

## An Analysis of How Depreciation of The Zambian Kwacha (Against the Dollar) Has Affected Zambian Businesses: A Case Study of The Road Local Contractors (Paper ID: CFP/1616/2020)

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### **Abstract**

*The purpose of the study was to assess the effect of depreciation of the Zambian Kwacha against the US Dollar has affected local road contractors in Lusaka, Zambia. The study was ruled by the following specific objectives: 1) To determine effects of the Zambian kwacha depreciation against the US dollar on local road contractors in Lusaka. 2) To establish areas that is affected by depreciation of the Zambian Kwacha against the US dollar on Zambian road contractors. 3) To assess to what extent Kwacha depreciation affects the project completion period.*

*Since its' inception, the Zambian Kwacha has been plagued with high levels of inflation. This has led to a violent loss of value of the Kwacha. In 2012, for instance, the US dollar: Zambian Kwacha exchange rate was US\$1: 5,228.97, 2013 the rate had increased to US\$ 1: 5.53ZMW. In 2014, it had increased further to US\$1: 6.35, 2015 increase went to US\$ 1: 10.85ZMW.*

*The research methodology was embarked on using a case study design with emphasis on descriptive research with the intent to demonstrate the effect of Zambian Kwacha depreciation on local road contractors in Lusaka. The study used descriptive research design as it nominated an existence of a relationship between the dependent variable and the independent variable. The target population of the study was local road contractors in Lusaka, Zambia. The sample size consisted of fifty building professionals with the breakdown as follows: ten architects, ten builders, twenty quantity surveyors and ten structural engineers. Probability sampling was used in this study and simple random sampling was the sampling technique used.*

*The research design that the researcher opted for has been explained including sampling technique, sample size, target population and data collection instruments to be used have also been explained. The researcher has also touched on the ethical considerations to be mindful of while conducting the study. The Gantt chart which has given an idea of when each activity of the research will be conducted and for how long has also been included.*

*A detailed analysis of the results and findings of the research questions raised in chapter one. The findings and results are analyzed and presented using tables and figures for interpretations*

*It is pretty evident that depreciation of the Zambian Kwacha against the US Dollar has affected all the local road contractors in Lusaka, Zambia and that the effect is more negative than positive. Zambia therefore needs to start developing its own local manufacturing industry in order to avoid importing certain materials. If local road contractors start purchasing certain materials including machinery locally, they will not have to incur certain unnecessary losses and delays that stem from cost and budget overruns due to sudden increases in raw material and machinery as the local currency loses value. Manufacturing our own materials and equipment increasing exports and correcting economic fundamentals. If we, as Zambians can manage to have a stable currency, we will begin to experience a stable economic growth and a stable inflation environment.*

**Key words:** Construction companies, Impact, Effects, Depreciation, US Dollar

## I. CHAPTER 1:

### INTRODUCTION

This chapter contains the background of the study. Also included in this chapter are: the problem statement, research objectives and research questions. The theoretical and conceptual framework is also included. Lastly, the significance of the study is also explained.

### BACKGROUND OF THE STUDY

The Kwacha is a legal tender of Zambia that was issued into circulation on January 16<sup>th</sup> 1968 after the Zambian government had voted in favor of changing the main currency unit from the Zambian Pound, which it was called after independence in 1964 to the Zambian Kwacha.

The Kwacha was originally pegged to the pound at a fixed rate of 1.7094 Kwacha per Pound. Zambia, however, broke all its' currency ties to the British monetary unit after the American Dollar devalued on August 15<sup>th</sup> 1971. The Kwacha therefore became pegged to the American monetary unit. At this time, the value of the Zambian Kwacha to the US Dollar was k1 to US \$ 1.40. By the late 1970's, the Zambian Kwacha had already depreciated to below US\$1. Low copper prices and continued increase in oil prices on the world market were some of the major contributors to the declining economy and the subsequent devaluation of the Kwacha. Inflation between the 1980's and 90's was in the three-digit range, this led to further devaluation of the Kwacha. (Source: Bank of Zambia annual report 2016)

Below is a table adapted from the bank of Zambia annual report, showing the performance of the Zambian Kwacha against the US Dollar from 2010 to 2017:

Fig 1: Kwacha/US Dollar Exchange Rates: 2010 – 2017

Year	Buying	Selling
2010	4725.74	4745.74
2011	5107.29	5127.29
2012	5198.47	5228.97
2013	5.52	5.53
2014	6.33	6.35
2015	10.83	10.85
2016	9.81	9.86
2017	10.00	10.05

Source: Bank of Zambia; 2017; Currency History

The high inflation rates forced the Bank of Zambia to introduce high value denominations such as the k20, 000 and k50, 000 notes respectively. These high value notes were in circulation until 2013 when the face value of all Zambian banknotes was changed / rebased (Hence the change in amounts between 2012 and 2013). The Zambian Kwacha was rebased in order to reduce the inconvenience and risk associated with carrying large sums of money for transactions. It was also noticed that book-keeping and statistical records were becoming difficult to maintain as the zeros for the old currency became too much. Costs regarding payments systems for delivery of banking services through a greater use of technology also became higher. (Source: Bank of Zambia; 2017; Currency history).

Whenever there is a depreciation of the Zambian Kwacha, there is a rise in the cost of the material needed by these companies. This puts the said companies, and indeed the entire construction industry at a high risk. (Source: Import Partners of Zambia. CIA World Factbook. 2015. Retrieved 26 July 2016). The price to exchange one U.S. dollar for one unit of a foreign currency such as the

Kwacha is called an exchange rate. The exchange rate of the U.S. dollar varies for different foreign currencies, which fluctuate daily based on a number of factors. When the Kwacha depreciates relative to a dollar, it takes more Kwacha's to get the same amount of that dollar. Kwacha depreciation means it's more expensive for a domestic business to convert Kwacha to a foreign currency and cheaper for a foreign business to convert its currency to Kwacha.

The construction sector in Zambia is led by the demand for mining industry, shopping. The Zambian Kwacha has over the years depreciated a great deal from the time it became the legal tender of Zambia. These series of depreciation have affected Zambian businesses negatively. The ones hit the most are those that import most of the materials used. Construction companies import most of the material that they need because there is a lack of access to high quality construction material in Zambia. Centres, infrastructure development, residential buildings and offices. Building and construction has been the largest industrial sector of Zambia comprising 27.5% of GDP with a growth rate of 12% in 2016 and recording a US\$3.3bn of foreign direct investment. As a result, there are many Zambian construction companies including professional services like contractors and architects. This study is focussed on road local contractors in Lusaka which fall under infrastructural development. Construction has become a vital component to the development of Zambia as it has a great impact on the economy, not only the Zambian economy but the economy in any nation. It plays a critical role on social economy, especially to decrease the unemployment rate as it creates jobs for architects, engineers and casual builders e.g. bricklayers in the country. Construction also requires tools and supplies, which creates jobs for people who manufacture excavation equipment,

cranes, backhoes, lifts, lumber, cement and building supplies. The impact of the construction industry goes beyond the erection of buildings. New houses and offices need furniture and appliances. Roads, commercial properties and homes all need landscaping, which creates the need for maintenance. The construction industry is at the core of this job creation process. The construction industry is diverse; it involves property builders as well as developers, material suppliers and contractors. The environment that all people live in is a constructed one i.e. road, offices, schools, hospitals, are all part of Zambia's economic infrastructure, which would not be possible if it was not for construction.

According to the Bipartisan Policy Centre, residential house construction can account for 4.5 to 6.3 percent of the nation's gross domestic product. When this industry contracts, the impact is sufficient to send the economy into a recession. Economic recovery is also historically tied to the recovery of the housing industry. (Source: Mkuni.M. 2016; An assessment of the road planning cycle in Zambia road construction projects; University of Zambia).

Local construction companies in Zambia are affected by a few challenges, which are interlinked with the weakening of the Zambian Kwacha against the US dollar, these are:

The constant rising of Project Costs. This is one of the problems that is facing the Zambian construction industry, which is a constant rise in project costs. This is practically due to the rise in prices of steel and oil, caused by the weakening of local currency against the dollar. Most companies give a quote for a project only to realize the project has cost more than they budgeted for.

Lack of skilled labour cannot be underestimated when talking about the problems facing the

Zambian construction industry, for instance When construction opportunities rise, some contractors are forced to go looking for skilled labour from other counties who always demand too high salary wages. Currently the country is unable to produce enough skilled labour or professionals who have the ability and knowledge to handle the job. The latest incidence is in the construction of roadworks going on in Zambia currently. Where the Chinese contractors are forced to bring workers on board from China to help the locals in building the roads. An example of a Chinese contractor that brings employees from its country is Avic International. Most of the Chinese employees come to Zambia in a supervisory role (Source: Mkuni.M. 2016; An assessment of the road planning cycle in Zambia road construction projects; University of Zambia - UNZA).

**Capital Supply Constraints:** As more projects are coming up in various countries, in Zambia it is clear that more conservative measure to lending by the bank's limits investor confidence due to increased difficulty and recession in access to credit. It is difficult for money lending firms to extend their hands of service. This is because almost all the lending services have lost confidence in borrowing construction firms' fund.

## **Problem Statement**

Since its' inception, the Zambian Kwacha has been plagued with high levels of inflation. This has led to a violent loss of value of the Kwacha. In 2012, for instance, the US dollar: Zambian Kwacha exchange rate was US\$1: 5,228.97, 2013 the rate had increased to US\$ 1: 5.53ZMW. In 2014, it had increased further to US\$1: 6.35, 2015 increase went to US\$: 10.85ZMW. There was a slight improvement in the Zambian Kwacha in 2016 when the rate went to US\$: 9.86ZMW. However, that was reduced again to US\$1: 10.05ZMW in

2017. (Source: Bank of Zambia annual report; 2017). It is noticed that there are less zeros in the Zambian Kwacha from 2013 onwards because the rebasing of the Zambian Kwacha had been effected .The reduction in value of the Kwacha has brought misery, not only to businesses and their owners, but to consumers and the entire working class population as a whole. This study focusses on the effect that the depreciation of the Zambian Kwacha has on Zambian businesses. It focusses on the road local contractors in particular as they import most of the raw material that they use for their construction. (Source: Shula. K; 2015; the inevitable depreciation of the Zambian Kwacha) The equipment and some of the workforce that is used in road construction is at times also imported and so is Bitumen. Importing involves spending a lot of money, and it becomes worse when the Zambian Kwacha is not doing well against the US dollar. A depreciation of the Kwacha against the US dollar therefore causes a problem to this industry as it uses the US dollar as a medium of exchange. It is therefore necessary for the research to be carried out to determine the extent to which the depreciation of the Kwacha affects local road construction firms in terms of time for completion of the project and the costs and profitability of the project.

## **General Objective**

The general objective of the study is to assess how the depreciation of the Zambian Kwacha against the US Dollar affects local road contractors in Zambia.

## **Specific Objectives**

1. To determine effects of the Zambian kwacha depreciation against the US dollar on local road contractors in Lusaka.



2. To establish areas that is affected by depreciation of the Zambian Kwacha against the US dollar on Zambian road contractors.
3. To assess to what extent Kwacha depreciation affects the project completion period.

## Research Questions

1. What are the effects of the Zambian Kwacha depreciation against the US dollar on local road contractors in Zambia?
2. What areas are affected by depreciation of the Zambian Kwacha against the US dollar in Zambian local road contractors?
3. To what extent does Zambian Kwacha depreciation against the US dollar affect project completion period?

## Theoretical Framework

The effect of exchange rate depreciation and its effects was explained by Dornbusch (1987) by developing an econometric model and examining the effect of the exchange rate on prices. Dornbusch's work has been the basis for other works (Kasapoğlu, 2007; Brooks, 2002). When examining the relationship between exchange rate and domestic prices, Dornbusch talked about market density, import volume, import substitute and domestic production channels. Agenor and Montiel (1996) mentioned four major transmission mechanisms of how exchange rate fluctuations affect inflation which were; An open economy can directly affects the price of imported substitute goods and goods subject to trade; It can indirectly increase the price of the final goods through imported input prices; Due to fluctuations in the exchange rate, the uncertainties in foreign currency prices can affect domestic price makers and increase domestic prices; Finally, it increases the prices by the means of wages (Monfared .S & Fetullah A (2017). The Relationship between Exchange Rates and Inflation: The Case of Iran, Institute of Social Science, Gazi University).

According to Sen (2016), in her trade theory which states that, the exchange rate can affect an economy's imports and exports. A fluctuation in the exchange rate affects both the value and volume of trade. If the real exchange rate rises for the home country, i.e. if there is a real depreciation, the households in the domestic country can get less foreign goods and services. Thereby a unit of foreign good will gives more of domestic goods. The higher the real exchange rate the more surplus in the net exports the country will obtain. For road construction companies in Zambia, depreciation in the currency will mean spending more on raw materials since most of their inputs, including labor are imported, mostly from China. Much as they import from China, the medium of exchange that is used is the US Dollar. When asked why most of their inputs are imported, the answer is, Zambia does not produce some of the inputs locally and for those that are produced locally, the quality is substandard. A depreciation in local currency results in increase in the cost of the raw materials that are imported. This results in hiked project implementation costs. A hike in project costs has a negative impact on any business and usually results in the company taking measures to cut down on certain costs. In some cases, cutting down on costs will mean cutting down on employee numbers. Some businesses decide to let go of some of their employees in order to keep their business afloat. For some, a hike in project implementation costs can lead to some projects coming to an abrupt stop. 1. (Sources. Sen; 2016; International trade theory and policy; Jawaharlal Nehru University).

