross profit margin is expressed as a percentage of revenue, operating profit margin is also 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 shown below.

$$\text{Operating Profit Margin} = (\text{Operating Profit} / \text{Revenue}) * 100$$

The significance of this metric is that it measures how much profit a company makes from every sale after deducting all variable production costs such as cost of materials and wages but before deducting interest and tax. It also shows how a company efficiently generates profit through its main operations. The operating margin is vital because it measures overall profitability of a company from its operations. It is the ratio of operating profits to net sales or revenues for an entity or a business segment. The higher the margin the better.

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. It is a significant measure of how much each unit of currency in revenue collected is translated into profit. It helps investors to assess whether management is making enough profits from its sales and whether overhead costs and operating costs are under control. It is one of the vital financial performance indicators in assessing a company's financial health. Net Profit margin is computed using the formula below. Just like the other two ratios explained above, net profit margin is expressed as a percentage of revenue. The high the profit margin the better.

$$\text{Net Profit Margin} = (\text{Net Profit} / \text{Revenue}) * 100$$

The ratios computed were based on the audited financial data which was published by the company on its website for the period of 5 years starting from 2017 to 2021. Audited financial data published in the company's annual reports was summarized in the 2021 annual report (Report, 2021).

4.7. Ethical considerations

This study support issues related to the ethical conduct of research, such as informed consent and confidentiality. Creswell mentioned that ethics are the norms and standards of conduct that guide our moral decisions about our behavior and our relationships with others (Creswell, 2012). The researcher obtained ethical clearance before proceeding with the study. Further, all information collected will only be used for the purposes of this study.

4.8. Chapter Summery

This chapter has covered the research methodology for the study and has captured other elements of the research methodology such as the research design, collection of data, analysis of data presentation of data and model specification. Description of variables was also covered under this chapter. Tools used for data analysis and data presentation have been well outlined.

CHAPTER 5

DATA PRESENTATION AND ANALYSIS

5.1. Introduction

Now that the previous chapter covered the research methodology, this chapter applied the methods outlined in chapter four to conduct the research. Financial data was extracted from the audited financial statements published in the company's annual reports for the period of five years. The data which was collected was used to carry out computations using Microsoft office tools and GraphPad software and further analyzed and presented the results in using graphs and tables. The Bank of Zambia (BOZ) exchange rates between the Zambian kwacha and the United States dollar were also used to carry out the study as an independent variable. The results from the data were analyzed and discussed in details.

5.2. Data Sources

Table 5.1: 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 5.1: Foreign Exchange Rates Graph

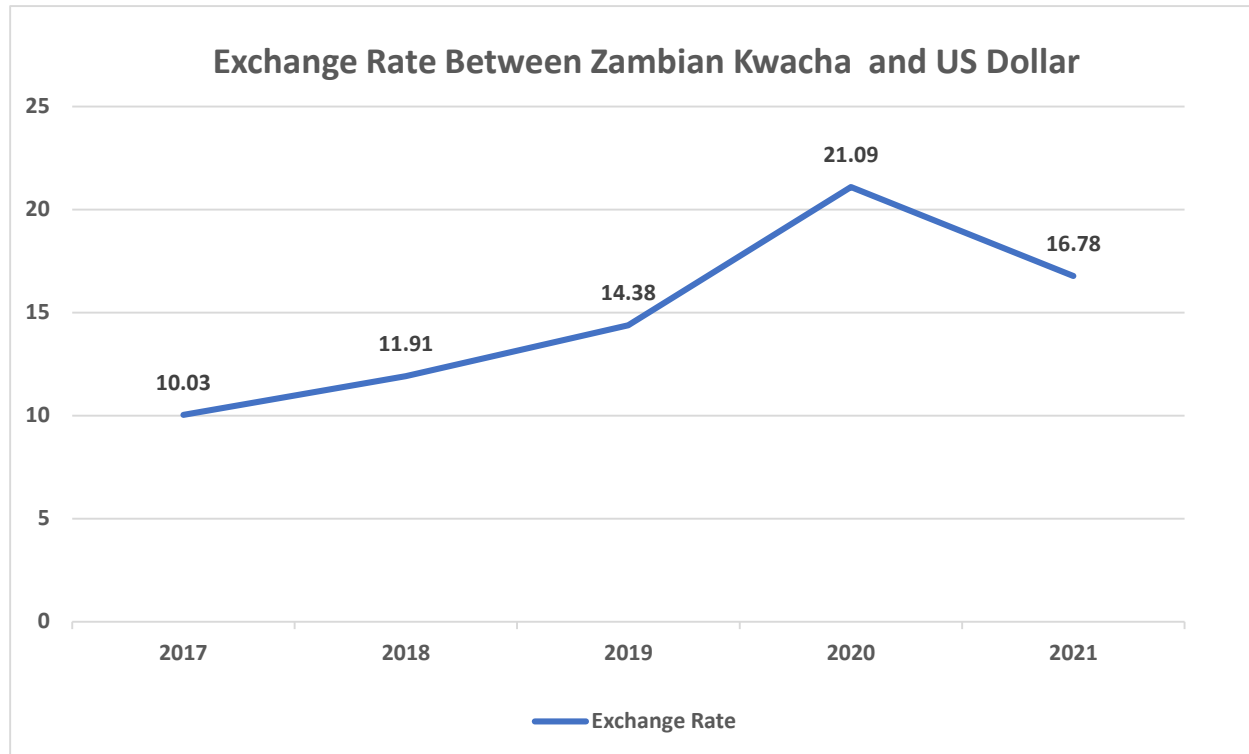


Table 5.1 shows the closing exchange rates for each year between the Zambian kwacha and the United States dollar for the period of five years from 2017 to 2021. The exchange rates which were obtained from the Bank of Zambia were plotted on graph. The financial data from the company's published annual reports for the years 2017 to 2021 were used for computations and to carry out the analysis of the results. The data obtained from the Bank of Zambia website shows that kwacha depreciated over the five-year period of study. 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. In the period of study, the year 2020 was observed to be the waste year in terms of the performance of the Zambian kwacha as data shows that USD1.00 was equivalent to ZMW21.09 as at the end of the year 2020.

The graphical presentation of the exchange rates between the Zambian kwacha and the United States dollar is presented in figure 5.1 and the trend over the period of five years shows that kwacha continued to lose value against the US dollar under the period of study. After continuously depreciating between 2017 to 2020, the Zambian kwacha started appreciating in 2021 as depicted on the graph.

5.3. Use of Indirect Quotation of The Exchange Rate

The exchange rates presented in the graph above under figure 5.1 are based on the direct quotation of the exchange rate which Zambia uses. As alluded to in chapter two, the common currency exchange rate quotations are direct quotation and indirect quotation. 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 of the exchange rate is 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. Alternatively, it measures how much of the United States dollar could be bought by one unit of the Zambian kwacha. It measures the value of one kwacha in US dollar terms.