The International Fisher Effect (IFE) theory is an important concept in the fields of economics and finance that links interest rates, inflation and exchange rates. Similar to the Purchasing Power Parity (PPP) theory, International Fisher Effect attributes changes in exchange rate to interest rate differentials, rather than inflation rate differentials

among countries. The two theories are closely related because of high correlation between interest and inflation rates. (Source: Abdunnasser. H. 2009; The international fisher effect theory and application; LLC Consulting Publishing Company).

One of the problems affecting consumers and the world economy is exchange rates fluctuations and interest rates disparities. Among others, exchange rates fluctuations can create inefficiency and distort world prices. Moreover, the long-term profitability of investment, export opportunities and price competitiveness imports are all impacted by long-term movements in exchange rates, hence international investors/companies usually have to pay very close attention to countries' inflation. International businesses engaging in foreign exchange transactions on daily basis could benefit by knowing some short-term foreign exchange movements (Maurice K. Shalishali, inflation (2002), interest rate, and exchange rate: what is the relationship, Columbus State University).

Some of the theories that explain the depreciation or changes in the country's currency value include; the Quantity theory of money, International Fishers Effect, Fisher Effect and Purchasing Power Parity.

## **Quantity Theory of Money**

Quantity theory of money states that money supply and price level in an economy are in direct proportion to one another. When there is a change in the supply of money, there is a proportional change in the price level and vice-versa. If the amount of money in an economy doubles, price levels also double, causing inflation (the percentage rate at which the level of prices is rising in an economy). The consumer, therefore, pays twice as much for the same amount of the good or service. Another way to understand this theory is

to recognize that money is like any other commodity: increases in its supply decrease marginal value (the buying capacity of one unit of currency). So, an increase in money supply causes prices to rise (inflation) as they compensate for the decrease in money's marginal value.

The Quantity Theory of Money is considered as one of the main building blocks in the construction of economic theory. The main implication of the Quantity Theory of Money is that long run movements in the price level are determined primarily by long run movements in the excess of money over real output. However, conventional economic growth theories suggest that inflation negatively affects overall economic performance of any country. Several economic studies also reveal that high inflation distorts the decisions of private agents concerning investment, saving, production which in turn slower economic growth. There is also evidence that even moderate levels of inflation damage real growth. Considering various negative consequences of inflation on the economy, there is a consensus among world's leading economists that the price stability should be the prime objective of monetary policy (King,1999) and the central banks should be committed to maintain low inflation (Sakib-Bin-Amin (2011)“Quantity Theory of Money and its Applicability: The Case of Bangladesh” North South University, University of North South University).

## **The Theory of International Fisher Effect**

The International Fisher Effect (IFE) is an economic theory stating that the expected disparity between the exchange rate of two currencies is approximately equal to their countries' nominal interest rates. The International Fisher Effect theory suggests that currency of any country with a relatively higher interest rate will depreciate because high nominal interest rates reflect

expected inflation. Assuming that the real rate of return is the same across countries, differences in interest rates between countries may be attributed to differences in expected inflation rates. The International Fisher Effect is based on the analysis of interest rates associated with present and future risk-free investments, such as Treasuries, and is used to help predict currency movements. This is in contrast to other methods that solely use inflation rates in the prediction of exchange rate shift, instead functioning as a combined view relating inflation and interest rates to a currency's appreciation or depreciation. The theory stems from the concept that real interest rates are independent of other monetary variables, such as changes in a nation's monetary policy, and provide a better indication of the health of a particular currency within a global market. The International Fisher Effect provides for the assumption that countries with lower interest rates will likely also experience lower levels of inflation, which can result in increases in the real value of the associated currency when compared to other nations. By contrast, nations with higher interest rates will experience depreciation in the value of their currency. (Source: Salishali.M. 2012; A test of the international Fisher Effect in selected Asian Countries: International journal of humanities and social science)

## The Theory of Fisher Effect

The Fisher effect states that in response to a change in the money supply the nominal interest rate changes in tandem with changes in the inflation rate in the long run. For example, if monetary policy were to cause inflation to increase by five percentage points, the nominal interest rate in the economy would eventually also increase by five percentage points. It is important to keep in mind that the Fisher effect is a phenomenon that appears in the long run, but that may not be present in the short run. In other words, nominal interest rates

don't immediately jump when inflation changes, mainly because a number of loans have fixed nominal interest rates, and these interest rates were set based on the expected level of inflation. If there is unexpected inflation, real interest rates can drop in the short run because nominal interest rates are fixed to some degree. Over time, however, the nominal interest rate will adjust to match up with the new expectation of inflation. In order to understand the Fisher effect, it is crucial to understand the concepts of nominal and real interest rates. That is because the Fisher effect indicates that the real interest rate equals the nominal interest rate less the expected rate of inflation. In this case, real interest rates fall as inflation increases unless nominal rates increase at the same rate as inflation. Technically speaking, then, the Fisher effect states that nominal interest rates adjust to changes in expected inflation.

Nominal interest rates are what people generally envision when they think about interest rates since nominal interest rates just state the monetary return that one's deposit will earn in a bank. For example, if the nominal interest rate is six percent per year, then an individual's bank account will have six percent more money in it next year than it did this year (assuming of course that the individual did not make any withdrawals). On the other hand, real interest rates take purchasing power into account. For example, if the real interest rate is 5 percent per year, then money in the bank will be able to buy 5 percent more stuff next year than if it was withdrawn and spent today. It is probably not surprising that the link between nominal and real interest rates is the inflation rate since inflation changes the amount of stuff that a given amount of money can buy. Specifically, the real interest rate is equal to the nominal interest rate minus the inflation rate:

The Fisher Effect and the International Fisher Effect are related models but are not

interchangeable. The Fisher Effect claims that the combination of the anticipated rate of inflation and the real rate of return are represented in the nominal interest rates. The International Fisher Effect expands on the theory, suggesting that currency changes are proportionate to the difference between the two nations' nominal interest rates. In times where interest rates were adjusted by more significant magnitudes, the International Fisher Effect held more validity. However, the consumer price index (CPI) is more often used in the adjustment of interest rates within a specified economy. (Source: Cheofan.C. 2015; Fisher effect theory and fisher paradox in China's economy; Open journal of social sciences)

## **Purchasing Power Parity Theory**

Purchasing power parity, also known as PPP, is a "method for calculating the correct value of a currency, which may differ from its current market value," according to "The Economist". It is useful for comparing international living standards between countries as it defines the correct exchange rates for comparing prices and incomes in different currencies. Purchasing power parity theory states that goods and services should cost the same everywhere after converting to a common currency. The use of Purchasing Power Parities (PPPs) for a range of analytical purposes has recently received renewed attention in the literature. Traditionally, PPPs are used for international comparisons of income, expenditure, output and productivity. They play a pivotal role in research on growth and convergence in the world economy (Maddison, 2001, 2005). Several scholars (Rogoff 1996, Taylor and Taylor, 2004) have revisited on-going debates on, for example, the law of one price, the theory of the real exchange rate and the Balassa-Samuelson hypothesis. PPPs have also been readdressed in various studies of price convergence of goods and services, for example in the European Union (Canzoneri et al., 1999; Goldberg and Verboven, 2004). They also

play an important role in historical comparisons of relative income and productivity, both at aggregate and industry level (Broadberry, 1997; Ward and Devereux, 2003; Broadberry, 2003). PPPs are also indispensable in empirical applications of international trade and endogenous growth theories (Timmer, Gerard and Bart V.A (2006), PPPs for Industry Output: A New Dataset for International Comparisons by Groningen Growth and Development Centre University of Groningen) When it comes to foreign exchange, a currency's relative worth depends on its parity with another currency. A parity condition is a relationship based around concepts such as inflation and interest rates. These are what determine the price at which two currencies should be exchanged. (Mohammed. K.Y. 2016). The determinant factors of balance of payments: An investigation from Sudan through the period 1980 to 2016; Edewelsis Applied Science and Technology). Mohammed, in his balance of payments theory states that:" A balance of payments is comprised of two segments – a country's current account and capital account-, which measure the net inflows and outflows of goods and capital. A country that is running a large current account surplus or deficit is indicating that its exchange rate is out of equilibrium. In order to bring the current account back into equilibrium, the exchange rate will be adjusted over time. A large current account deficit (more imports than exports) will result in the domestic currency depreciating. A surplus on the other hand is likely to cause an appreciation. In the case of Zambia, the current account deficit is high. Because it is not competitive where export goods are concerned in the international market. This is why Zambia has more imports than it does exports. Causes of increased current account deficit include declining copper prices, political tensions as well as incoherent policies. Metal accounts for 80% of Zambia's exports (Source: Bank of Zambia Annual Report; 2017), this renders Zambia's foreign



income very vulnerable to volatile commodity prices)

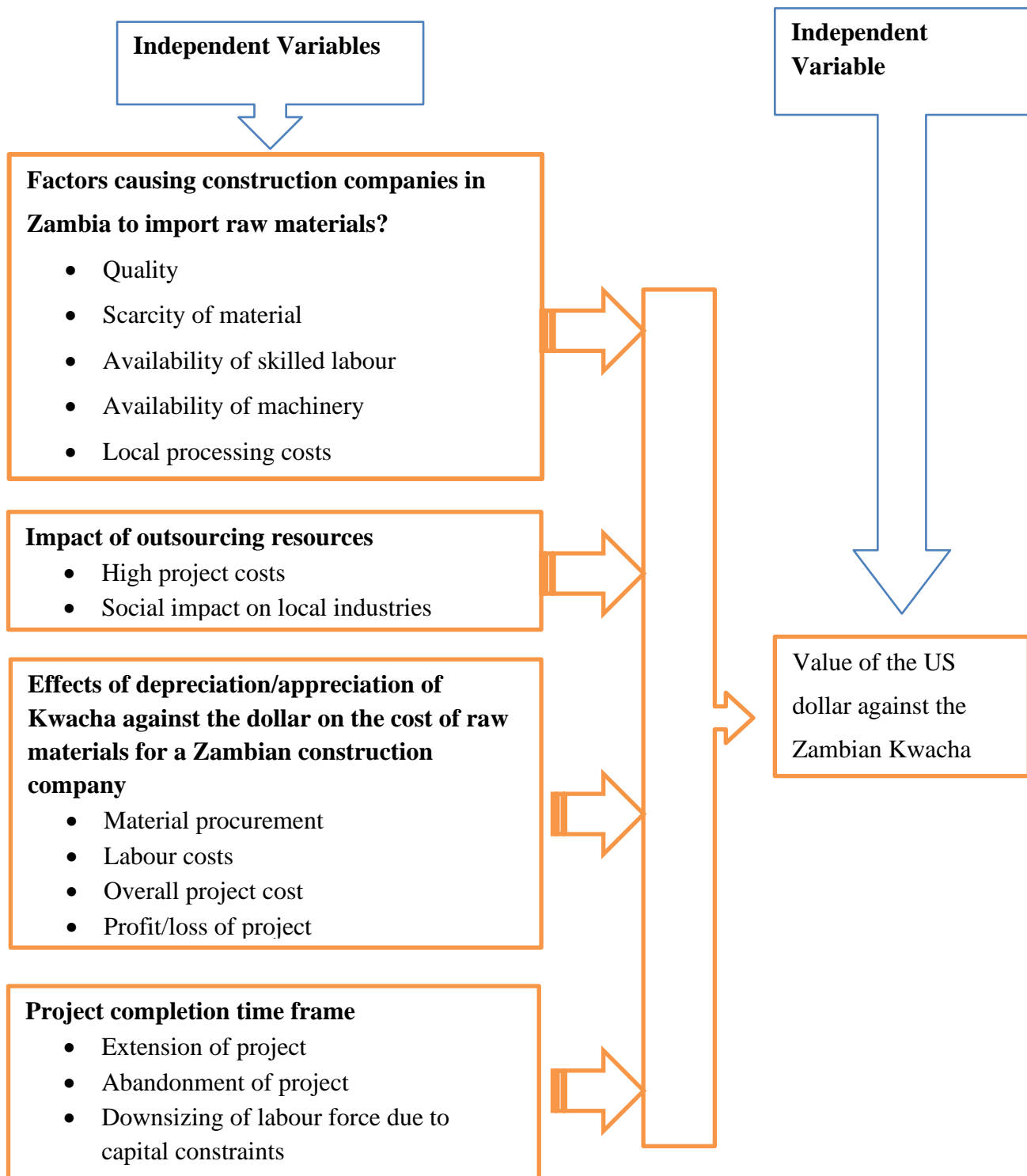
In 2012, lower metal prices (especially copper) adversely affected export revenue and, since import demand was resilient, the trade surplus almost halved to 7.2% of GDP (from 11.4% of GDP in 2011). Consequently, the current account balance registered a deficit of 0.9% of GDP for the first time since 2008, rendering Zambia reliant on external financing. In 2012, the current account deficit was comfortably financed by FDI inflows, which amounted to 4.4% of GDP. (Source: Bank of Zambia Annual report; 2017). This is, however expected to change for the better as lower metal prices and high import demand due to investments in mining and infrastructure persevere. In addition, stable foreign direct investment (FDI) inflow is expected to provide sufficient cover. As for the policies, most of the policies adopted by the Patriotic Front (PF) cabinet since it took office in 2011 were inclined towards an interventionist approach. Despite some market-oriented measures, such as the adjusted tax regime to support the troubled mining sector, most policies unnerved investors (e.g. the compulsory temporary repatriation of export receipts, the fund for boosting domestic participation in the mining sector and the prohibition of auctioning Zambian gemstones abroad. Ever since the 2011 election, the PF has exhibited increasingly authoritarian tendencies in dealing with the opposition and critics. The harassment of the opposition included suspicious temporary arrests of opposition leaders, an attempt to dissolve the Movement for

Project implementation time frame is another dependent variable. Devaluation of the Zambian Kwacha will lead to increase in cost of imports; this may affect the project implementation time frame.

Multiparty Democracy (MMD), attempts to block opposition rallies and sustained efforts to gain parliamentary majority by inducing by-elections. The judiciary has managed to keep such transgressions in check so far and is expected to continue to do so. These developments do not threaten general stability, but have increased political tensions and discontent amongst the population, and could distract the government from policy making.

## **Conceptual Framework**

For the purpose of this study, the independent variable will be the value of the Zambian Kwacha against the US Dollar as each and every variable is directly or indirectly linked or affected by the value of the Kwacha against the US Dollar. The dependent variables will be all the factors that cause road construction companies to import raw material. Establishing the reasons why construction companies in Zambia import raw materials may aid policy makers to address this issue and bridge the gap. The impact of outsourcing is another dependent variable. Raw materials are outsourced, rather than bought locally. What impact does this have on the construction companies and the economy as a whole? The effects of depreciation of the Zambian Kwacha against the US dollar on the cost of raw material for a Zambian construction company is another dependent variable. Does Kwacha depreciation have any effect on the cost of raw materials for construction companies in Zambia? If so, what?



**Fig 1: Conceptual Framework**

## 1.8 Significance of The Study Significance of The Study

The results from the research will allow policy makers and advisors to understand better the

realities that business owners in Zambia experience when the Zambian Kwacha value is in their favor and also when it is not in their favor. That way they will make better policies where importing and exporting goods are concerned.

This issue is one of the most important topics in the country, as is testified by the number of papers, books and international conferences on the subject that have taken place of the past number of years. Therefore, it is anticipated that this project will generate a great deal of interest, not only among policy makers but among the general public as well.

This study will also be of value to students who carry out any form of research on the Zambian Kwacha in that they can use it as a reference point.

## Definition of Operational Terms

**Construction companies:** A construction company is a business enterprise concerned with the building of buildings, bridges, roads etc.

**Impact:** A marked effect or influence

**Effects:** Consequence of an action

**Depreciation:** Reduction in value of an item or asset

**US Dollar:** Currency of the United States of America

## 1.10 Chapter Summary

This chapter has discussed the Zambian Kwacha, its depreciation against the US Dollar in more detail, especially through the theoretical framework. The project topic has been introduced and the significance if the study established. Other parts of the study discussed in this chapter include problem statement, research objectives and questions, theoretical and conceptual framework, limitations of the study. Operational terms have also been explained in this chapter.

## II. CHAPTER 2: LITERATURE REVIEW

### 2.1 Overview

According to the American Journal of Educational Research (2015), literature review provides one with means of getting to frontier in one's particular field of knowledge. Unless one learns what others have done in one's area of study, one may not produce a project that would contribute to additional knowledge. (Source: Cortes. A.M, Rojo. A.P, Becera.G.L.; 2015; American journal of educational research; Science and Education Publishing). A literature review has shown that most attempts to analyse the risks to the construction business due to FOREX fluctuations has focused mainly on issues at the project level, rather than at the organization level. When the focus was on the latter, it was in terms of only one capability either financial capability, procurement capability, marketing capability, operational capability or technological capability. Past studies (Bing & Tiong, 1999; Dobrzykowski, 2012; Morgan, 2009; Nath et al., 2010; Wang et al., 2006; Zou et al., 2009) reflect this tendency. It means that the focus should go beyond mitigation itself: it should also ask whether organizations have relevant capabilities to implement the mitigation measures required across related areas of Organizational Capabilities (OC). (Source: Cortes. A.M, Rojo. A.P, Becera.G.L.; 2015; American journal of educational research; Science and Education Publishing)

The literature review will focus on articles or papers and books that were written by different individuals concerning the topic at hand. It will feature perspectives from different writers on a global, regional as well as local perspective.

The performance of the construction industry is affected by national economies (Navon, 2005). In Zambia, efficient construction projects can provide

a solid platform for reviving the Zambian economy and for building a more balance and independent economy during stable political conditions. Several factors affect contractor performance in the Zambian construction industry. Contractor performance is often responsible for either a successful project that reflects strong contractor skills and site management or a failure that reflects the contractor's lack of knowledge, skills and experience. The value of the country's currency to other currencies also plays a key role in the contractors' performance as it has a cost implication with regards to the factors of production. Variations and changes in the foreign exchange rate of the host country can result in positive as well as negative impacts. When the currency of a host country appreciates, the assets' value can rise, but the exports from that country will be affected by the rise in the currency's value, on the contrary, the depreciating currency of the host country may cause losses in the assets' values, although it is advantageous to export goods from the host country if it is a major producer of goods and services (Chilongo and Mbetwa 2017, An Investigation into the factors affecting project performance among contractors in Lusaka District of Zambia ; University of Zambia).

## 2.2 Effects of Currency Depreciation Against US Dollar

Economic theories acknowledge both positive and negative effects of currency depreciation on real output. An early dominant view emphasizes expansionary effects of currency depreciation. Specifically, exchange rate depreciation makes a country's exports cheaper in the global markets. This will stimulate domestic aggregate demand and increase real GDP. Recently, however, some have made a case for the possibility that exchange rate depreciation may adversely affect real output and, accordingly, nullifies its noted benefits on the

country's exports. There is also a view that the exchange rate and real output may not be related. The observed relation between them may be driven by the third common factor such as productivity or monetary policy. The negative effect of exchange rate depreciation is viewed highly possible for developing countries. A main channel stressed in the literature that accounts for contractionary depreciation works through the supply side of the economy by affecting the costs of production inputs (Krugman and Taylor (1976) and Edwards (1986)).

Malemuna and Kabubi in their research entitled investigating the impact of Kwacha depreciation against the US dollar on Zambian businesses, employment and income, stated that; currencies may fluctuate in a way that are dramatic and the effect of these fluctuations can be felt worldwide. Malemuna and Kabubi give an example of the Asian crisis of 1997 -98 in which the Thai Baht suffered devaluation in July 1997. The devaluation triggered a financial collapse that spread to other countries which included Indonesia, South Korea, Hong Kong and Malaysia. This led to severe contraction in the economies mentioned increase in bankruptcy numbers and plunging of the stock markets. (Source: Malemuna and Kabubi ;2017; Investigating the impact of Kwacha depreciation against the US dollar on Zambian businesses, employment and income; Information and communications University)

Triguanarsyah explains that the construction industry is a prime motivator for any economy. It is generally responsible for the physical development or the transformation of the environment that makes the built environment very vital to the social economic development of a nation. Triguanarsyah opines that the sector forms a crucial focus of any nation's economy. The construction sector was referred to in economic

terms as the capital goods industry because its products and services constitute the basis where other economic activities are built upon. Furthermore, construction projects are a high-risk business which is complicated further by the risk of fluctuations in the foreign exchange rate (Source: Triguanarsyah.B. 2016; The Impact of FOREX fluctuations on construction business performance).

**Effect on Exports and Imports caused by currency depreciation;** Lowering of the value of a currency of a country tends to raise its exports by making its goods cheaper for foreigners. On the other hand, devaluation or depreciation makes the imports from abroad expensive in terms of domestic currency (rupees in case of India) and therefore the imports tend to fall. With exports increasing and imports declining, it is expected that devaluation (depreciation) will reduce a country's trade deficit.

As a matter of fact, in recent years when a country experienced a severe disequilibrium in the balance of trade or balance of payments, it devaluated its currency to raise exports and reduce imports and thus to restore equilibrium in the balance of payments. However, it may be noted that the effect of devaluation or depreciation on balance of trade is ambiguous and quite uncertain because a good deal depends on the price elasticity of exports and imports of a country. For example, if the price-elasticity of exports in terms of a foreign currency of a country is less than unity, the value of exports in terms of a foreign currency will fall, as increase in physical volume of exports will be more than offset by the depreciation of the currency. On the other hand, if the demand for imports is inelastic, they will not decrease despite devaluation (Mukher. S 2019, Effects of Depreciation and Devaluation of the Exchange Rate, Indian Institute of Technology, Bombay).

**Extension & Abandonment of project;** Zulu and Chileshe (2008) investigated contractor performance in Zambia and found it below expectations, arguing that nothing can be learned from local ongoing projects that have not been completed or have been delayed. They concluded that contractors' poor performance has huge implications on the economy. The construction industry being a key sector in the development and economic growth of Zambia has not escaped the challenges facing other countries worldwide in terms of delivering construction projects on time as stipulated in the contracts (Chilongo and Mbetwa 2017, An Investigation into the factors affecting project performance among contractors in Lusaka District of Zambia).

Effects of construction delays are always debilitating on construction industry performance. Several studies were executed by researchers to evaluate the effects of delay in construction projects. A study was conducted by Aibinu & Jagboro (2002) to assess the negative effects of delays on construction projects in Nigerian. A questionnaire was distributed to construction practitioners: owners, architects, consultants, contractors, and quantity surveyors. The findings of the survey showed that effects of delays in Nigerian construction projects were: time extension, cost increase, arbitration, disputes, litigation, and project termination. Haseeb & Bibi (2011) also investigated the effects of delays in the construction industry of Pakistan by conducting a questionnaire survey among construction stakeholders and also identified that schedule overrun, budget overrun, differences among construction stakeholders, arbitration, claims, litigation, and project abandonment as the effects of construction delays. Denini (2012) examined the effects of delays in Libyan construction industry and argue that impacts of construction delay include time overrun, cost overrun, claims,



disputes, litigation, poor quality of work, decrease in the owner's financial commitment, arbitration, contract termination, total project abandonment. Study of Tumi et al. (2009) identified that the construction delay has the following effects on construction projects: loss of profit; blacklist by authorities; cost overrun, time overrun, and bad reputation to construction stakeholders. Another research performed by Kikwasi (2012) on effects of delays in construction projects in Tanzania equally concluded that effects of delays includes time overrun, budget overrun, idling resources, disputes, arbitration, poor quality of work, loss of profit, bankruptcy, litigation, create stress to contractors, total abandonment, create stress to the clients, and acceleration losses (Ullah, Khan, Ranking of Effects of Construction Delays; Evidence of Malaysian Building Project).

**Downsizing of labour force due to capital constraints;** the construction industry is not only large and volatile but requires tremendous capital disbursements. In Zambia, road construction constitutes a major component of the construction industry. Much of the national budget therefore, is channeled to road construction projects (Source: Chabota.K. Mundiya.M. Kanyuka.M.; 2017; Schedule delays and road construction projects in Zambia; University of Zambia). In the past, it has not been easy for local construction companies to get contracts from the government. This situation is always worsened whenever there is devaluation of the local currency and as much as there is need for certain construction works to take place, there is just no money to fund the works. This spills over to contractors whose income is dependent on government-funded projects. According to the United Nations Human Development report (2014), Zambia is a developing country and with every developing country comes economic activity. There is a strong link between construction and economic activity. Economic

activity suggests demand for construction goods and services. Amongst the construction on demand includes highways, roads, hospitals, housing etcetera (Source: United Nations Human Development report 2014).

**Funding Problems:** Problems with Funding affect the firm's ability to engage and maintain qualified and skilled professional personnel. These personnel include administrative employees (accountants, human resources personnel, middle and top-level personnel, civil engineers, mechanical engineers, quantity surveyors) and non-administrative employees (artisans and tradesmen – fitters, carpenters, masons, electricians). Most road construction companies in Lusaka face payment related problems from their employers, namely the government. The government has difficulty to make payments as earlier explained because of lack of money for capital projects. Delays in payment make it difficult for the contractor to predict and plan their cash flow. Difficulty in predicting cash flow make it difficult to get loans from banks as the companies are considered a high risk. For the firms that do manage to get loans from the bank, the interest is higher due to the high-risk factor. The cost of acquiring capital for these firms is therefore very high. Road construction companies fall in that cluster. Lack of funding for these road construction firms affects their equipment as well, most do not have the full complement of equipment and for some of them, most of their equipment is outdated. Lack of funding makes it difficult for firms to pay their employees' salaries. An example of a construction company that was failing to pay its employees at some point is Flourishing Construction of South Africa. The said construction company had a contract to carry out construction works at Kalungwishi in Chitengi district of Luapula province. As of June 2017, the construction workers at that site had not been paid

for two years. The management of the firm stated that they had been unable to get money from any source for more than two years and were unable to pay salaries. Lack of funding also spill over into failure to procure necessary materials like chipping, gravel, bitumen, water, fuel, gas, oil and other lubricants necessary to carry out works. Failure of procurement of certain material to carry out works leads to failure to carry out works which leads to expansion on project completion timeframes and just basically missing deadlines that have been included in the already signed contracts. Currently, there are a lot of road construction works taking place in Zambia today. Road works taking place in Lusaka are meant to expand selected roads from two to four lane. While some existing four lane roads will be expanded to six lane roads. Twenty percent of the works were promised to be given to Zambian local contractors. (Source: Madvukorwa.T.; (2016) An investigation of the relationship between main contractors and subcontractors in the Zambian construction industry; University of Zambia).