Table 5. 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

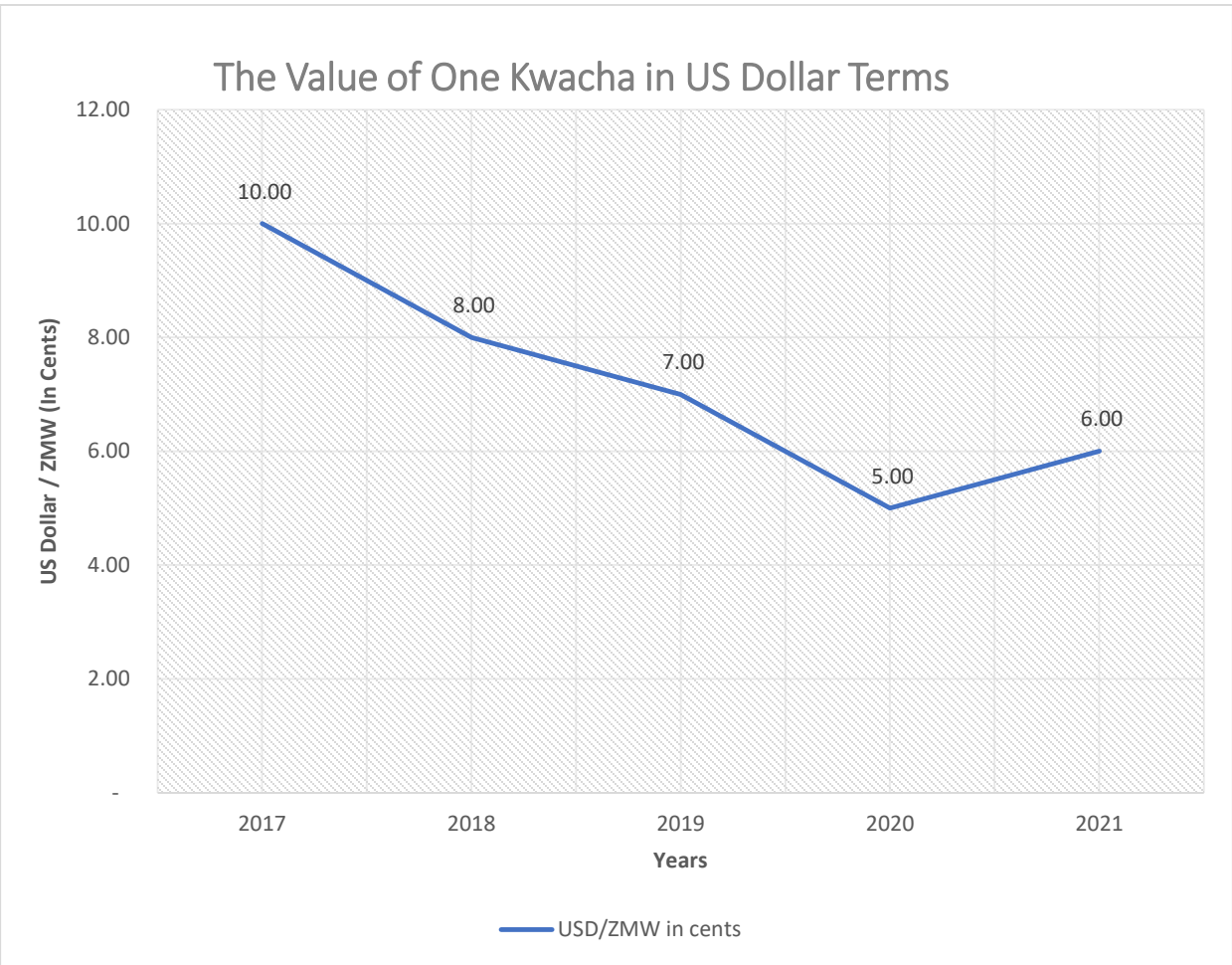


Figure 5.2: Exchange Rate Between US Dollar and Zambian Kwacha

Figure 5.2 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 2019 as only \$0.07 (7 cents) was needed to buy ZMW1.00 and only half of a US dollar was required to buy ZMW1.00 in 2020. 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. The data in table 5.2 shows the value of Zambian

kwacha in US dollar terms. It shows that over a period time dollar equivalent of ZMW1.00 was reducing, signifying that the value of kwacha was reducing.

The fluctuation of the exchange rates between the two currencies resulted into the depreciation of one currency against the other and vice versa. In the case of this study, the instability of the Zambian kwacha against other foreign currencies such as the United States dollar resulted into the depreciation of kwacha. Any appreciation of the United States dollar against the Zambian kwacha implies that the Zambian kwacha has lost value against the US dollar.

5.4. 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 the fact that the country imports more of its products and services than it exports, it has not been spared from exchange rate volatility. It can be seen from the graph above under figure 5.2 that the foreign exchange rates between the United States dollar and the Zambian kwacha had been volatile over the five-year period reviewed. On average, the Zambian kwacha lost value by 20 percent in a period of one year from 2017 to 2018, lost 30 percent in a period of two years from 2017 to 2019, and lost 50 percent of its value in a period of three years from 2017 to 2020. In a period of four years, that is between 2017 and 2021, kwacha lost 40 percent against the US dollar. The value of kwacha showed some improvement in 2021, hence the reduction in the average rate at which the value of kwacha was diminishing. This shows that the exchange rates between the two currencies were highly volatile.

Between 2017 to 2020 the Zambian kwacha continued to lose its value against the US dollar. The visible appreciation of the kwacha only came in 2021. This was explained in the press statement issued by the Bank of Zambia, dated 24th July 2021, that the appreciation of the Zambian kwacha 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.

5.5. Trends Analysis of the Copperbelt Energy Corporation Plc's Financial Performance

As was stated by H. A. Dagistanli, trend analysis is considered to be one of the most used tools in financial performance analysis as past activities of the business can be seen and future performance observed through analysis of financial statements (Dagistanli, 2023). Trend analysis helps to observe movements in data which is being analysed as it is one of the effective tools used in analyzing monetary statement for decision making purposes. In carrying out trend analysis, financial statements of an entity are compared against each other over period of time in order to establish a pattern.

There are several ways of performing financial performance analysis. One can carry out trend analysis, ratio analysis or a vertical analysis. In this study, the researcher uses trend analysis to assess the financial performance of the company as well as ratio analysis. Trend analysis is also referred to as horizontal analysis and it involves analyzing financial statements of a company over a period of time to determine trend or movement in the various items of financial statements.

Companies have several interested parties who would want to know how the company is performing. By observing movements in the financial data over a period of time, interested parties can be well informed on the financial performance of the company. Such information would help the company measure its performance and see if it is on the right course or not. Where trends indicate poor performance of the firm, necessary measures can be put in place to arrest the situation before the firm collapses.

The main aim of performing trend analysis is to evaluate the overall financial performance of the entity as well as assessing whether management is performing to the expectation. Additionally, trend analysis helps management and investors to make strategic decisions. By analysis financial data over the years to observe trends helps decision makers to make informed decisions regarding finances of the business. By using trend analysis, management can even predict the future by observing the movements in the previous financial items.

Table 5. 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 5.4: 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 5.5: 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 5. 6: 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 5.6 summarizes data from table 5.2 to table 5.5. This summarized data is further presented in the graph to observe the movements in relation to the depreciation of the kwacha against the US dollar. The purpose is to determine whether adverse movement in kwacha affects the company’s gross profit margin, operating profit margin and net profit margin.

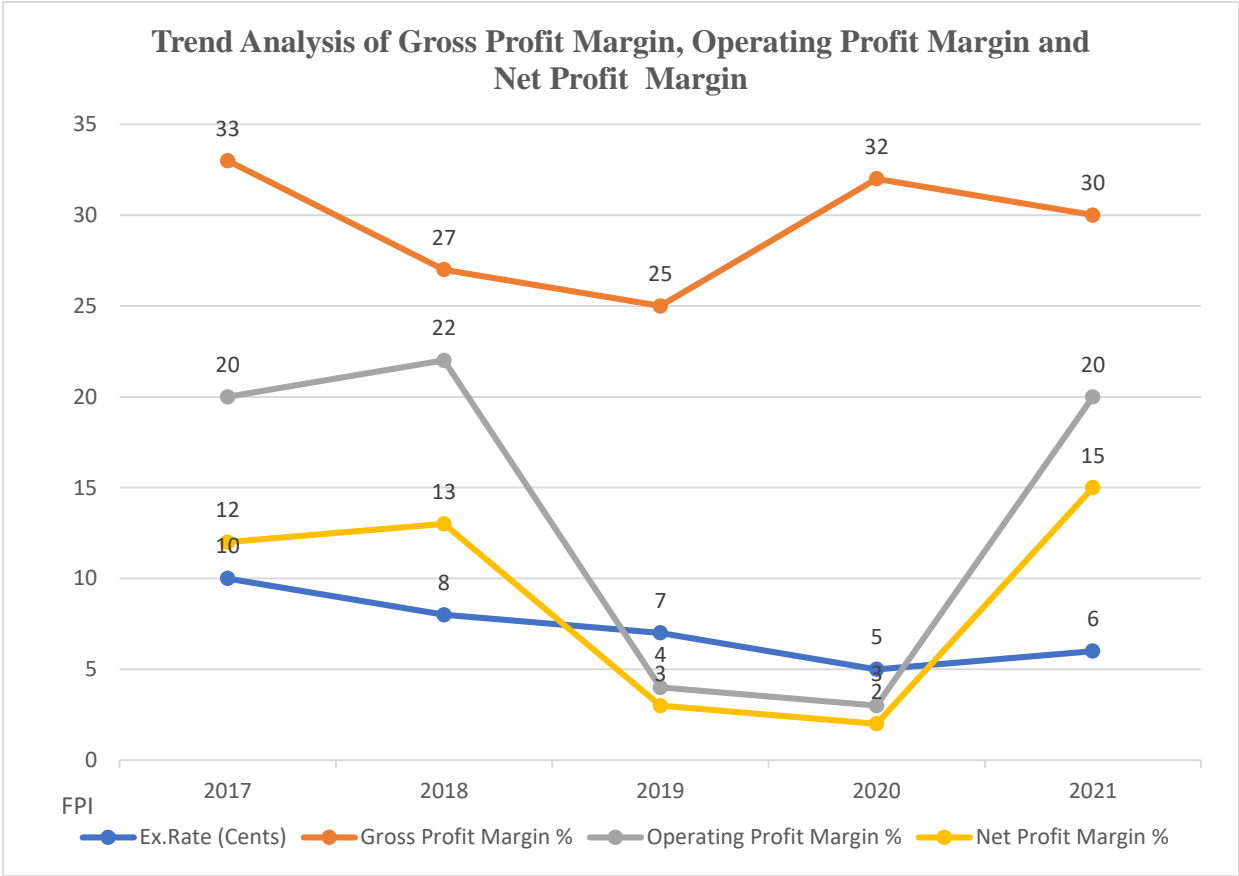


Figure 5.3: Trend Analyses of Profit Margins

From figure 5.3 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 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 against the United State dollar in 2021, the operating profit margin and net profit

margin analyzed above 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. Similarly, the trends show that the moment kwacha started appreciating in 2021, operating profit and net profit margins started improving as well. The gross profit margin portrayed a different movement between 2019 to 2021 in that it was moving in the opposite direction.