### **2.3 Areas Affected by Depreciation of Local Currency against the US Dollar**

Normally, developing countries depend greatly on imported inputs for their production process. Currency depreciation increases the costs of domestic production by raising the costs of imported inputs. This increase in the production costs shifts the aggregate supply inwards, resulting in contraction of real output. Apart from this supply-side effect, it is also conceivable that exchange rate depreciation can retard aggregate demand of the economy, contradicting the conventional view. Edwards (1986) and Upadhyaya (1999) highlight three possible areas affected by negative aggregate demand of currency changes. These include real balance effect, income distribution effect and trade balance effect (Mansor

H. Ibrahim 2007, sectorial effects of ringgit depreciation shocks).

**Purchase Power Decreases:** The rising price of imports relative to exports caused by a depreciation reduces the purchasing power of consumers and businesses that purchase imports. To judge the combined effect of export and import price changes on international purchasing power, economists use the change in the ratio of export prices to import prices or what is called the terms of trade. Exchange rate variation can adversely affect the ability of a firm to import needed raw materials and therefore reduce manufacturing output.

Fluctuations in exchange rate leads to instability in purchasing power of the firm with projected financial statements unable to achieve set goals (Opaluwa, Umeh and Ameh, 2010). Virtually all researches on exchange rate argue that the type of exchange rate regimes incorporated by a country have implications on the economy through their effects on international trade, output, financial markets, inflation, employment, and investment (Olowe, 2011). Some economists like Opaluwa, Umeh and Ameh (2010) argued that the rising prices of imports adversely affected the nation's ability to import hence greatly affecting the manufacturing sector because unlike raw materials, some of which could be sourced locally, virtually all industrial machinery and spare parts are imported by most developing countries (Opaluwa, Umeh and Ameh (2010), The effect of exchange rate fluctuations on the Nigerian manufacturing sector).

When undertaking a project, construction organisations must take into account the substantial risks related to FOREX fluctuations that affect their business performances. The financial situation of construction organisations

can be adversely affected when the currency of exchange rates fluctuates (Ling and Hoi, 2006). It was found that one of the predominant causes of delay for international construction projects is financial difficulties experienced by the construction organizations which were caused by fluctuations in FOREX (Ismail et al., 2012). Fluctuations in FOREX cause the price of raw materials to increase but they are also the important cause of cost escalations in projects (Fidan and Dikmen, 2011). Therefore, fluctuations of FOREX are a real challenge for construction organisations doing business in overseas markets (Ofori, 2000). However, the impacts of FOREX risk on the construction business are still not well managed (Ehrlich et al., 2012).

Chilongo and Mbetwa (Dr) in their report titled “An Investigation into the factors affecting project performance among contractors in Lusaka District of Zambia” stated that there had been excessive depreciation of the Zambian kwacha against United States Dollar over the last five years, and following excessive depreciation of the Zambian kwacha (ZMW) against the US Dollar, projections for the price of US dollar in terms of the Zambian Kwacha were that the Zambian kwacha was likely to depreciate further against the US Dollar owing to the fact that domestic production, especially in the mining sector whose revenue contributes heavily to stabilizing the Zambia kwacha had fallen. Furthermore, the Zambia government had been running million US Dollar projects in the construction of schools, Health Posts and road infrastructure and most of the inputs and labor were imported from China. However, the medium of exchange for importing these inputs was US Dollar. This compounded with reduced foreign earnings from the mining sector might had contributed to putting more pressure on the US dollar leading to further deprecation of the Zambia, Since China had become one of the major trading

partners of the Zambian economy with most of the finished and intermediates goods being traded in the Zambian market being imported from China (Source: International Journal of Multidisciplinary Research and Development, Volume 4; Issue 9; September 2017; Page No. 04-17).

Humphrey Fundumu’s correspondence in the International Journal of Applied Research of 2015, discussed the ‘Excessive depreciation of the Zambian Kwacha against the US Dollar; firms, households and government. The main aim of the study was to explore possibilities of trading directly with ZMW/YUAN (Zambia Kwacha and the Chinese Yuan) as the Zambian firms and households have high trade volumes with China. The study employed the Multivariate co integration test and Vector autoregressive (VAR) model to analyze the data. The findings indicated that exchange rate variables namely ZMW/YUAN, ZMW/USD, ZMW/RAND and ZMW/Franc do not have long run relationship among each other in the system of equations. Furthermore, short run results in the VAR system also showed that ZMW/USD and ZMW/YUAN do not have short run significant effect on each other. These findings indicate that changes in ZMW/USD do not have long run and short run effect on ZMW/YUAN. The implication for Zambian firms and households is that they can avoid cost of appreciation of US Dollar by trading directly with ZMW/YUAN rather than trading with ZMW/USD and later with YUAN/USD as they import goods from China. Therefore, this called for government to liberalize the transactions in ZMW/YUAN (Source: An Investigation into the factors affecting project performance among contractors in Lusaka District of Zambia, the International Journal of Multi-Disciplinary Research).

One indirect effect of a weakening kwacha is often higher inflation for businesses and consumers.

Because so many goods used in Zambia are imported, higher import prices can lead to higher prices overall. Inflation can hurt construction businesses that can't raise their own costs to keep up with rising costs of supplies and rising wages for employees. Businesses are generally impacted less by inflation if they can pass the costs on to their own customers (Source: [smallbusiness.chron.com/currency-depreciation-affect-company](http://smallbusiness.chron.com/currency-depreciation-affect-company)).

Ashworth (1983) opines that currency depreciation can have an important effect upon the financial consequences of the project design. The calculation of cost-in-use for the design is often done without considering the impact of currency depreciation on construction material prices. In order to factor in the risk of currency depreciation into pre-contract investment analysis, the appraiser thus requires an understanding of the relationship between inflation and construction materials prices. Inflationary effects such as currency depreciation on project appraisal are very significant and could pose difficulties to property developers.

The goal of most countries is the desire to maintain a stable price level of goods and services. This however, appears to be an uphill task given the incidence of inflation presently ravaging developing economies of the world. Inflationary increase in the price of construction materials has been one of the major banes to development and a contributing factor to frequent cost overruns and subsequently project abandonment (Ogeechee, Olusola and Chukwu (2014), An Assessment of the Impact of Inflation on Construction material Prices in Nigeria). Wahab (1985) further established that the prices of construction materials increase steadily over the years due to inflationary trend that led to higher construction costs. These frequent increases give rise to cost overruns, construction

material supply shortage leading to high cost of construction cost within short periods, difficulty in forecasting and planning, and frequent contract price variations, all of which often leads to project abandonment.

Sambasivan, views construction as a large sector of the economy responsible for millions of jobs and a significant proportion of a nation's GDP (Gross Domestic Product) in most countries. When allied to other sectors and industries in materials production and distribution as well as service sector such as transport, finance and the property market, its impact on society and the environment and its influence on the character of the world are tremendous. (Source: 10. Sambasivan M. Soon Y W. (2017); Causes and effects of delays in Malaysian construction industry; International journal of project management Vol. 25).

For the countries that manufacture and export construction materials, devaluation in local currency against the US dollar does not necessarily mean a bad thing for the economy. For example, a devaluation of the Pound against the US dollar will make exports appear cheaper to foreigners and will be more competitive on the international market. This will increase demand for exports and imports will become more expensive, leading to reduced demand for imports. Devaluation in local currency against the US Dollar for a country that is self-sufficient in terms construction raw material manufacture will cause higher economic growth as exports will increase, bringing more cash flow into the country. An example of a country whose economy improved from a devalued currency is China. China's currency was devalued for a period of ten years (1994 – 2004). This was enough time for the country's exports to gather enough momentum. This prompted the other countries that are essentially China's competitors to complain that China was deliberately suppressing her



currency. China has since then allowed the Yuan to appreciate at a moderately modest pace. (Source: Malemuna and Kabubi; 2017 Investigating the impact of depreciation of the Zambian Kwacha against the US Dollar on Zambian businesses, employment and income; ICU).

If, however, the rest of the world is in recession, a devaluation in currency may not be enough to boost export demand. (Source: Tejvan Pettinger Effects of Devaluation of the Pound 2016). ZPPA (2014) stated that there was a notable trend in varying costs of construction from project to project and from one public institution to another, that it had become increasingly difficult to ascertain the true cost of projects and thereby unable to guarantee value for money.

The Zambian road network is one of the country's largest public sector assets. It is therefore essential that this vital asset is managed efficiently and effectively, invariably within a constrained budgetary situation, in support of socio-economic growth and the development of the country. It is perceived by stakeholders that Zambia does not always get value for money in road infrastructure Construction. Industry regulators and public institutions have indicated that there was a notable trend in varying costs of construction from project to project and from one public institution to another, that it had become increasingly difficult to ascertain the true cost of projects and thereby unable to guarantee value for money (Mwiya 2016).

Reduction in market value: According to Tornike (2016), the Lari depreciation reduced the value of construction and the cost of the new spaces, which caused the price decline in the market. This trend, however, was not of mass character as part of the building materials such as armature, concrete,

cement, block, sand and other are locally produced. National currencies depreciated against the dollar in the countries from which Georgian companies were bringing building materials such as, Ukraine and Turkey, and, consequently making local prices competitive. There are cases when Georgian companies paid the Ukrainian and Turkish suppliers in their currency that excludes the rise in prices for products. (Source: Tornike.A. 2016; Construction Business Journal – Georgian Lari)

Effects on import Pricing: In Tornike's opinion, the devaluation created problems only for those companies who had to purchase material at a US dollar rate and have income in the lari. In addition, some materials that are imported from abroad, in dollars, and had their costs increased due to the devaluation of the lari (Source; Tornike.A. 2016; Construction Business Journal – Georgian Lari).

**Changes in Interest rates:** One other key area that's affected when currency depreciates is that of interest rates. Changes in interest rates are also a significant risk for Construction projects. Loans with variable interest rates can be used for long-term construction and financing, as well as short-term needs. Forecasts of future interest rates used to calculate the costs of the project depend on a number of assumptions. At present, it is advisable to adjust the projects based on variable interest rates given the uncertain economic environment, but predictions will never be perfect (Nevitt and Fabozzi, 2000).

Currency depreciation is a fall in the value of a currency in a floating exchange rate system. Currency depreciation can occur due to factors such as economic fundamentals, interest rate differentials, political instability or risk aversion among investors. Countries with weak economic fundamentals such as chronic current account deficits and high rates of inflation generally have



depreciating currencies. Currency depreciation, if orderly and gradual, improves a nation's export competitiveness and may improve its trade deficit over time. But abrupt and sizeable currency depreciation may scare foreign investors who fear the currency may fall further, and lead to them pulling portfolio investments out of the country, putting further downward pressure on the currency. Liability dollarization also increases systemic risk. Should the country experience a sharp currency depreciation, firms with unhedged foreign-currency denominated debt would find it difficult to honor their liabilities, resulting in widespread bankruptcies. (Dell'Araccia, Luc Laeven and Marquez 2011, Financial Frictions, Foreign Currency Borrowing, and Systemic Risk, Boston University).

## 2.4 Effects of Depreciation on Project Completion Time

Project Completion Time; The devaluation of the Kwacha against other major currencies leads to cost escalations for construction projects for Zambia Constructor. The Kwacha's devaluation increases the amount of money required to construct a road projects over and above the agreed budget amount. Cost escalation and time are usually the source of frequent disputes and claims leading to lawsuits due to schedule delays arising from the escalation in costs. According to Mohammed (2016), the legal implications of currency fluctuations (devaluation /depreciation) on the construction industry is explained from a legal perspective. A relevant consideration in the evaluation of construction legal claims in the international arena, and a potentially significant component of any such evaluation, involves costs or losses resulting from movements in value between currencies (Source: Mohammed M.A.B. 2016; The Impact of FOREX fluctuations on construction business performance: An

organizational capabilities perspective; Queensland University of technology)

Mohammed further states that the devaluation of the Kwacha against the US Dollar leads to Cost overruns. Delays on construction projects are a global phenomenon and road construction projects are no exception. They are usually accompanied by cost overruns, which tend to have a weakening effect on clients, contractors and consultants in terms of growth leading to adversarial relationships, mistrust, litigation and arbitration towards each other. This problem is not only unique to developing countries but is occurring in developed countries too. Mohammed gives an example of India where most of their projects are prone to cost escalation which leads to delays which leads to contractors backing out of some projects.

FOREX fluctuations affect an organization's financial structure reduces its profit margins which disrupts any on-going or future projects. It also affects the organization's market share in the long run. FOREX fluctuations affect an organization's capability to deploy resources. These include financial capability and technical capability (availability of key personnel, efficient construction technology) (Source: Mohammed M.A.B. 2016; The Impact of FOREX fluctuations on construction business performance: An organizational capabilities perspective; Queensland University of technology).

A common finding in most studies is that construction cost is affected by a large number of factors such as demand, supply, and time overruns. Considering the relationship between the construction industry and the national economy, it becomes a necessity that the cost of construction be within the means of the average citizen, including construction companies. Compared to

many other industries, the construction industry plays a vital role in the economy and is a significant contributor to economic growth. Construction firms are exposed to three types of exchange risk: these are transaction exposure, economic (operational, competitive or cash flow) exposure and translation (accounting) exposure. Transaction risk takes place when movement in FOREX causes the value of existing obligations to be made worse. Economic risk affects the impact on equity or income for both domestic and foreign operations as an unexpected turn in the exchange rate occurs. Translation risk is connected to assets or income derived from offshore enterprises. Foreign exchange risk management is therefore important for firms that frequently trade in international markets either as multinationals or just involved in imports and export trade. (Source: Wambiri. G.N 2015; Effect of exchange rate fluctuation on project budget: A case of Prime K at the University of Nairobi; United States International University).

Wambiri further explains economic risk. For firms that import product in foreign currency (US Dollar), chances are that the cost versus the sale figure is higher in the long run. The changes that occur in the foreign exchange rate will affect the competitive position of such an organization. Profits will therefore dwindle when the cost currency (US Dollar) appreciates against the local currency (Kenyan Shilling). In such scenarios, it is very expensive to purchase material (raw material and equipment). Such occurrences affect expected future cash flows and the value of the firm in a negative way. The cash flow of the organization is also affected. (Source: Wambiri. G.N 2015; Effect of exchange rate fluctuation on project budget: A

case of Prime K at the University of Nairobi; United States International University).

**Escalation of Cost:** As stated earlier, the Zambian government does, at times, fail to pay construction companies due to cost escalation in some of the projects that go beyond the initial budget. Cost escalation refers to an increase in the amount of money required to construct a road project over and above the original budgeted amount. Cost escalation occurs when actual costs exceed what was in the original estimation or bill of quantities (BOQ) submitted before the projects began. One such case is the one where Road Development Agency (RDA) delayed to pay Raubex, a South African based road construction and rehabilitation company. Raubex halted construction on the R1.2 billion South African Rand Link 8 000 Greenfields road construction contract in Zambia because of the Zambia Road Development Agency's failure to pay R115.5 million South African Rands owing on the project, according to South African Media. Rudolf Fourie, the chief executive of Raubex, confirmed that construction on the project was halted to prevent exposing the group's balance sheet to debt it could not control". This particular case, already affected the project's completion time frame as the contractor needed payment to run their day-to-day activities, purchase material and pay their workers. With no funding, none of that could be done. Below is a table showing road construction projects in Zambia that have gone beyond their estimated completion time due to cost escalation arising from inflation which arises from devaluation of the Zambian Kwacha against the US Dollar. (Source: C. Kaliba: 2016; International journal for project management).

Fig2.1: Performance of selected projects in Zambia

Project Name	start Date	original Finish date	Revised Finish date	Original Contract Sum US\$ million	Final Contract Sum US\$ million	Remarks
Nyimba - Katete	Oct-03	Oct-04	Jul-05	4.90	5.88	Beyond budget
Lusaka to Mongu	Jan-03	Jul-05	On going	24.25	25.33	Beyond schedule
Kasama-Luwingu	Oct-01	Nov-03	Nil	35		Beyond budget
Mpika-Kasama	Jun-01	Dec-02	Nil	2.38		Beyond schedule
Mpika-Muwele	Jun-01	Dec-01	Nil	1.3		Beyond schedule
kashikishi-Lunchinda	Jun-01	Jan-01	Nil	37.5		Failure to commence
Chambeshi-Chinkobo	Feb-01	Aug-01	Nil	1.35		Incomplete work
Isoka-Muyombe	Dec-00	Mar-02	Aug-02	4.00	5.00	Failure to commence
Chinsali-Nakonde	Apr-99	Jul-00	Nov-00	2.00	2.00	Beyond budget
Mpika-Chinsali	Mar-99	Mar-00	Nov-00	1.95	1.95	Beyond schedule
Mutanda-Kasempa	Feb-97	Feb-99	Dec-00	3.84	6.45	Beyond schedule
Choma-Namwala	Nov-94	Feb-98	Nil	2.50	8.00	Beyond schedule
Luanshya-Mpongwe	Nov-94	Jan-97	Dec-01	2.53	3.63	Beyond budget

*Source: Project progress reports 23 and 24*

## 2.5 Factors Causing Construction Companies to Import Raw Materials

Only very few construction materials are locally available in developing countries, and so they rely on imported materials in general. The only available materials locally are: ordinary cement, sand, aggregates, timber, bricks and glass. Local supplies cannot wholly meet the demand of the local construction industry, therefore, these materials, along with other construction materials, are imported to meet the demand, mainly from China. This takes longer time for sourcing, procuring and transporting of the materials. With higher demand of materials, for example during the construction of national housing projects, which involve the construction of hundreds or thousands of houses, local suppliers experience shortages of

their stock. Saudi Arabia also experienced project delays due to similar causes during their booming construction industry in 1990s. The quality of materials can also delay their usage on site if the materials do not meet the standard or contain defects. The defect can be due to improper handling during packaging, shipment or delivery. Some materials may have minor defects that can be repaired, but some materials may have major defects that cannot be repaired and therefore cannot be used at all, e.g. broken sanitary appliances. This happened with one of the interviewed companies, when they ordered a manufactured door from Malaysia. The procurement/ordering process was made online, where the items were viewed through the manufacturer's website, and appeared to be nice products with good quality. However, when the

doors arrived on site, they were found to be of poor quality with holes throughout the door panel, possibly due to insects or termites. The interviewed company made a report to the supplier within three days of receiving the doors, with proof of defect to arrange for compensation. This consumed more time due to the need to wait for the new doors to arrive. If it is already the time to install the door, then there is no choice other than to wait for the next delivery (Source: Rahman M, Yap Y H, Ramli N R, Dullah M A and Shamsuddin M S (2017), Causes of shortage and delay in material supply: a preliminary study University Technology Brunei),

**Quality & Scarcity of material;** Kampamba Shula (2015), wrote that Zambia is mostly a commodity-based economy with a lot of business people importing most of their tradable for sale. Hence when the kwacha depreciates the incentive for local business people to raise their prices is high in order to meet the increase in the cost of imports due to the depreciation of the Kwacha (Kampamba Shula (2015), The Inevitable Depreciation of the Zambian Kwacha; Causes, Consequences and Policy ; Information and Communications University).

Maemuna & Kabubi (2017) also noted that; Import input costs are high because of reasons other than merely the exchange rate. Zambia can review its import tariffs on inputs and even introduce tax relief for importers of inputs for manufacturing which had a higher return on tradables as the sectoral price indices indicated that the relative return was higher from manufacturing than agriculture. In short, policy should focus more on diversifying into manufacturing while looking for ways to increase productivity in agriculture. Unless the export base expands the depreciation of the Zambian Kwacha, however moderate was inevitable. As long as policy makers continued to use the exchange rate as a policy instrument to

stimulate diversification instead of using better tools, this policy would be an exercise in futility, however moderate. The continuous depreciation in Kwacha increased inflation of the country. In such situation Bank of Zambia had very less room to cut policy rates. No cut in policy rate added to the borrower's anguish who were eagerly waiting to get rid of high loan regime. The adverse effects of kwacha depreciation were likely to be offset by gains in export performance (Source: Malemuna. E and Kabubi .M ;2017; Investigating the impact of Kwacha depreciation against the US dollar on Zambian businesses, employment and income; Information and communications University).

A journal by Kaoma.C. revealed that the business community in Kasama district had expressed concern over the depreciation of the kwacha against notable foreign currencies. Kaoma stated that contractors in Kasama were concerned about the current status of the kwacha value against the dollar. This was worrying, especially for traders who bought materials outside the country. Kaoma stated the local currency has been on a weakening trajectory trend, which is increasing the cost on imported goods. He explained that with the kwacha depreciating further against the US Dollar, most people will shun the importation of goods as it was becoming expensive for them. He further stated that, if measures were not put in place to stabilize the currency, a number of businesses would suffer as Zambia is dependent on international trade for its economic growth. (Source: Kaoma .C 2016, Crafts skills gaps in the construction industry in Zambia)

**Availability of skilled labor;** Charles .C Kaoma in his research "Crafts skills gaps in the construction industry in Zambia" noted that; the Construction industry in Zambia had been experiencing shortage of crafts skills which is recognised as a constraint to national competitiveness (AfDB, 2013). The

construction industry grew rapidly in the period between 2005 and 2015, with Gross Domestic Product (GDP) estimated at US\$ 26.8 billion in 2014 (World Bank, 2014). The good economic growth rate in the last decade; recorded a construction boom that has exposed crafts skills gaps because of increased infrastructure development in terms of construction of roads, schools, hospitals and housing needed to meet the demand of the growing population in Zambia (CSO, 2012). The Technical Vocational and Entrepreneurship Training Authority (TEVETA) also has low capacity to train many eligible candidates in construction related careers. TEVETA is a statutory regulator, for both public and private training providers offering technical and vocational education in crafts skills developments in Zambia. As a result of this, all training providers, regardless of ownership, are required by law to register with TEVETA (TEVETA Act No.11 of 2005). The number of both craft persons and technicians graduating from the TEVETA accredited schools cannot meet the demand for the industry. Labour force survey at national level indicated that only 6.8 percent of working population received skills training (CSO, 2012). There are other reasons that could have contributed to the shortage of artisans. The current young generation of graduates from colleges are unwilling to do strenuous jobs in construction, but rather do other jobs which give better salaries because construction is associated with poor working conditions and low wages, though it demands high input of person hours (ILO, 2012). (Source: Kaoma .C 2016, Crafts skills gaps in the construction industry in Zambia).

In general, the foreign construction companies employ managerial and supervisory staff from their respective countries, while unskilled labour is largely sourced from the general vicinity of the project and is employed on an informal basis. The

large foreign construction companies do not subcontract works to smaller domestic contractors unless required to do so on a policy basis for road construction projects. Building construction work is not subcontracted due to a perception that domestic contractors cannot meet the required work standard or deadlines.

**Availability of machinery;** Very few businesses supply or rent out large-scale construction machinery such as motor graders, loaders, large concrete mixers and compactors. Due to the scarcity of businesses that rent large-scale construction machinery, rental prices are inflated. With regards to purchasing equipment, large-scale machinery is imported on a per order basis and almost exclusively for large-scale contractors. Rentals for common small-scale machinery, tools and equipment that are most appropriate for Micro, Small & Medium Enterprises building contractors are not available as businesses that rent this type of equipment do not exist (Zambia Construction Analysis Report Nov 2014, An Analysis of Zambia's Building Construction Market System).

Abbott (1985) studied the technology transfer potential of the operations of foreign contractors in developing countries. Strassman and Wells (1988) note that Japanese and South Korean contractors benefited from technology transfer from their US counterparts. Moavenzadeh and Hagopian (1984) see foreign contractors as the sole factor influencing the development of the construction industries of poorer countries. This model is criticized by Ofori (1996) who notes that the objectives of foreign construction enterprises and host developing country governments differ. Raftery et al. (1998) suggest that in the long term, the gap between local construction firms and their foreign counterparts in technology, finance and management knowhow, could be filled through technology transfer, for example, via joint ventures



among the two groups of firms. However, several authors have mentioned the difficulties involved in technology transfer, including the tendency of foreign contractors to adopt strategies which do not support host countries' effort to develop their industries (Cockburn, 1970). Abbott's (1985) and Carrillo's (1994) works show that the foreign firms are not keen to effectively transfer their technology since they believe that it means they would be nurturing their future competitors. Ofori (1996) noted that both local and foreign firms benefit if systematic efforts are made by the latter to develop the former.

## 2.7 Challenges & Risks Faced by Construction Industry

The depreciation of the kwacha against the US dollar affects local contractor as most material used for road constructions are imported into the country. The Marshall-Lerner model stated that devaluation or depreciation of currency makes export relatively cheaper and Import relatively expensive. Abba Lerner further explained that if the demand for export and import of the goods in a country is relatively price elastic then devaluation would positively affect the terms of trade (Lerner, 1944). Sepasgozar et' al (2015) also conducted a survey to determine and evaluate the relative importance of the significant factors causing delays in Hong Kong construction projects. They analyzed and ranked the main reasons of delays according to different groups classified on the basis of the role of the parties in the local construction industry (i.e. whether clients, consultants or contractors) and the type of projects. Results indicate that the five principal and common causes of delays are: economic challenges which included inflation, 'poor site management and supervision', 'unforeseen ground conditions', 'low speed of decision making involving all project teams',

'client-initiated variations' and 'necessary variations of works.

Wahab further classified that most challenges faced in the construction industry as being caused by; Shortages of locally manufactured building materials, the imposition by government of excise duty on locally manufactured building products or high import duty on imported building materials, Government fiscal policy determines interest rates charged by the bank and other finance houses, Political instability, Excessive reliance on importation of materials for construction works and construction equipment, and Government Restrictions.

**Economic Risk:** Economic risk affects the impact on equity or income for both domestic and foreign operations as an unexpected turn in the exchange rate occurs. Concerning economic risks, El-Sayegh (2008) notes that inflation and sudden price changes represent the most important economic risks in countries. The fluctuation of the currency, especially in the case of international projects is an import risk to also consider. Recently in many countries the construction of privately financed infrastructures has been based on foreign capital, thus running the risk of devaluation of local currency. International lenders rarely take that risk, preferring to have their payments in foreign currency. In the past, public companies or governments have accepted the currency risk, but now, with the growing demand for private financing, the risk of depreciation of the currency often lies in the promoter of the project and ultimately on the consumer because the lender is not willing to assume it

Wambiri further explains economic risk. For firms that import product in foreign currency (US Dollar), chances are that the cost versus the sale figure is higher in the long run. The changes that

occur in the foreign exchange rate will affect the competitive position of such an organization. Profits will therefore dwindle when the cost currency (US Dollar) appreciates against the local currency (Kenyan Shilling). In such scenarios, it is very expensive to purchase material (raw material and equipment). Such occurrences affect expected future cash flows and the value of the firm in a negative way. The cash flow of the organization is also affected. (Source: Wambiri. G.N 2015; Effect of exchange rate fluctuation on project budget: A case of Prime K at the University of Nairobi; United States International University).