Another key observation from figure 5.3 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.

5.6. The Effect of Foreign Exchange Rates on CEC Plc's Financial Performance as Measured by Revenue

The first research question sought to provide an answer as to whether foreign exchange rates have any effect on the financial performance of the Copperbelt Energy Corporation Plc as measured by revenue. To answer this question, a close analysis of one of the financial performance indicators, revenue, was critically performed for the period of five years. This performance indicator was also plotted on the chart to enable the researcher observe the trends. In table 5.7 below the revenue recorded by the company from 2017 to 2021 have been compared and percentage changes have been computed by using 2017 revenue as the base amount.

Table 5.7: Percentage Changes in Revenue

Year	Revenue \$'000	Percentage change in Revenue
2017	389,532	{(389,532-389,532)/389,532} *100= 0.0%
2018	421,203	{(421,203-389,532)/389,532} *100= 8%
2019	408,272	{(408,272-389,532)/389,532} *100= 5%
2020	370,931	{(370,931-389,532)/389,532} *100= -5%
2021	342,520	{(342,520-389,532)/389,532} *100= -12%

Source: CEC's 2021 Annual Report

Table 5.8: Percentage Changes in Exchange Rates

Year	Exchange Rate USD/ ZMW	Percentage changes in exchange rate
2017	10 cents	{(10-10)/10} *100= 0.0%
2018	8 cents	{(8-10)/10} *100= -20%
2019	7 cents	{(7-10)/10} *100= -30%
2020	5 cents	{(5-10)/10} *100= -50%
2021	6 cents	{(6-10)/10} *100= -40%

As observed from table 5.7, there was a minor increase in the revenue from 2017 to 2018. Thereafter, revenue started declining from US \$421 million in 2018 to US \$342 million in 2021. This is the period when Zambian kwacha underwent serious devaluation. Although the revenue reported in the financial statements show that there was an increase of 8 percent from 2017 to 2018, the percentage increase declined to 5 percent in 2019. In 2020, revenue dropped by 5 percent as compared to 2017 revenue. The drop in the revenue reported worsened in 2021 as it was twelve percent less than 2017 sales. The increase and decrease in sale are summarized in table 5.7 above.

In order to compute the percentage changes and observe the trends of the company's revenues and exchange rates for the years 2017 through to 2021, trend analysis presents 2017 as the base year and the 2017 amounts were restated to be 100 or considered to be at zero. The amounts for the years 2018 through to 2021 were presented as percentages of the 2017 amounts. In other words,

each year's amounts are divided by the 2017 amounts and the resulting percentage change is reported. By using this method, percentage changes have been computed as indicated in the tables below. These percentage changes are reported as either an increase or decrease of the base year's revenue.

Whilst the comparison of revenues between the base year (2017) and 2019 show that there was a 5 percent increase in revenue, a comparison of 2019 revenue against 2018 revenue indicates a decrease in revenue in the sense that revenue dropped from \$421 million in 2018 to \$408 million in 2019 representing a decrease of 3 percent. Thereafter the revenue for Copperbelt Energy Corporation continued to drop to \$370.9 million in 2020 and \$342.5 million in 2021. Despite an increase in the company's revenue from the base year (2017) to 2018 which was recorded at 8 percent, the increase could not be sustained as subsequent years clearly show the decline in the revenue.

In the same way, table 5.7 shows how a unit of kwacha was losing value against the US dollar. It indicates that the amount of US dollar required to buy one unit of kwacha kept on reducing, signifying that US dollar was appreciating against the Zambian kwacha. Whilst only 10 cents were equivalent to ZMW1.00 in 2017, the amount of US dollar required in 2019 to buy ZMW1.00 reduced. This was a clear indication that the value of Zambian kwacha was diminishing. As observed, in 2017 one kwacha was worth 10 cents but in 2020 one kwacha was only worth 5 cents. The amount of US dollar which one kwacha could buy kept on reducing. It was only in 2021 when kwacha reported some appreciation against the foreign currencies.

The percentage changes in revenue and percentage changes in the value of kwacha against the US dollar have been plotted on the graph in figure 5.4 below.

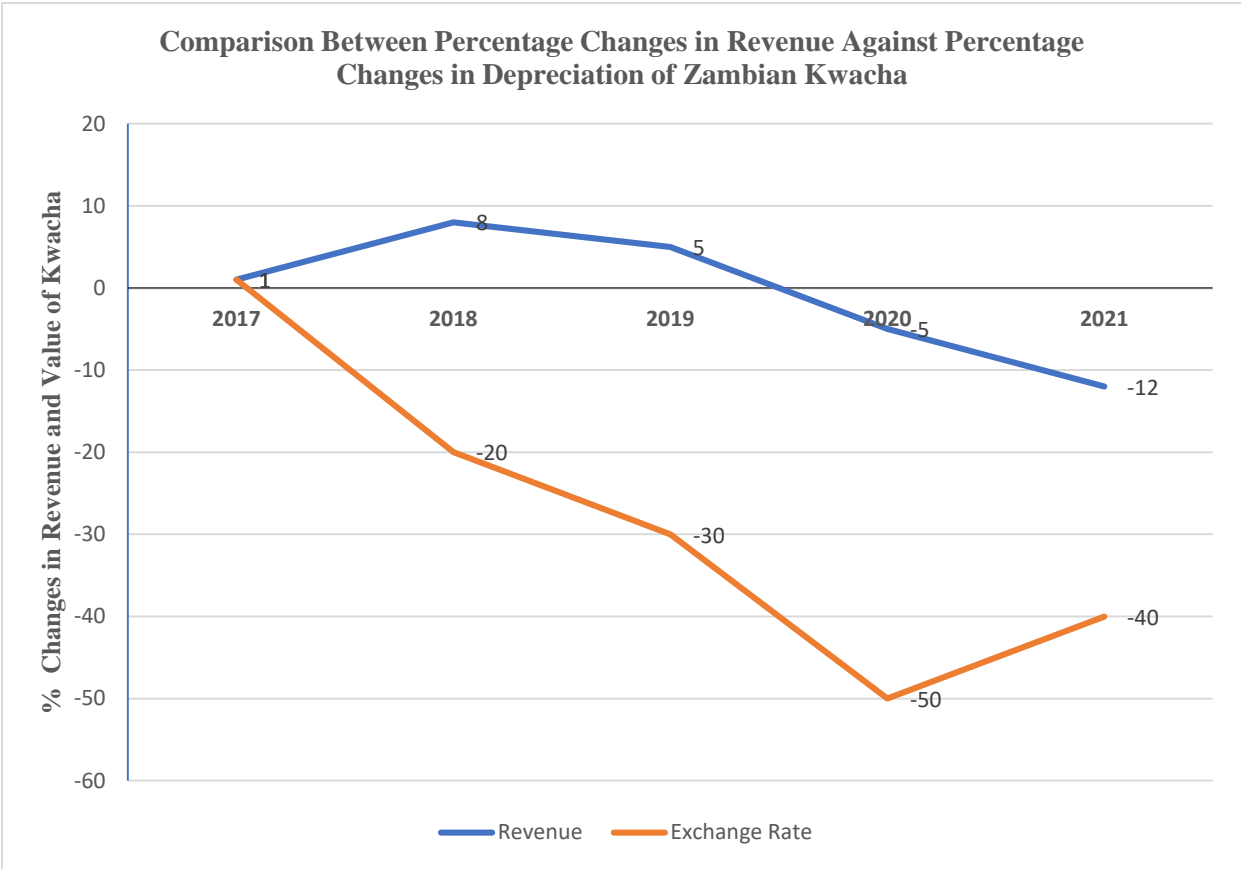


Figure 5.4: Percentage Changes in Revenue Against Percentage Changes in Exchange Rates

A critical analysis of table 5.7 and table 5.8 together with figures 5.4 show that when Zambian kwacha depreciated against the US dollar, the company’s revenue also decreased. The more kwacha was needed to buy a single unit of the US dollar, the less sales the company made. When, on average, kwacha depreciated by 40 percent between 2017 to 2021, the company revenue dropped by twelve percent over the same period. The line chart above shows a clear trend of how revenue of the company was affected by the depreciation of the kwacha.

Revenue is defined as the total amount of income arising in the ordinary course of a company’s activities (BPP, 2020). Sometimes revenue is also called gross sales. It is the summation of all company’s income generated from its primary operations.

Table 5.9: Five Years Company Revenue

Year	2017 \$'000	2018 \$'000	2019 \$'000	2020 \$'000	2021 \$'000
Revenue for each year	389,532	421,203	408,272	370,931	342,520

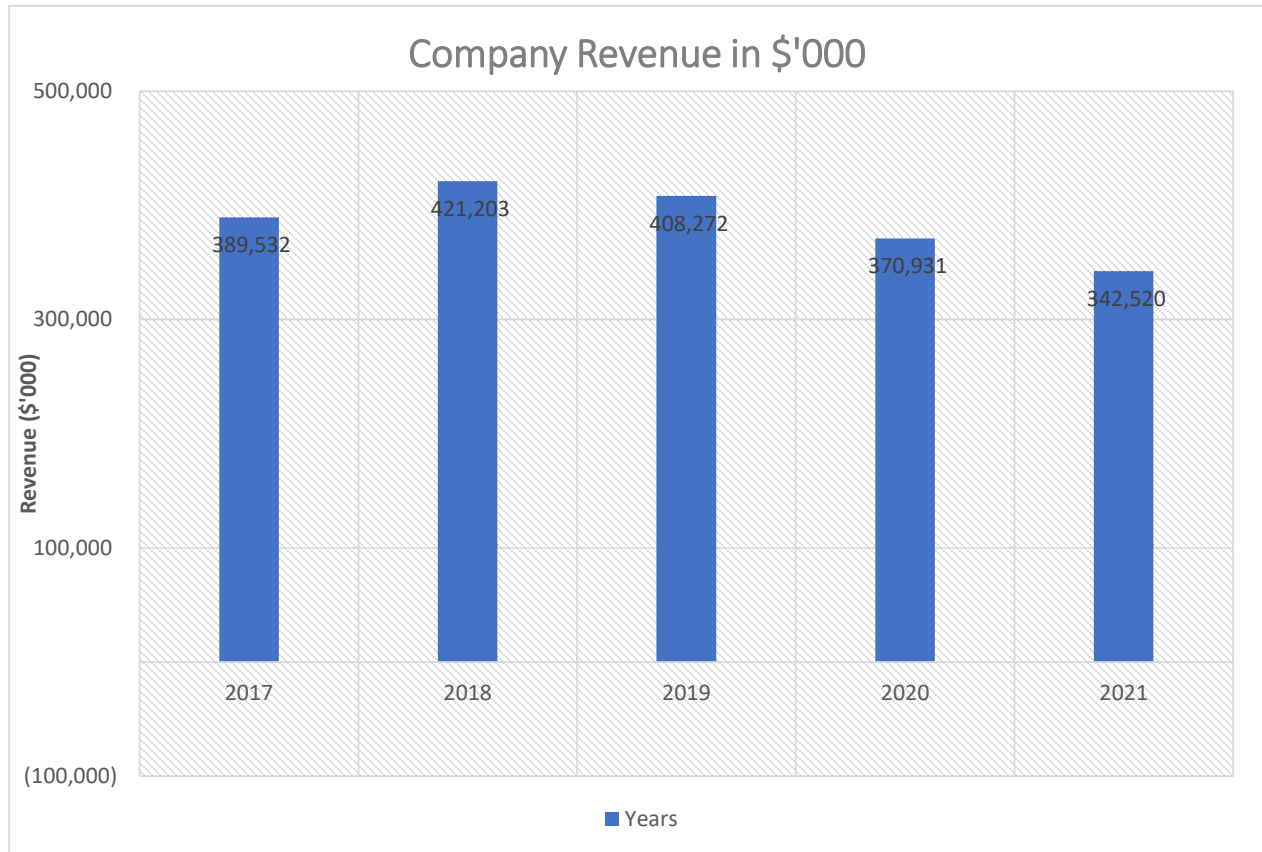


Figure 5.5: Graphical Presentation of Revenue for Five Years Period

5.6.1 Analytical Model

Linear Regression

The regression equation can be used either to establish the relationship between two variables or it can be used to predict future outcome of the events. Since this study aims at establishing the relationship between two variables and the fact that there is a single independent variable, which is the exchange rates, the following equation was used to undertake the effect of foreign exchange rates due to devaluation of the kwacha.

$$Y = \beta_0 + \beta_1 X + \epsilon$$

Where:

Y = dependent variable

β_0 = is the intercept (constant)

β_1 = slope coefficient of independent variable

X = independent variable (Exchange rate)

ϵ = error term

Table 5.10: Correlation and R-Square Based 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	
	<i>Exc. rate USD/ZMW (in Cents)</i>		<i>Revenue (\$'000)</i>
	Exc. rate USD/ZMW (in Cents)	1	
	Revenue (\$'000)	0.497298391	1
	R-Square =0.497298391 ²	0.247305689	

Table 5.10 provides correlation coefficient and r-square of the financial data after it was computed using the excel correlation formula. The independent variable used was the adjusted exchange rates which was quoted in cents and the dependent variable used was company's revenue. The correlation recorded was rounded off to the nearest two decimal points giving 0.50 and the r-square also was rounded off to 0.25.

When correlation coefficient is zero, it implies that there is no linear relationship which exists between the two variables. A zero correlation means that there is neither a positive nor negative relationship as it implies that a change in one variable does not affect the other variable. A positive correlation indicates that there is a perfect linear relationship between two variables where an

increase in one variable leads to an increase of the other variable. A negative correlation coefficient implies that there is a negative linear relationship which is based on the fact that an increase in one variable leads to the decrease in another variable and vice versa. The following key indicates the strength of the relationship based on the various levels of correlations.

Coefficient Interval	Correlation
0.000 to 0.199	Very Weak
0.200 to 0.399	Weak
0.400 to 0.599	Medium
0.600 to 0.799	Strong
0.800 to 1.000	Very Strong

Linear Regression: Exchange Rates and Revenue

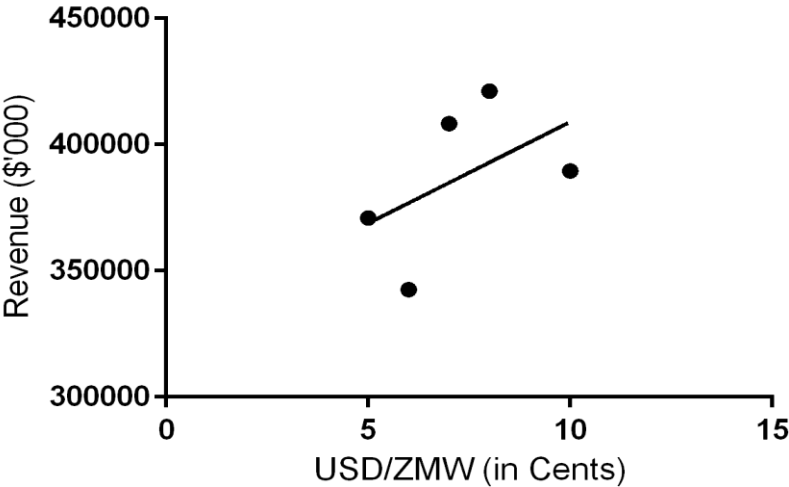


Figure 5.6: Linear Regression for Exchange Rates and Revenue

R-Square = 0.2473

Correlation = 0.4973

Equation: $Y=8036*X+32,636$

The results obtained from the regression model in table 5.10 above and those of linear regression in figure 5.6 show that there was a relationship between the exchange rate of the kwacha and the firm’s financial performance. The positive relationship of about 0.50 shows that there is a medium correlation between devaluation of the kwacha and the firm’s financial performance as measured

by revenue. The meaning of the finding is that 50 percent of the drop in revenue was linked to the devaluation of the kwacha and vice-versa.

5.7. The Effect of Foreign Exchange Rates on CEC Plc’s Financial Performance as Measured by Operating Profit

In section 5.6 of this chapter, the researcher looked at the effect of foreign exchange rates on CEC Plc’s financial performance as measured by revenue. In this section the researcher proceeded to repeat the same assessment by using operating profit as a dependent variable. This helped the researcher to answer the second research question which was to assess the effect of foreign exchange rates on the financial performance of CEC Plc as measured by operating profit.

Table 5.11: Percentage Changes in Operating Profit

Year	Operating Profit (\$’000)	Percentage change in Operating Profit
2017	79,579	$\{(79,579 - 79,579)/79,579\} * 100 = \mathbf{0.00\%}$
2018	92,182	$\{(92,182 - 79,579)/79,579\} * 100 = \mathbf{15.84\%}$
2019	17,372	$\{(17,372 - 79,579)/79,579\} * 100 = \mathbf{-78.17\%}$
2020	9,947	$\{(9,947 - 79,579)/79,579\} * 100 = \mathbf{-87.50\%}$
2021	70,101	$\{(70,101 - 79,579)/79,579\} * 100 = \mathbf{-11.91\%}$

From table 5.11, a simple analysis shows that the company’s operating profit had increased by 15.84 percent from \$79.579 million in 2017 to \$92.182 million in 2018. Thereafter, the company’s operating profit considerably dropped from \$92.182 million in 2018 to \$17.372 million in 2019 and further to \$9.947 million in 2020 before a sharp rise to \$70.101 million in 2021. The decrease in the operating profit in 2019 was about 78 percent as compared to operating profit recorded in 2017. Operating profit recorded in 2020 reduced by 87.50 percent as compared to operating profit recorded in the base year (2017). It was also observed that even though there was a sharp increase in the operating profit recorded in 2021, it was still 11.91 percent less as compare to operating profit recorded in 2017.