**Excessive reliance on importation of materials and Equipment:** This is another major challenge faced by the construction industry. An article in the Jesuit Centre for Theological Reflections (JCTR) in 2014 with the heading “Road making cost high due to imported materials” observed that the Road Development Agency (RDA) had attributed the high cost of road construction in Zambia to the country dependency on imported raw materials stating that the road construction equipment are imported and costly to acquire leading to the high cost of roads construction in the country. For example, importing bitumen from Durban in South Africa involves spending a lot of money on transportation and it becomes worse when the kwacha is not faring well. The report further stated that RDA was counting on Indeni Petroleum Refinery in Ndola to expedite construction of a bitumen plant to reduce the cost of bitumen.

Most of the material used in the road construction industry such as bitumen and sulphur are mainly imported to Zambia with payments being made in US Dollar. Hence any depreciation in the kwacha will affect the cost of importation leading to high cost of production and in many cases delays due to shortages in material. Henry A. Sawchuk in his research “The Impact of Materials and Fuel

Shortages on Highway Construction and Maintenance” states that varying degrees of shortages of materials and fuels was constantly affecting highway construction and maintenance, with resulting uncertainties on prices and dates of deliveries of these items. Jesuit Centre for Theological Reflections (JCTR) in 2014 observed that the increased prices and demand for oil and other petroleum was another reason for Zambia Kwacha fall. Zambia had to import bulk of its oil requirements to satisfy its local demand, which was increasing every quarter of the year. The domestic demand for oil was increasing which caused the price of the oil to increase in the international market. The demand for dollar increased, as we had to make payments to our suppliers in dollars. (Source: JCTR, 2014).

African experts attending the 10th African Economic Conference in Kinshasa called on African countries to reduce their excessive dependency on raw material exports and imported consumer goods, as the only viable way to reduce poverty and social inequality on the continent. The experts issued this recommendation during an extremely productive session entitled “Inclusive Growth and Structural Transformation for Poverty Reduction in Africa”. During a presentation entitled “Dependency on raw materials and human development”, Burundian researcher Janvier D. Nkurunziza pointed to Africa’s excessive dependency on its raw materials (ores, oil and agricultural products). This situation, which Nkurunziza described as “chronic dependency”, is a result of the economic model left behind by the occupying colonial powers, a model designed to make Africa a reliable source of raw materials for their industrial economies. “This dependency has long been an observed phenomenon, but we have never managed to reverse the trend,” he added. (Olivia N. Obiang (2015), Africa must reduce its dependency on raw material exports and imports).

**Government restrictions.** Certain materials (e.g. timber) need permit approvals from government departments before placing import orders, which may be time-consuming if not planned well in advance. Permit approvals mainly deal with the declaration of type, source, quantity and quality of materials to be ordered. This is to ensure that only certain materials are imported, and exactly the declared type and quantity of materials are imported. The economic planning control policy of the country also prohibits importing cheaper materials and selling the same at higher prices. Therefore, the importing companies have to specify correctly the type of material in order to receive approval of their permits. If the permit is not granted, more time is needed to get a new permit approval, resulting in to delayed delivery of materials to site (M M Rahman et al 2017, Causes of shortage and delay in material supply: a preliminary study). The imposition by government of excise duty on locally manufactured building products or high import duty on imported building materials is a common challenge faced by construction companies. In Zambia a small number of goods may be imported duty-free. These include medicines, pharmaceuticals, veterinary supplies, medical equipment, computer parts, and chemicals in bulk, fertilizers, and seeds. Most goods fall into one of three tariff bands: 0-5% (Capital Equipment and Raw Materials); 15% (Intermediate Goods); or 25% (Finished Goods). Duty on productive machinery for agriculture, aquaculture, solar energy and mining is zero percent (Source: ZRA Zambia Import tariff). It goes without saying that an increase in interest rates will mean that construction projects will become more expensive.

**Government Policies:** Government fiscal policy in determines interest rates charged by the bank and other finance houses presents some clear risks to the construction industry. Construction

companies may need to consider realigning their pricing for projects to build in the increased costs from higher interest rates, while ensuring the organisations has enough money or working capital to function, without putting itself at risk. Most construction companies tend to operate with limited cash flow leaving them with little flexibility when interest rates rise: the additional cash needed to repay loans can be non-existent. This could cause a host of issues. Companies may find themselves having to self-fund or delay paying their receivables. Some contractors will also put off investment and expansion plans, further slowing the growth of the company and impacting on the industry as a whole (Jugdeep Chaggar (2017)).

The exchange rate is not a variable that is easily addressed by changes in legislative policy. Nevertheless, although usually not the primary target, the dollar's international value can be affected by decisions made on policy issues facing the 112th Congress, including decisions related to generating jobs, raising the debt limit, reducing the budget deficit, and stabilizing the growth of the federal government's long-term debt. Also, monetary policy actions by the Federal Reserve, over which Congress has oversight responsibilities, can affect the dollar (Elwell C. K (2012), The Depreciating Dollar: Economic Effects and Policy Response, Congressional Research Service)

**Political Instability:** Political instability is another challenge faced by the Construction Industry. The construction industry during troubled political instability is associated with severe conditions of uncertainty, and challenging conditions. The main challenges are the increasingly reliance on the informal sector, and diminishing formal sector. The formal should gain ground to have a greater contribution in the construction development. It is

recognised that the informal sector contributes to the formal sector; it maintains economic activity and provides low-income jobs and a better distribution of wealth. The existence of the informal sector is not the problem; it is ignorance of its size and socio-economic impact. The excessive informal sector activities are becoming one of the main constraining factors and causing difficult and challenging conditions that become common features in the developing countries. The reason is that informal sector in construction is not well understood and difficult to measure and is thriving both in the developed and developing countries (Sultan and Alaghbari 2018, Political instability and the informal construction sector in Yemen).

### **Corruption in the Construction Industry:**

Corruption is another Challenge faced by the road construction industry in Zambia. The construction industry is the backbone of economic growth in many developing countries. Given the magnitude of funds that are funneled annually into infrastructure projects, scope for corruption and profiteering are high. Governments need greater tools to audit and monitor public spending and better manage public-private partnerships in the construction industry. Corruption, defined as the abuse of power for private gain, comes in various forms. This includes embezzlement, bribery, nepotism, influence peddling, theft of public funds or assets, fraud, forgery, causing financial or property loss, false accounting in public affairs and tax evasion. In developing countries, corruption is considered to be one of the most severe frictions impeding economic growth. In fact, the OECD estimates that on an annual basis, approximately 150 million USD is lost through corrupt and inefficient practices in Africa alone. At the center of these debates on corruption is the construction industry, which accounts for about one-third of gross capital formation (Colonnelli E (2017),

Corruption in Construction: a case study of developing countries. Stanford University). The Zambia corruption report indicated that; the development of Zambia's business environment is hindered by corruption and a weak institutional framework. Companies encounter red tape and rampant bribery in all business operations, including company registration, obtaining a construction permit, setting up utilities, and paying taxes. As a result of the inefficient and corrupt judicial system, foreign investors' property rights are not accurately protected nor enforced. In addition, international trade is impeded by pervasive corruption and crime in Zambia's customs. Companies regularly pay kickbacks and bribes in the tendering process for government contracts.

The Zambian construction industry has continued to make headlines, all for the wrong reasons. If our media reports and our parliamentary leaders are to be believed, then our industry is besieged with vices of runaway contractors, shoddy workmanship and poor supervision by our consultants. What is even more worrying about the above negative phenomenon is the fact that the Zambian society now seems to have lost all confidence in their own local contractors. Indeed, there are some "bad eggs" among Zambian contractors, just like "bad eggs" among our foreign contractors. The apparent loss of confidence by the Zambian society including the Government itself has meant that foreign contractors have continued to get local construction contracts at the expense of our local contractors, thus contributing to the massive externalizing of our hard-earned foreign exchange. The continued utilizing of foreign contractors and in some cases consultants, has also meant that we are "importing unemployment" from other countries. We are having to import construction expatriates in areas such as bricklaying, plumbing, grader operator and site



foremen, and yet thousands of our own trained citizens in these areas of construction specializations are walking our streets (National Construction Council, Volume 7, May 2006, Construction News).

## Mitigating of Risk on Construction Projects

Risks in construction projects can be defined as the probability of an event that impairs the viability of the project. This probability, perhaps, is higher than in other industries. In the construction sector, as elsewhere, various risks that affect business can be identified. Risks are more widespread in the construction industry than any other industry. The same can be said about the Zambian Construction Industry (ZCI) where contracting parties have repeatedly suffered the consequences of failure to manage risk such as design failure, cost overruns and delayed completion. This makes the management of risks in infrastructure development a very important factor to consider. This is important given that the construction processes involve diverse parties whose aim in a project may not be the same. Unfortunately, in mitigating risks in Zambia, clients usually transfer risks through the traditional risk management process (design, bid and build), particularly in the public sector. Thus, all contracting parties should be concerned with risk management because risks have far reaching consequences beyond the party that fails to mitigate them. Consequences usually include poor project performance characterized by time and cost overruns, poor quality, and tensions. (Reddy A. S (2015), Risk Management in Construction Industry, Sheffield Hallam University, UK).

Mohammed (2016) further states that construction projects are a high-risk business. He also states that there is need for proper insurance, cautious planning and management and hedging to overcome issues that have been caused by FOREX

risk (. Mohammed M.A.B. 2016; The Impact of FOREX fluctuations on construction business performance: An organizational capabilities perspective; Queensland University of technology).

According to Anton, Rodriguez and Lopez (2011), risk in a construction industry can be classified as external, internal and financial. The external risks are not directly related to the construction process; however, they have a high weight in relation to the achievement of the project. They can be classified into the following groups: political, socio-cultural, economic, natural and other (El-Sayegh, 2008). Within the political risks are threats of war, strikes of workers, changes in legislation, corruption and bribery, delays in approvals. Internal risks in large construction projects on the other hand are usually related to the control of the management team. According to Aleshin (2001), they have their origin within the project. (Source: Antón A J M, Rodríguez G S and López A R (2011), Financial risks in construction projects, Universidad de Alcalá, Madrid, Spain). These Risks can be managed by;

**Currency Hedging;** Most Foreign construction companies tend to have loans in foreign currency from there originating country or international banks while earning revenues in domestic currency. Exporter companies have a risk to lose part of their profit if domestic currency appreciates and vice versa is true for importer companies, they would lose if domestic currency depreciates. Exchange rate risk makes the economic planning process for businesses more difficult and financial outcomes uncertain. Construction Companies facing exchange rate risk exposure have to reduce or eliminate foreign exchange risks in order to ensure profitability. This can be done through hedging. The same financial markets that make foreign exchange rates go up and down also offer



a solution for the problem. You can hedge your foreign exchange risk by buying a spot contract. These contracts fix exchange rates against fluctuations. You might not be able to benefit from positive swings, but you won't get hurt by a negative swing. The downside to these contracts is that you have to pay for them, so you'll effectively be guaranteed to lose a little money. So, any business that has dealing in overseas market is open to such Currency or more popularly known as Forex exposure. There may be other kinds of exposure including commodity risk, Interest rate risk, wage inflation etc. Un-hedged exposure of FX can affect the balance sheet or profitability, which can create cash flow and operational issues. Hedging reduces a firm's exposure to unwanted risk. This helps in sustaining profits, reducing volatility and ensuring smoother operations.