The above percentage changes in the operating profit indicate how operating profit react to changes in the exchange rates. Any change in the foreign exchange rates resulted into a major shift in the operating profit.

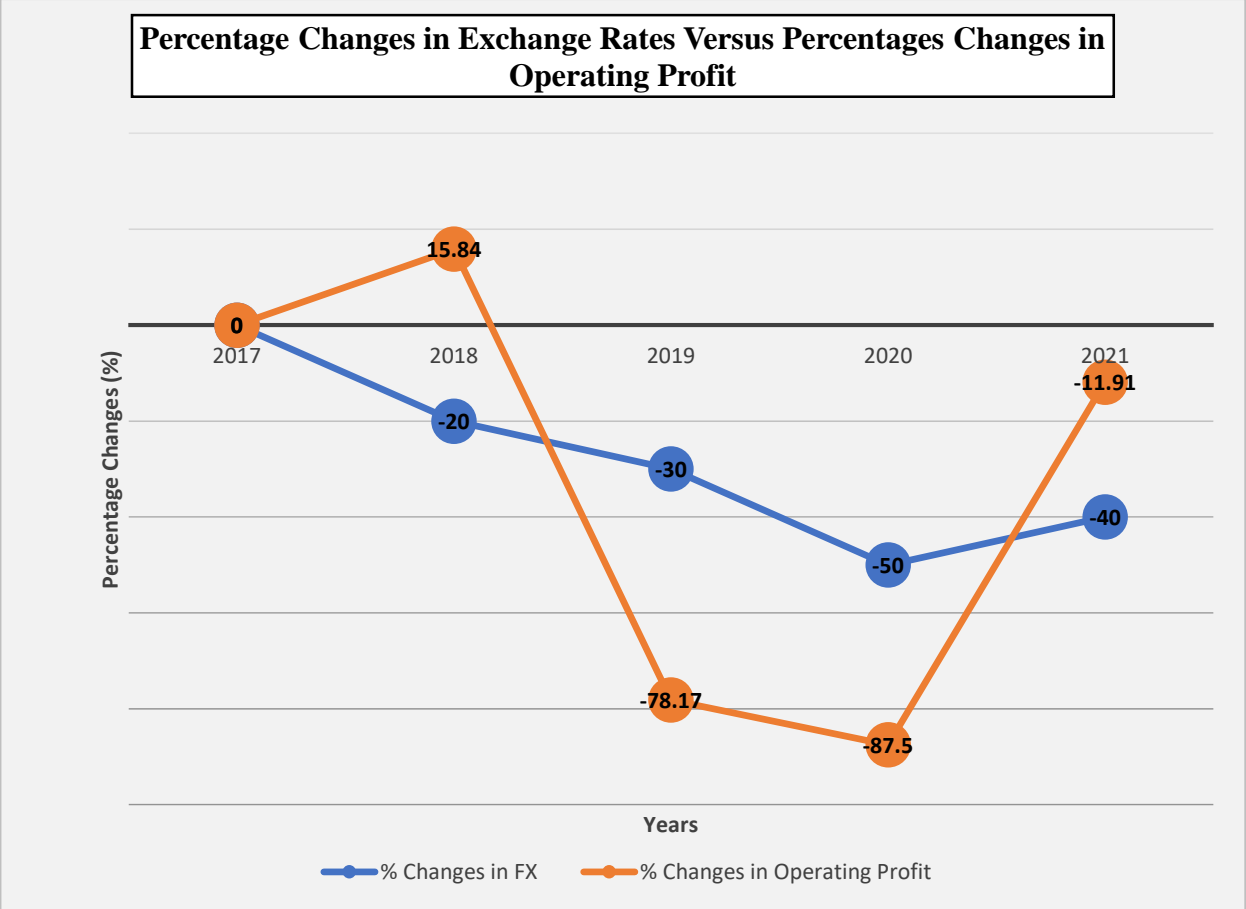


Figure 5.7: Trend Analysis of Percentage Changes in FX and Operating Profit

Having critically carried out the trend analysis in figure 5.7, it was observed that there was a relationship that existed between the two variables. The constant drop in the value of kwacha between 2017 and 2020 could also be seen in the decline in the operating profit recorded by the company. It was further observed that in the year 2021 when kwacha appreciated against the US dollar, operating profit went up also. This implies that the decrease in the value of the firm as measured by the operating profit could be linked to the depreciation and appreciation of the kwacha. During the periods in which kwacha performed well against the US dollar, the operating profit showed positive movements. Similarly, when kwacha depreciated against the US dollar, the company’s financial performance also went down.

In order to ascertain the strength of the relationship between these two variables, the researcher used the linear regression equation. This computation helped the researcher to know whether this positive relationship was a strong one, medium or a weak relationship. The table below provides the details from the computations.

Table 5.12: Correction Coefficient Based 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	
		<i>Exc. rate USD/ZMW (in Cents)</i>	<i>Profit After Tax (\$'000)</i>
	Exc. rate USD/ZMW (in Cents)	1	
	Operating Profit (\$'000)	0.624419778	1
		0.38990006	
	R-Square = 0.624419778 ²		

The above table 5.12 provides correlation coefficient and r-square of the financial data based on the computation using Microsoft excel regression formula. The independent variable used was the adjusted exchange rate which was quoted in cents and the dependent variable used was company's operating profit. The correlation recorded was rounded off to two decimal points giving 0.62 and the r-square was also rounded off to 0.39.

Interpretation of Correlation

Having obtained a positive correlation of 0.62, it implies that a relationship exists between the two variables, i.e., the independent variable which is the exchange rate and the dependent variable which is the operating profit. This positive correlation indicates that there was a perfect linear relationship. The implication of the above finding is that if there is a positive movement in the exchange rates or if the Zambian kwacha appreciates against the United States dollar, then the

operating profit will increase. Similarly, if Zambian kwacha depreciates against the US dollar, the profit after tax reduces. The results can be evidenced by the trends already observed in the previous pages that the appreciation of kwacha resulted into an improvement in the financial performance as measured by the dependent variables and vice versa.

Linear Regression: Exchange Rate and Profit After Tax

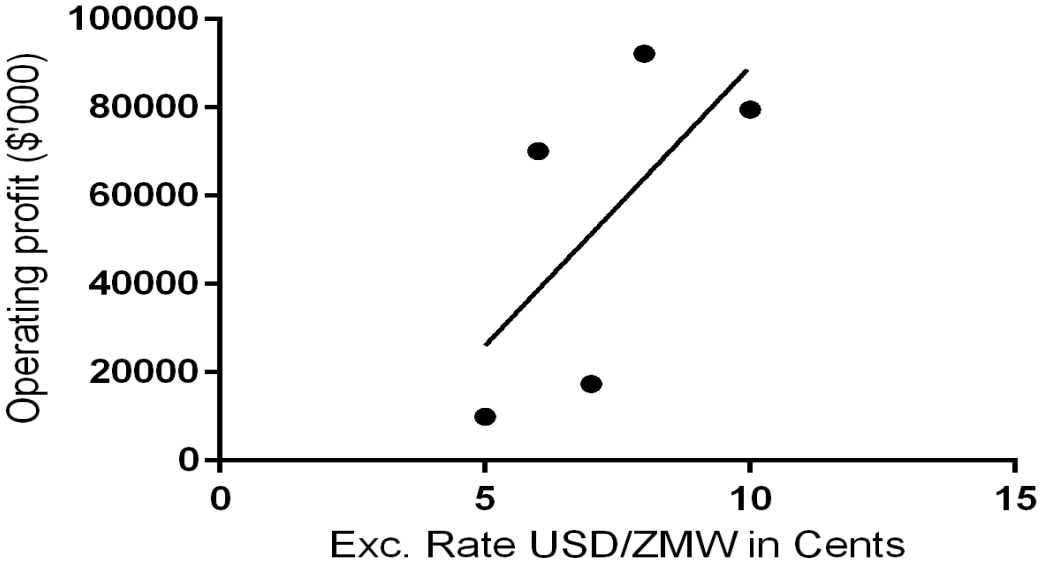


Figure 5.8: Linear Regression Analysis of Exchange Rates and Operating Profit

R-Square = 0.4183

Correlation = 0.6468

Equation: $Y=12641 * X - 37179$

The repeated analysis using the linear regression in figure 5.8 above produces similar results like those produced under table 5.12 above in the sense that they all lead to a positive relationship between the two variables. The correlation coefficient from the linear regression computed using the GraphPad software gives the correlation coefficient of 0.6468 (rounded of to 0.65) and r-square of 0.4183 (rounded off to 0.42). The correlation obtained implies that there is a strong positive correlation between the exchange rates and the operating profit. The classification of the correlation means that the fluctuation in the exchange rates strongly influence the operating profit. When the Zambian kwacha gains value due to exchange rate fluctuation, a positive movement in

the operating profit is realized. Similarly, if there is an adverse movement in the value of the Zambian kwacha due to adverse movements in the exchange rates, the operating profit recorded by the company reduces.

5.8. The Effect of Foreign Exchange Rates on CEC Plc’s Financial Performance as Measured by Profit After Tax (P.A.T.)

Whilst section 5.7 of this chapter dealt with the analysis of the effect of foreign exchange rates on CEC Plc’s financial performance as measured by operating profit, this section dealt with the effect of foreign exchange rates on CEC’s financial performance as measured by profit after tax. This helped the researcher to answer the third research question which was to assess the effect of foreign exchange rates on financial performance of CEC Plc as measured by profit after tax.

Table 5.13: Percentage Changes in Profit After Tax (PAT)

Year	Profit After Tax (\$’000)	Percentage change in Revenue
2017	48,378	$\{(48,378-48,378)/48,378\} *100= \mathbf{0.00\%}$
2018	55,856	$\{(55,856-48,378)/48,378\} *100= \mathbf{15.46\%}$
2019	12,246	$\{(12,246-48,378)/48,378\} *100= \mathbf{-74.69\%}$
2020	5,609	$\{(5,609- 48,378)/48,378\} *100= \mathbf{-88.41\%}$
2021	51,252	$\{(51,252- 48,378)/48,378\} *100= \mathbf{5.94\%}$

From table 5.13, an analysis shows that the company’s profit after tax had increased by 15.46 percent from \$48.378 million in 2017 to \$55.856 million in 2018. Thereafter, the company’s profit after tax drastically dropped from \$55.856 million in 2018 to \$12.246 million in 2019 and further to \$5.609 million in 2020 before a sharp rise to \$51.252 million in 2021. The average decrease in the profit after tax between 2017 to 2019 was 74.69 percent whilst the average decrease between 2017 and 2020 was about 88.41 percent. Upon analyzing the data critically, the researcher observed similarities in the trends in the sense that during the period when kwacha depreciated by 30 percent between 2017 to 2019 and depreciated by 50 percent between 2017 to 2020, the company’s profit after tax dropped by 74.69 percent between 2017 to 2019 and dropped to 88.41 percent between 2017 and 2020.

The above percentage changes in the profit after tax indicate how volatile the PAT is in relation to changes in the exchange rates. Any change in the foreign exchange rates resulted into a major shift in the profit after tax. In the same vein the fluctuation in the amount of tax which the company paid during the period of study was also corresponding to fluctuations in the profit after tax recorded by the company. This is so because the amount of tax is computed based on the amount recorded as ‘profit before tax’ in the statement of profit or loss and comprehensive income. This amount is sometimes referred to as taxable profit. When tax is computed and deducted from profit after tax, the remaining amount is called ‘net profit attributable to equity holders.’ The three, i.e., profit before interest and tax, and profit after tax, are linked in the sense that tax is computed from profit before interest, and profit after tax is what remains after tax has been deducted from the taxable profit.

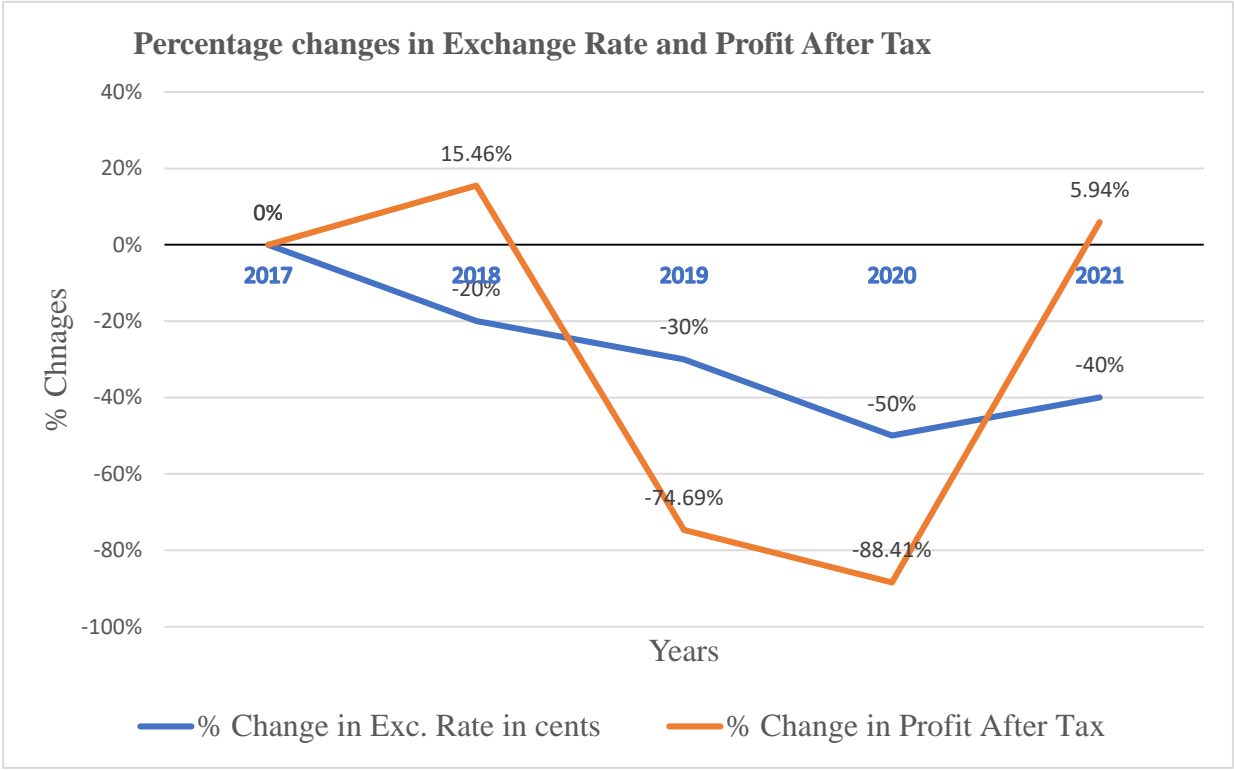


Figure 5.9: Percentage Changes in Profit After Tax and Percentage Changes in Exchange Rates

As can be seen from the graph in figure 5.9, the continuous drop in the value of kwacha against the US dollar resulted in a sharp decline in profit after tax between 2018 to 2019. The drop continued upto 2020. However, a small improvement of the exchange rate between 2020 to 2021 resulted into a sharp increase in profit after tax. This indicates how sensitive profit after tax is as a

financial performance indicator. Depreciation of kwacha against foreign currency resulted into enormous reduction in the profit after tax and on the other hand, an appreciation of kwacha resulted into a sharp increase in the amount of profit after tax.

Figure 5.9 further shows that even though in 2021 kwacha had started appreciating, it was still far less than the value that kwacha had in the base year. This means that kwacha had never appreciated to the value it was at in 2017 during the period under review. From the years 2018 to 2021 the value of kwacha against the foreign currencies had always been below the 2017 value.

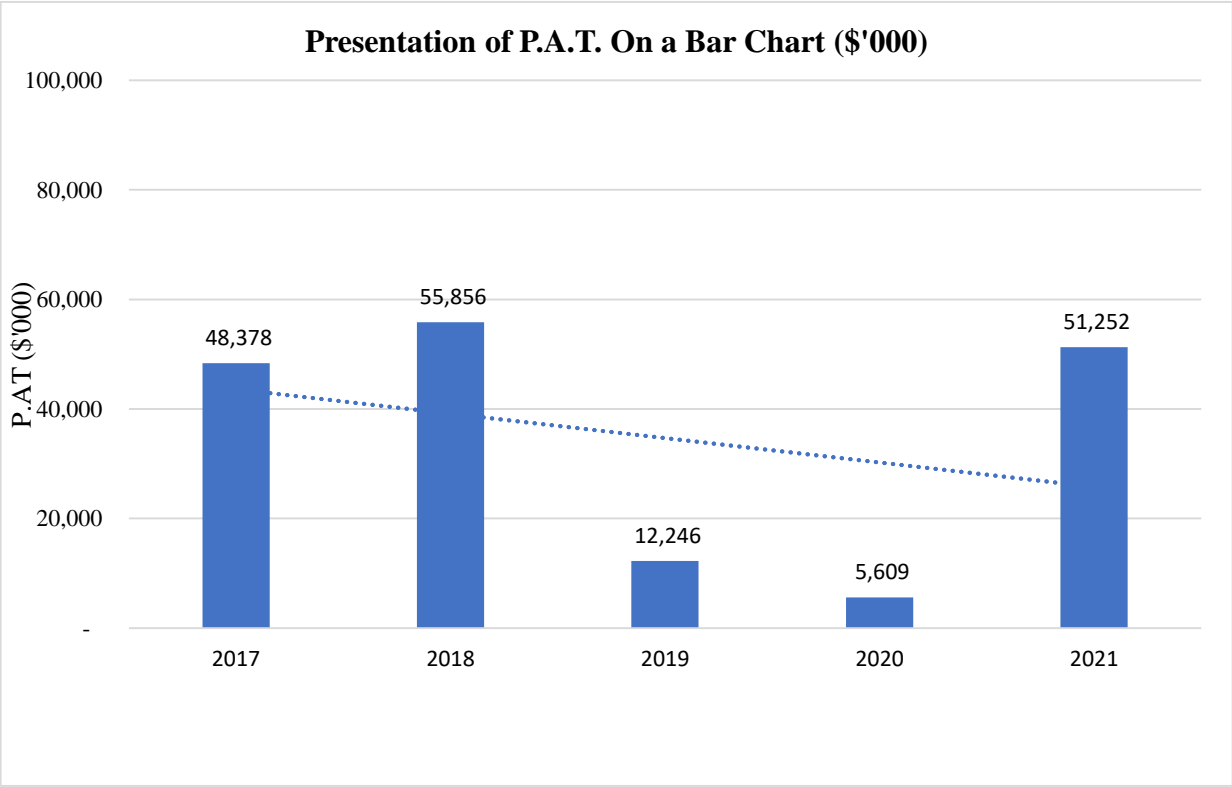


Figure 5.10: Bar Chart - Percentage Changes in PAT versus Percentage Changes in Exchange Rates