**Implementation of a Risk Identification Process;** Implementation of risk identification process should be done according to the demand of the situation in that particular case. We can even say that it requires a lot of time and constant effort to achieve even then one cannot deny the possibility of missing out any probable risk. It is hard to identify the entire risk factor one after the other. A general level risk which can be taken as common risk in all projects can be identified taking previous examples into consideration which can prove to be time saving as well as reference for the new project. In risk assessment it is crucial to identify the different attribute of risk, such as if it is specific in nature or general, dynamic or static, etc. This is due to the fact that risk allocation necessitates to understand the attributes of risks, thus to assign them to those who can treat them accordingly. According to the attributes the risk classification is done. Williams (1995) observed that it is primarily necessary to identify each risk as a foremost step in risk management and perhaps the most difficult one. (Reddy A. S (2015), Risk

Management in Construction Industry, Sheffield Hallam University, UK)

Not all risks should be associated with negative results, because although most of the time this happens, risks can also mean opportunities. From the moment that the objectives of the construction project are set, time, cost and quality represent the most important risk factors to consider. The main problem is that these risks are not always dealt with properly by the construction industry (Mills, 2001; Thomson and Perry, 1992). Risk management is a process of identifying, analysing and responding to risks throughout the lifecycle of a project to control, reduce or eliminate those risks (Edwards and Bowen, 1998; El-Sayegh, 2008; Zhao and Li, 2010). The total elimination of risk in the construction sector, is almost impossible, and the objective should be to transfer them from one party to another through contract clauses (Andi, 2006; Mak and Picken, 2000). Thus, to reduce risks, it is very important first to identify them (Godfrey, 1996; Hayes et al., 1986; Williams, 1995). Once this has been done, it is possible to adopt actions to address it (Kayis and Ahmed, 2007) and to allocate it to various parties in order to keep it under control and to prevent possible negative consequences (Bunni, 1997). Risk management might also be useful in order to maximize profits (Baker et al. 1999). However, the benefits of risk management have not always been understood by this sector (Flanagan and Norman, 1993; Raftery, 1994; Ward et al. 1991). In the construction sector, as elsewhere, various risks that affect business can be identified. However, in this particular area there seems to be greater risks as a result of the involvement of multiple factors such as different economic factors, contracting parties, multiple suppliers, designers, etc., all linked to the socio-cultural, political and economic differences of the place where the project will be undertaken. (Reddy

A. S (2015), Risk Management in Construction Industry, Sheffield Hallam University, UK)

**Risk Transfer;** Risk is shared with others and different types of sharing include performance incentives, contractual shifting, warranties, bonds, insurance, etc. Risk transfer along with its results against the rights and responsibility by the insurance (subcontracting, technology transfer, etc.) in the form of transfer to the other party, so as to reduce their risk. For the probabilities and large potential losses, the insurance risk transfer countermeasures the risk. The insurance risk transfer includes control, transfer of insurance and financial insurance. Controlling the insurance transfer, transfer is the loss of legal responsibility, by the terms of the contract to eliminate or reduce the loss of the assignor to the assignee liability and responsibility of third-party damage. Financial type means transferring by the terms of the contract of insurance involving foreign money compensation which happened or nearly to happen. The insurance risk transfer means the implementation by means of contract transfer; transfer contract object may be related with owner, general contractor, subcontractors and suppliers. During contract both sides carefully identify that both parties bear which kind of responsibility, to prevent unreasonable risk transfer, such as the owner transfer financial risk to the contractor. (Song Yan (2014), Analysis of Risk- Response based on Railroad Construction Project, Harbin Engineering University P.R China).

**Charge more for the cost of the Project;** Studying a country's currency will give you a sense of how much currency risk you're taking. If you know, for instance, that a given country's currency fluctuates by about 5 percent per year relative to the dollar, you could simply charge 5 percent more for your product in that country. By charging 5 percent more, you'll get your baseline price if the

currency drops 5 percent, and if the currency drops less than 5 percent, stays flat or increases, you'll get an extra profit. The risk to this strategy is that it won't work if exchange rates swing more than you expect. It also won't work if you don't have room to subtly raise your prices in a given market. An effective pricing strategy generally balances your desire to earn a profit with the perception your targeted customers have about the value of your goods or services. Overhead costs sometimes get overlooked by the market when assessing whether a price is fair relative to perceived costs you pay to make or acquire goods. Unless you pass along some overhead costs, however, a small business may have a hard time generating a profit.

The simple reality is that you must charge customers for overhead if necessary, to achieve profit. If your fixed costs make it virtually impossible to generate operating profit and net profit, you must weigh the costs into your prices. Weigh options for minimizing overhead or finding lower rates on certain elements to avoid pricing your products above what the market will bear

## Chapter Summary

The literature reviews highlighted writings from writers who gave their opinions on currency change from a global, regional and local perspective. Generally, a devaluation in currency has the same effect on construction companies in other parts of the world. The construction companies in Nigeria, South Africa, and Egypt all import their raw material, mostly from China and they pay for their imported raw material in US dollars. When devaluation in local currency occurs, they all seem to be experiencing the same effects, in terms of borrowing from the banks (access to capital), high costs of material leading to high project costs and in some cases project abandonment. A devaluation in currency also leads

to several uncertainties in supply and cost of materials, obtaining interim payments and procuring work. All these effects eventually do spill over to a very sensitive area in every economy worldwide, that is jobs. People end up losing employment since the companies they work for try to cut down on costs due to hikes in project costs. Extensive studies have been done on the effects of foreign exchange (FOREX) fluctuations on various sectors in the economy. Most of these studies however, were based on developed countries. A few studies have been carried out in developing countries like Zambia. There is therefore a gap as far as FOREX exchange fluctuations and its effects on Zambian construction industries.

### III. CHAPTER 3:

#### RESEARCH METHODOLOGY

##### Introduction

The study analyzed the impact of Zambian Kwacha depreciation against the dollar on road construction companies in Lusaka. In achieving this, a survey method of data collection was adopted and the tool used was a questionnaire. This chapter contains the following sections: Research design, sampling technique, sample size, target population, instruments of data collection. The ethical considerations and a Gantt chart are also included.

##### Research Design

This research will use a survey research design. A survey gathers data at a particular point in time, with the intention of describing the nature of existing conditions. Standards are identified against which existing conditions can be compared to determine the relationships that exist between specific events. When using survey design, variables can be observed without manipulation.

The survey was selected to be used in this research because of the issues that were raised in the research questions. The survey will be incorporated with a case study in order to complement the survey in that it adds more understanding by observing what is actually practiced in the construction industry in Zambia.

Furthermore, a representative selection of a population can only be targeted by a survey. In the case of this research, the survey method will be carried out using a questionnaire.

##### Target Population

The target population for this study includes: Zambian construction firms in Lusaka and their corresponding building professionals, these include: architects, builders, quantity surveyors and structural engineers. Employees of these construction firms will also be included in the target sample. This particular population was selected because the individuals and organizations mentioned have similar characteristics in that they are all in the construction industry.

##### Sample Size

A sample is a subset of a population (Source: Research Methodology; Information and Communications University). A sample enables the researcher to test all the individuals in a given population. A sample of fifty questionnaires will be distributed to the selected respondents. The researcher decided on this sample size because Lusaka has a total of forty-seven construction companies and much as the number of companies is lower than the sample size, for some companies more than one respondent will be interviewed. Additionally, fifty is a good enough representative of the population from which it will be drawn. The breakdown of the sample size will be as follows: ten architects, ten builders, twenty quantity surveyors and ten structural engineers. The

researcher decided on twenty for the quantity surveyors because quantity surveyors are the ones who handle construction costs and commercial management throughout the entire life cycle of any construction project. They are therefore in a better position to understand and explain fully what the implication of devaluation in currency has on the project itself.

## Sampling Technique

The researcher plans on employing stratified random sampling technique which is a probability sampling to select the respondents for the study. The researcher chose this sampling techniques because the main area of interest for this research is road construction companies and their corresponding professionals. It is therefore only essential to pick a sample with those characteristics from the entire population in Lusaka. The researcher therefore only wants to highlight a specific subgroup within the population. This subgroup includes architects, builders, quantity surveyors and structural engineers. The researcher also feels that this sampling method will provide a greater precision than any other sampling method.

To create a stratified random sample, the researcher will have to follow the following steps:

Step 1: Define the population: For this research, the population is the building professionals in Lusaka. They will therefore be expressed with the letter N.

Step 2: Choose the relevant stratification: For the purposes of this research, the strata to be used will be building professionals in Lusaka.

Step 3: List the population: All the members of the population in the research will need to be identified.

Step 4: List the population according to the chosen stratification: in this research, a consecutive

number will have to be assigned to each of the members of the stratum. As a result, the research will have four lists, each profession will have to have their own list.

Step 5: Choose your sample size: The sample size chosen for this research is fifty, which will be represented by the letter "n". The number fifty has been chosen as it reflects a limit on the budget for the research and also the time in which to distribute questionnaires.

Step 6: Calculate a proportionate stratification: This is done to ensure that the number of units selected for the sample from each stratum is proportionate to the number of professionals i.e. builders, quantity surveyors, architects and structural engineers in the population. To achieve this, we will have to multiply the desired sample size(n) by the proportion of units in each stratum.

Step 7: Use a simple random or systematic sample to select your sample: We now use simple random sampling or systematic sampling to select the building professionals from the four lists.

(Source: Fundamentals of Research Methodology and Statistics – Yogesh Kumar Singh – New age International Publishers)

## Instruments of Data Collection

Many tools are available for use during a research project. Some, however, are only useful in certain situations, more than others. These are: qualitative and quantitative methods. These tools differ mainly in the following ways: Their analytical objectives: these are what they aim to achieve. They also differ in the types of questions they pose: these are either open ended or closed ended questions. The tools also differ in the type of data collection instruments they use; some use surveys such as questionnaires, interviews, focus groups

and some use experimental methods. Tools also differ in the forms of data they produce and the degree of flexibility built into study design.

For this research, the researcher will use both quantitative and qualitative instruments. This is because some of the data collected will deal with quantities, values or numbers, thereby making them measurable. Some on the other hand will deal with quality (descriptive rather than numerical). Qualitative in form of questionnaire and interviews for collecting information and quantitative for analyzing the data. The questionnaire will have closed-ended questions. The interviews will provide the researcher with the opportunity to ask follow-up questions based on the topic to provide clarity of the responses given by the respondents.

## Limitations of the study

Limitations are shortcomings, influences or conditions that the researcher cannot control. Stating the limitations of this study will allow the reader to understand the conditions under which this research will be carried out. It also allows the researcher to have a holistic understanding of the research. This study will be limited by financial constraints. Expenses incurred during the study will include stationery costs, printing and binding costs as well as internet. There is also an issue of time in which to carry out this research as the researcher has a full-time job and family, among other things. To overcome the limitations, the researcher outsourced funds to cover all the costs that were needed to be covered. To handle the timing factor, the researcher has come up with a schedule which aids in balancing time for work, family and carrying out the study.

## Ethical considerations

To avoid any misunderstandings about the research and its purpose, the respondents will need to be

adequately briefed about the study before any form of questioning is to begin. Respondents can then be interviewed after they grant consent. The respondent's confidentiality will have to be maintained. Anonymity will be granted if a respondent request for it.

Below are the most important principles that relate to ethical considerations of my study (Bryman. A. Bell.E. 2015; Business research methods – Paperback; Oxford):

Respondents in my research should not be subjected to any harm whatsoever i.e. The researcher has to be very sensitive toward the respondent(s) and ensure they do not inflict harm, either psychologically, emotional, social, physical and economical

The dignity of research participants should be prioritized

Full consent should be obtained from the participants before the study: The researcher has to receive permission or informed consent from the respondent before any form of questioning or, in some types of research, experiments can be done.

Respect the privacy of the participants of the research. There should also be anonymity of the respondent(s).

Data from the research should be treated as confidential. It should be strictly on a need to know basis.

There should be no exaggeration of the aims and objectives of the research.

Declare all affiliations, sources of funding and conflicts of interest.

Be honest and transparent at all times.



Avoid biasness and misleading information when presenting your research data.

## CHAPTER 3 SUMMARY

This chapter focused how the research will be conducted. The research design that the researcher opted for has been explained including sampling technique, sample size, target population and data collection instruments to be used have also been explained. The researcher has also touched on the ethical considerations to be mindful of while conducting the study. The Gantt chart which has given an idea of when each activity of the research will be conducted and for how long has also been included.

study. The questionnaire had a total of twenty questions, designed in Likert scale format. All the questions addressed the specific objectives of the study. The analysis of the data and presentation of the findings was carried out using Microsoft Excel.

## Background Information

Fifty questionnaires were distributed throughout Lusaka's local road contractors which were obtained from the National Council for Construction (NCC) registrations as at end of day 28th July, 2015, with all questionnaires being successfully filled in. The response rate of the study was therefore 100%. The results are stated in table 4.1 below:

**Table 4.1 Depiction of Response Rate**

Category	Respondents Targeted	Actual Responses	Percentage Actual Vs. Target
Lusaka Local Road Contractors	50	50	100%
Total	50	50	100%

The information of the study constituted the gender and age group of the respondents. In terms of gender distribution, 60% of the respondents were male whereas 40% of the respondents were female. As for the age groups of the respondents, twenty-nine of the respondents were between 31 to 40 years old, this translates to 58%, 15 were between the ages of 41 to 50 years which translates to 30%, the remaining six which translates to 12% were above the age of fifty. The respondents were asked whether the companies they represented imported raw materials and what medium of exchange the companies used when importing raw materials. The respondents were also asked if exchange rate was considered when importing raw materials. Also asked was whether product availability was

## IV. CHAPTER FOUR: RESULTS AND FINDINGS

### Introduction

This chapter presents the analysis and findings of the data collected from the research where questionnaires were used as the instrument of data collection. The general objective of the research was to assess how the depreciation of the Zambian Kwacha against the US Dollar affects local road contractors in Lusaka, Zambia. The findings of this research were managed according to the arrangement and outline of the questionnaire. The specific objectives of the study were a guide to the study. These were:

1. To determine effects of the Zambian kwacha depreciation against the US dollar on local road contractors in Lusaka.
2. To establish areas that is affected by depreciation of the Zambian Kwacha against the US dollar on Zambian road contractors.
2. To assess to what extent Kwacha depreciation affects the project completion period.

This chapter also presents the analysis of the data in order to respond to the specific objectives of the

considered when importing raw materials. To determine how devaluation affected businesses, the respondents were asked if devaluation of the Zambian Kwacha affected cost of doing business positively or negatively.

The respondents were also asked whether project completion time was affected positively, negatively or not at all by devaluation of Zambian Kwacha against the US Dollar. Profits and whether they are affected positively, negatively or not at all was also included in the questionnaire. The respondents were also asked whether They felt that financial institutions stopped lending and also whether the cost of borrowing went up whenever

devaluation of our local currency occurred. The last question in the questionnaire was about workforce and if the organizations that the respondents represented were able to maintain the same workforce during devaluation of the Zambian Kwacha against the US Dollar occurred.