The chart shown in figure 5.10 indicates how profit after tax appears on the chart and a trendline drawn to show the average performance over the period of five years. It can be observed that on average, the company’s profit after tax was reducing between 2017 to 2021, the period when the value of the Zambian kwacha depreciated. The years 2019 and 2020 when profit after tax were at \$12.246 million and \$5.609 million respectively, are the same years when on average the value of

kwacha had decreased drastically. In the year 2021 when kwacha appreciated against the US dollar, was also the year in which the company's profit after tax showed improvements.

Table 5.14: Correlation Coefficient Based on Profit After Tax (P.T.A)

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	
		<i>Exc. rate USD/ZMW (in Cents)</i>	<i>Profit After Tax (\$'000)</i>
	Exc. rate USD/ZMW (in Cents)	1	
	Profit After Tax (\$'000)	0.567957477	1
	R-Square = 0.567957477 ²	0.322575696	

In table 5.14, correlation coefficient and r-square of the financial data are provided based on the computation using the excel correlation formula. The independent variable used was the adjusted exchange rate which is quoted in cents and the dependent variable used was company's profit after tax. The correlation coefficient recorded was rounded off to two decimal points giving 0.57 and the r-square was also rounded off to 0.32.

Interpretation of Correlation

Having obtained a positive correlation of 0.57, it implies that a relationship exists between the two variables, i.e., the independent variable which is the exchange rate and the dependent variable which is the profit after tax. This positive correlation indicates that there was a perfect linear relationship. The implication of the above finding is that if there is a positive movement in the exchange rates or if the Zambian kwacha appreciates against the United States dollar, then the profit after tax increases. Similarly, if Zambian kwacha loses value against the US dollar, the profit after tax reduces. The results can be evidenced by the trends already observed in the previous pages that the appreciation of kwacha, as an independent variable, results into an improvement in the financial

performance as measured by the dependent variables. Contrarywise, the depreciation of the kwacha leads to the reduction in the firm’s value as measured by profit after tax.

Linear Regression: Exchange Rate and Profit After Tax

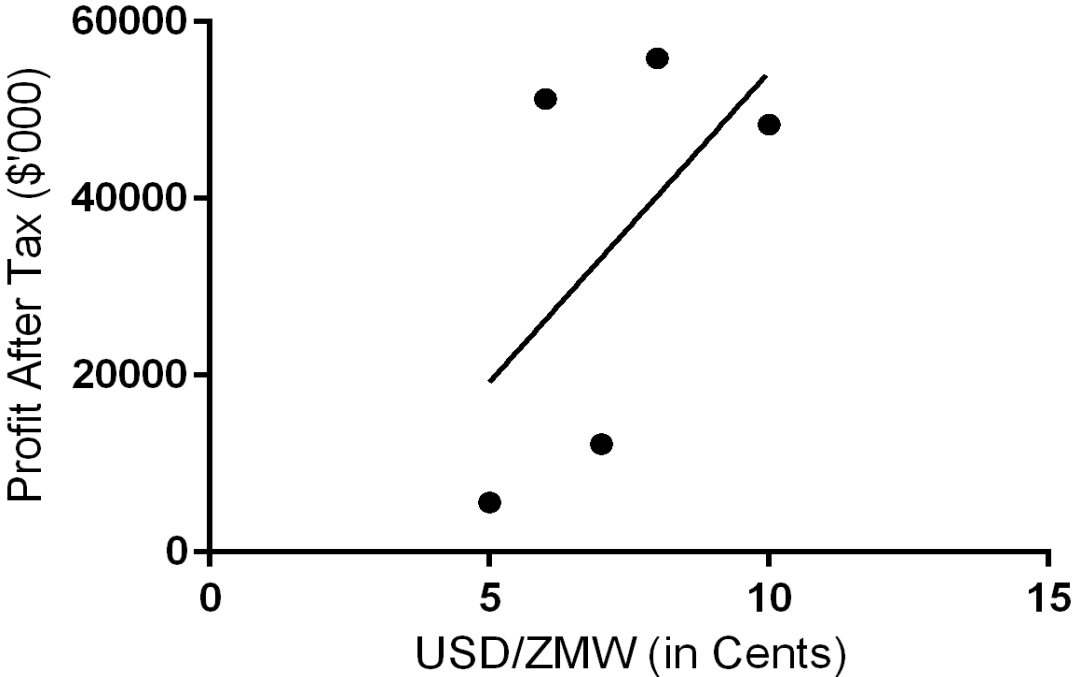


Figure 5.11: Linear Regression for Exchange Rate and Profit After Tax

R-Square = 0.3226

Correlation = 0.5680

Equation: $Y=7017*X-15854$

The results obtained in table 5.14 in terms of the correlation and the r square values are similar to those obtained in figure 5.11 under linear regression. In both cases a relationship could clearly been seen. The positive relationship of about 0.57 (representing fifty seven percent) shows that there was a medium correlation between appreciation/depreciation of the Zambian kwacha and the firm’s financial performance as measured by profit after tax. This indicates that the fifty seven percent of the drop in profit after tax could be linked to the devaluation of the kwacha. On the other hand, fifty seven percent of the positive financial performance of the company could be linked to the appreciation of the kwacha against the United States dollar.

Analyses of Percentage Changes in Variables

Table 5.15: Summary of Percentage Changes in the Variables

S/N	Years	% Changes in Forex	% Changes in Revenue %	% Changes in Operating Profit %	% Changes in Profit After Tax %
1	2017	00	00	00	00
2	2018	-20	8	16	15
3	2019	-30	5	-78	-75
4	2020	-50	-5	-87	-88
5	2021	-40	-12	-12	6