To determine how depreciation of the Zambian Kwacha against the US Dollar has affected local road contractors in Lusaka, Zambia, the questionnaire was distributed to fifty respondents in order to get their views on how their businesses were impacted. All fifty questionnaires were answered. The table below is a summary of the respondents' views:

Table 4.1: Results For Respondents Showing How Zambian Kwacha Depreciation Affects Their Businesses (%)

Question	Disagree	Strongly Disagree	Not Sure	Agree	Strongly Agree	Total
The company I represent imports raw materials			10%	62%	28%	100%
U.S Dollar is the medium of exchange used when importing raw materials	5%	52%	10%	3%	30%	100%
Exchange rate is considered when importing raw materials	4%		6%	20%	70%	100%
Availability of product is considered when importing exchange rate			17%	82%	1%	100%
Exchange rate is considered when importing raw materials		32%	10%	58%		100%
Devaluation of the Zambian Kwacha against the US Dollar affects cost of doing business positively	80%	18%	2%			100%
Devaluation of the Zambian Kwacha against the US Dollar affects cost of doing business negatively					100%	100%
Devaluation of the Zambian Kwacha against the US Dollar affects project completion time positively	24%	20%	38%	18%		100%
Devaluation of the Zambian Kwacha against the US Dollar affects project completion time negatively			8%		92%	100%
Devaluation of the Zambian Kwacha against the US Dollar has no effect on project completion time		6%	40%		54%	100%
Devaluation of the Zambian Kwacha against the US Dollar affects profits positively	10%	87%	3%			100%
Devaluation of the Zambian Kwacha against the US Dollar affects profits negatively				20%	80%	100%
Devaluation of the Zambian Kwacha against the US Dollar has no effect on profits		100%				100%
Devaluation of the Zambian Kwacha against the US Dollar affects borrowing costs from financial institutions in that interest rates increase			11%	54%	35%	100%
Devaluation of the Zambian Kwacha against the US Dollar causes financial institutions to stop lending			22%	8%	70%	100%
Devaluation of the Zambian Kwacha against the US Dollar causes repayment costs to go up		10%		38%	52%	100%
The organization I represent is able to maintain the same workforce during times of Kwacha depreciation	42%	50%	8%			100%

## Analysis

From the fifty respondents, thirty-five, which translates into 70% were from fast food restaurants, twelve (24%) from casual dining restaurants and three (6%) from restaurants that are classified as fine dining.

Where importing of raw materials is concerned, 62% of the respondents agreed that their firms import raw materials, 28% strongly agreed to that fact and 10% of the respondents were not sure.

58% of the respondents strongly disagreed that exchange rate of the Zambian Kwacha to US Dollar is considered when importing raw materials whereas 5% of the respondents disagreed. 10% of the respondents were not sure that exchange rate is considered when importing raw materials and 33% of the respondents strongly agreed to that fact stating that most choose not to import at all as prices of the commodities that they wish to purchase go up.

When it came to their view of devaluation of the Zambian Kwacha against the US Dollar affecting the cost of doing business positively, 80% of the respondents disagreed with this statement, 18% strongly disagreed, and 2% of the respondents were not sure whether they agreed or disagreed with this statement. All of the respondents, however, agreed with the view that devaluation of the Zambian Kwacha against the UD Dollar affected doing business negatively.

Where project completion time is concerned and whether devaluation of the Zambian Kwacha affects project completion time positively or negatively, 38% of the respondents were not sure whether project completion time is affected positively, 8% were not sure of that statement. 24% of the respondents disagreed with the statement that project completion time is affected positively by devaluation of the Zambian Kwacha against the

US Dollar. 20% strongly disagreed with the statement that devaluation of the Zambian Kwacha affects project completion time positively, 18% of the respondents agreed with this statement. 92% of the respondents on the other hand strongly agreed with the statement that devaluation of the Zambian Kwacha negatively affected project completion time because all costs especially of their raw materials increase. For some, they struggle to stick to agreed completion times in that they start lacking certain essentials i.e. raw materials. Where having no effect on project completion time is concerned, 54% of respondents strongly agreed with this statement, 40% of the respondents were not sure and 6% strongly disagreed.

Where profits and how devaluation of the Zambian Kwacha against the US Dollar is concerned, the respondents had the following views: For a positive effect on profits, 87% of the respondents strongly disagreed with this statement, they felt that devaluation of the Zambian Kwacha against the US Dollar did not have a positive effect on profits because their costs increase, thereby reducing their profits. 10% of the respondents disagreed with this statement and 3% of the respondents were not sure. For a negative effect on profits, 80% of the respondents strongly agreed with this statement and 20% of the respondents agreed that a devaluation of the Zambian Kwacha against the US Dollar affected profits negatively. As regards to devaluation of the Zambian Kwacha not having any effect on profits, all of the respondents strongly disagreed with this statement.

Where interest rates are concerned, the respondents were asked whether they felt that interest rates increase when a devaluation in our currency occurs, 54% of the respondents agreed with this statement, the reason given was that they find themselves paying higher interest rates

whenever the Zambian Kwacha depreciates. 35% of the respondents strongly agreed and 11% were not sure.

As for the question concerning financial institutions, 70% of the respondents strongly agreed with the statement that financial institutions stop lending when devaluation in the Zambian Kwacha against the US Dollar occurs, 22% of the respondents were not sure and 8% of the respondents agreed with this statement.

Another statement contained in the questionnaire was whether devaluation of the Zambian Kwacha against the US Dollar causes repayment costs to go up, to this statement, 52% of the respondents strongly agreed whereas 42% agreed, the remaining 8% were not sure whether repayment costs go up or not.

The last statement in the questionnaire covered maintenance of workforce during times of Kwacha depreciation, to which 50% of the respondents strongly disagreed in that the organizations they represented did not maintain the same workforce during times of Zambian Kwacha depreciation as costs of paying some of their workforce goes up such that they have no choice but to let some of their employees go. Some of the costs included in maintaining workforce mentioned included salaries, medical and benefits. 42% disagreed with the statement and 8% of the respondents were not sure whether the organizations they represented were able to maintain the same workforce during devaluation or depreciation.

## Chapter Summary

This chapter contained a detailed analysis of the results and findings of the research questions raised in chapter one. The findings and results are analyzed and presented using tables and figures for interpretations. The following chapter will cover conclusions and recommendations of the study.

## V. CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

### Introduction

Contained in this chapter is a detailed discussion with conclusion and recommendations on how depreciation of the Zambian Kwacha against the US Dollar has affected local road contractors in Lusaka, Zambia. Also included in this chapter is a summary of the study, conclusions and recommendations for future improvements and additions to the existing knowledge on the effect that Zambian Kwacha depreciation has on local road contractors in Lusaka, Zambia.

### Summary

The purpose of the study was to assess the effect of depreciation of the Zambian Kwacha against the US Dollar has affected local road contractors in Lusaka, Zambia. The study was ruled by the following specific objectives:

1. To determine effects of the Zambian kwacha depreciation against the US dollar on local road contractors in Lusaka.
2. To establish areas that is affected by depreciation of the Zambian Kwacha against the US dollar on Zambian road contractors.
3. To assess to what extent Kwacha depreciation affects the project completion period.

The research methodology was embarked on using a case study design with emphasis on descriptive research with the intent to demonstrate the effect of Zambian Kwacha depreciation on local road contractors in Lusaka. The study used descriptive research design as it nominated an existence of a relationship between the dependent variable and the independent variable. The target population of the study was local road contractors in Lusaka,

Zambia. The sample size consisted of fifty building professionals with the breakdown as follows: ten architects, ten builders, twenty quantity surveyors and ten structural engineers. Probability sampling was used in this study and simple random sampling was the sampling technique used.

## **Effects of Zambian Kwacha depreciation against The US Dollar on local road contractors in Lusaka**

Depreciation of the Zambian Kwacha affects every one of the contractors in Lusaka as is evidenced in table 4.1 which is a summary of responses drawn from the questionnaires that were distributed. The cost of doing business by the contractors is affected as firstly, their expenditure increases thereby affecting their profits. When expenditure increases, profits decrease. Their cost of machinery, equipment and corporate attire increases as these are products that are imported into the country. When the US Dollar rate goes up, the Kwacha loses value, making the procurement of the items mentioned more expensive as the exchange rate becomes affected. The cost of borrowing also goes up whenever there is a depreciation of the Zambian Kwacha against the US Dollar in that interest rates increase, making the repayment costs to financial institutions to increase.

Most road construction companies in Lusaka face payment related problems from their employers, namely the government. The government has difficulty to make payments as earlier explained because of lack of money for capital projects. Delays in payment make it difficult for the contractor to pay their workforce. This leads to most contractors taking the action of letting some of their workforce go. Predicting and planning cash flow also becomes a challenge for the contractors. Difficulty in predicting cash flow makes it difficult

to get loans from banks as the companies are considered a high risk.

## **Areas Affected by depreciation of the Zambian Kwacha against the US Dollar on Zambian local contractors**

The areas affected by depreciation of the Zambian Kwacha against the US Dollar on local contractors include costs of conducting business which becomes difficult due to increase in expenditure as mentioned in the paragraph above. Profits are affected because of the increase in expenditure. Borrowing from and cost of paying back to financial institutions are also affected. Labour is also affected as maintenance of workforce becomes a challenge.

## **Extent to Kwacha depreciation affects project completion time**

As stated earlier, depreciation of the Zambian Kwacha leads to cost escalation in most of the projects that go beyond the initial budget. Cost escalation refers to an increase in the amount of money required to construct a road project over and above the original budgeted amount. Cost escalation occurs when actual costs exceed what was in the original estimation or bill of quantities (BOQ) submitted before the projects began. In most cases, road construction firms in Lusaka have been finding themselves in situations where costs are way above their initial budgets. This leads to halting of certain projects due to lack of funding. Halting of projects affects the project completion time that was planned originally. So, Kwacha depreciation does affect project completion time and not in a positive way.

## **Recommendations**

It is pretty evident that depreciation of the Zambian Kwacha against the US Dollar has affected all the



local road contractors in Lusaka, Zambia and that the effect is more negative than positive. Zambia therefore needs to start developing its own local manufacturing industry in order to avoid importing certain materials. If local road contractors start purchasing certain materials including machinery locally, they will not have to incur certain unnecessary losses and delays that stem from cost and budget overruns due to sudden increases in raw material and machinery as the local currency loses value. Manufacturing our own materials and equipment increasing exports and correcting economic fundamentals. If we, as Zambians can manage to have a stable currency, we will begin to experience a stable economic growth and a stable inflation environment.

If Zambia's current account deficit (CAD) can be managed through economic reforms such as the economic stabilization and growth program which all stakeholders should commit to. This can at least lead to a stable exchange rate as well as inflation rate. Zambia therefore needs to come up with a shift in all policies that will benefit the local industry. The Zambian government should also strive to bring exchange rate to the barest minimum, if not at par with the Zambian Kwacha. Stability should also be maintained as instability of the Zambian Kwacha will lead to instability in construction material raw material prices which will subsequently affect our local construction companies and the projects that they have running currently or are planning on running.

Efforts should start being aimed at maintaining a stable inflationary trend in Zambia. Financial institutions should reduce the interest rates on facilities taken from banks or lending agencies. The reason for this suggestion is: when interest rates are high, investment in capital investment projects is disadvantaged.

If Zambia's own local industry will not be encouraged, import duties charged on construction material should be reduced. This will in turn have a positive effect on raw material used in construction, leading to an encouragement in the continuation of road construction projects.

There is also need to start incorporating into tender price the expected exchange rate and inflation to avoid cost overrun of construction projects. By incorporating expected changes in price due to inflation and exchange rate differentials, construction companies will have to take in to consideration competitor prices on the market, as a high price may affect them during tender bidding if the price is too high. A high price in itself is not a bad thing provided all factor affecting the successful completion of the road construction project on time are considered to avoid stoppages, delays and cost over runs. Also, the amount the amount construction companies pay suppliers may directly hinge on inflation in some cases, hence it's still wise to regularly evaluate supplier from which the material is being bought from. Construction companies should always keep an eye on what suppliers' competitors are offering and shop around for better deals. It may not be worth changing suppliers if you've built up a meaningful relationship with one, but chances are, you can find ways to save some money in this area, even if it means negotiating with existing suppliers.

While Zambian companies may not be able to stop the volatility in the short-term, they are at least able to hedge using over the counter forward exchange contracts or indeed exchange traded currency contract. Forward exchange contracts hedge against exposure by allowing the importer or exporter to arrange for a bank to sell or buy quantity of dollars at a future date, at a rate of exchange determined when the forward contract is made.

The customer will know in advance either how much Kwacha he will receive (if he is selling dollars) or how much Kwacha he must pay (if he is buying dollars from the bank). It is also critical to have a detailed project planning to identify the risks before it becomes a crisis. Strong planning can ensure that all the resource, budget, processes, requirements can be managed well. And it allows the project manager to make a risk management plan to quantified and identified the risk so they can have enough time to plan.

Road Construction companies should also look for way's technology can reduce costs. Are there any tasks that can become more cost-effective by utilizing a technology that you're not currently employing? Construction companies should look for ways where automation can come in and make improvements. This can work to boost employee productivity by allowing tasks to be completed much more quickly with less room for human error. It can also free up employees' time so they can get more work done and help to improve the bottom line.

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