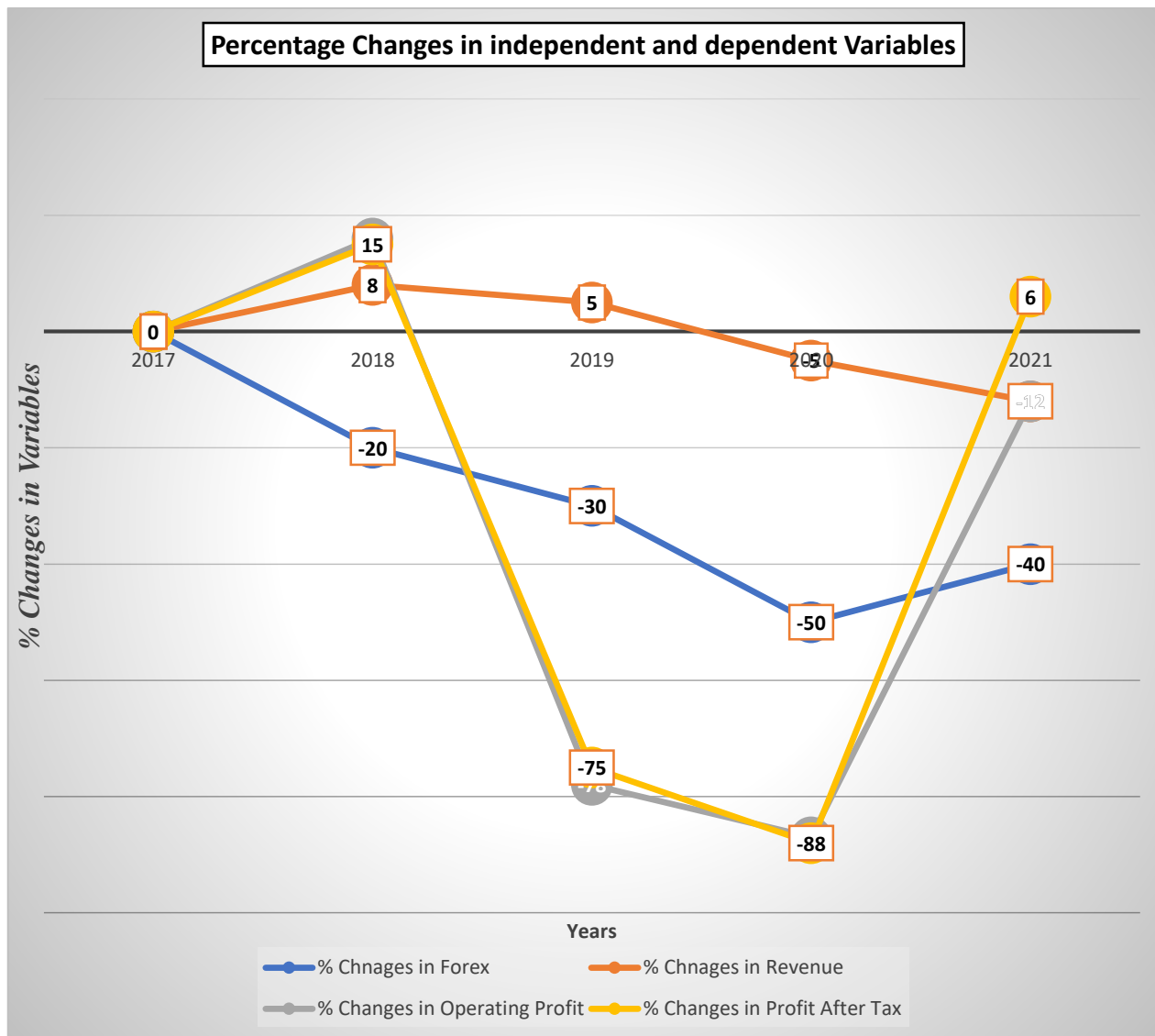


Figure 5.12: Combined Trend Analysis of percentage Changes in Variables

The percentage changes in table 5.15 have been rounded off to the nearest unit. The changes over the period of five year have been calculated for exchange rates, revenue, operating profit and profit after tax. The percentage changes have been plotted on the graph in figure 5.12 to observe how the changes in dependent variables have been in relation to changes in the independent variable.

The results have shown that the percentage changes in the dependent variables follow the trend of the percentage changes in independent variable. Just like other observation were made in the previous analyses, this too has visibly shown that the relationship in amounts observed also correspond to the percentage changes, indicating that the foreign exchange rates affected the financial performance of the company. The results have shown that, on average, kwacha lost value

by forty percent over a period of five years. During the same period, revenue and operating profit dropped by twelve percent. On the contrary profit after tax record a 6 percent growth in the period of study. This was because of an appreciation of kwacha which was record between 2020 to 2021.

5.9. Summary

Based on the three research questions, the findings have 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 company caused by the foreign exchange rates. In the next chapter, the researcher discusses the research findings that have been presented in this chapter.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

6.1. Introduction

In chapter five, data was presented and analysed. In this chapter, the study is concluded by summarizing the findings in relation to the research questions and research aims, as well as the value and contribution thereof. This chapter will further review the limitations of the study and the proposed opportunities for future research.

6.2. The Main Findings of the Research and Conclusion

The aim of the study was to assess the effect of foreign exchange rates on the 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 been presented in the sub-sections below as mirrored by the research questions.

6.3. Effect of Foreign Exchange Rates on Financial Performance as Measured by Revenue

The results indicated that foreign exchange rates had an effect on the financial performance of a power utility company measured by revenue as a financial performance indicator. All the three approaches used indicate that the fluctuation in the foreign exchange rates has a direct correlation with the changes in the revenue. As kwacha depreciated, company revenue also reduced. On average, kwacha lost value over the period of study and in the similar manner company revenue also decreased during the same period. Both correlations computed using excel formula and that computed using linear regression equation by using GraphPad software indicate the same correlation and r-square values. A positive medium correlation of 0.50 is a clear indication that there was a positive relationship between the independent variable used i.e., exchange rate values and revenue as a dependent variable. Linear regression graph depicts a positive line implying that a positive relationship between these two-variable existed.

6.4. Effect of Foreign Exchange Rates on Financial Performance as Measured by Operating Profit

Similar to the previous section, the results of the study under this section indicated that foreign exchange rates had an effect on the financial performance of the company. The analysis of the data indicated that as the value of kwacha declined against the US dollar, the operating profit reported by the company also declined. Similarly, during the period when kwacha gained against the US dollar, the rate of company's operating profit increased. Further, the analysis of correlation coefficient obtained using excel regression equation of 0.62 showed that there was a strong positive relationship between the value of kwacha in US dollar terms and the operating profit reported by the company. This was further evidenced by the positive linear relationship observed on the linear regression chart.

6.5. Effect of Foreign Exchange Rates on Financial Performance as Measured by Profit After Tax

The results of the study indicated that foreign exchange rates had an effect on the financial performance of Copperbelt Energy Corporation. This was evidenced by the results obtained from the study which showed that during the period of five years when kwacha averagely depreciated against the US dollar, the company's financial performance also reduced. The company's profit after tax was reacting to changes in the exchange rates. The computed correlation produced the same coefficient and r-square as that produced by the regression equation. The medium positive correlation was a clear indication that the relationship existed between the depreciation of the kwacha and the profit after tax reported by the company. The depreciation of kwacha was observed in the reduction of the company's profit after tax and the appreciation of kwacha resulted in the improved profit after tax recorded by the company.

6.6. Effect of Foreign Exchange Rates on Financial Performance as Measured by Other Ratios

In addition to the above, the analysis of profitability margin ratios, showed that the changes in the value of kwacha against the US dollar had an effect on the financial performance of the company. The researcher used gross profit margin, operating profit margin and net profit margin. The ratios were plotted on the graph using a line chart. The results showed a constant trend in all ratios in that the depreciation of kwacha resulted in all these ratios to perform badly whilst in the year when

kwacha appreciated, all the profitability margin ratios showed positive movements. That was clear evidence that foreign exchange rates had an effect on the financial performance of the power utility company.

The results of this study correspond with the those done by other researchers and the observations which they made. For instance, Umoto observed that exchange rates had an influence on investment interests (Utomo, et al., 2020). Rebecca also concluded in her study that fluctuations in the exchange rates had potential effect on investment flow and international trade across nations (Nelson, 2013). Similarly, Lagat and Nyandema (Lagat & Nyandema, 2016) found that the relationship which existed between indicators of financial performance and foreign exchange rates was a strong positive relationship. In the article done by Arikewuyo and Akingunola, it was also observed that escalation of production costs and net exports were caused by currency depreciation while production costs and net exports are cut down by currency appreciation (Arikewuyo & Akingunola, 2019). Mbithi also alluded to the same fact that effect of exchange rate fluctuation had an indirect influence on entities that import finished goods as well as the cost of imported inputs (Mbithi, 2013).

The effect of foreign exchange rates on the financial performance of Copperbelt Energy Corporation observed in this study are not contrary to what was observed by other researchers in other studies. The results show that foreign exchange rates can affect the financial performance of the energy sector either positively or negatively depending on the performance of the kwacha.

6.7. Main Contributions of The Study

In this study, the researcher achieved the objective of the study by assessing the effect of foreign exchange rates on the financial performance of CEC Plc. The results indicated that the existence of the correlation between the independent variable used and the dependent variables. The importance of the study was that it contributed to providing an insight of the effect of foreign exchange rates on company's financial performance. This information may be of great importance to the company, its stakeholders and shareholders. The findings may further help the company to take necessary measures in managing foreign exchange risks so that the adverse effect of the exchange rates is minimized.

Having analysed the results of all the three dependent variables and ratios against the independent variable, the researcher successfully found answers to the research questions. By arriving at the

above conclusions, it suggests that the research gap which was observed by the researcher has been filled, which was the assessment of the effect of foreign exchange rates on the financial performance of CEC, a power utility company in Zambia. The study revealed that currency depreciation negatively affects the financial performance of the company. This was in line with a study done in Nigeria that depreciation of the naira against the US dollar had a negative effect on the performance of deposit money bank (Jayeola, et al., 2019).

6.8. Recommendations of the Study

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 techniques 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, et al., 2020).

6.9. Limitations of the Study

The study had its own limitations and the initial one being that the period of study was limited to five years i.e., from 2017 to 2021 because the secondary data obtained from published annual

reports for this period was considered to be latest as historical financial data becomes of less use after a very long period due to changes in the accounting standards. However, the researcher ensured that the available data for the five-year period was properly analysed and well presented to produce the intended results.

The other limitation is based on the fact that only three financial performance indicators and some ratios were used in the study. There are several other financial performance indicators which were not analysed of which if they were to be studied, the results that may be produced may either be the same or different.

Most of the data used is historical in nature which may not accurately predict future events in that the world is dynamic and things keep on revolving. Changes in accounting standards may affect reporting rules. Once accounting rules change regarding recognitions, measurements and reporting of certain financial transactions, the financial performance indicators used may not be the same. However, the researcher made sure that the prevailing accounting rules were constantly applied in the study, hence producing reliable results.

6.10. Suggestions for Future Research

Further research is being recommended which should be based on the primary data. By doing so, the inaccuracies that may come with secondary data would be ironed out. Another research should be undertaken in future which should focus on other financial performance indicators and ratios that have not been used in this study to provide a wider coverage of the outcomes. Additionally, a study should be done for a different power utility company so that the results can be compared to see if there will be similarities in the outcomes or not.

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