# The Diversification Challenges of Zambia's Copper Driven Economy

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Submitted to

**LOVELY PROFESSIONAL UNIVERSITY**

in partial fulfillment of the requirements for the award of degree of

**MASTERS IN ECONOMICS**

**SCHOOL OF BUSINESS**

**LOVELY PROFESSIONAL UNIVERSITY**

**2016-18**

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# Chapter 1: Introduction

## 1.1 Background

Zambia is a landlocked country surrounded by 8 neighboring countries located in the southern region of Africa, which gained its independence in 1964. Since independence the country can boast of being a peaceful democratic country with no wars or genocide. The population of Zambia is around 17 million people as at 2017 occupying an area of 752,618 km². It is estimated that 40% of Southern Africa's fresh water passes through Zambia and Zambia has over 33,500 km² of arable land.

**Fig 1 position of Zambia**

## 1.2 Economic Conditions

The Zambian economy is one that can be described as a mono economy as it relies mainly on the production of copper for its growth, Zambia has over 20 million metric tones of copper reserves and ranks 9$^{th}$ in the world and 2$^{nd}$ in Africa. Taking advantage of these large reserves Zambia focused on copper production to boost the economy over the years. The result of this reliance on the mineral is that copper accounts for 70% of the exports in Zambia. The copper industry though the largest in Zambia only contributes to 3% of taxes against 70% of the country's investments due to promotion of the sector through tax breaks given to investors. The mining sector employs around 65,000 people directly and the contribution to GDP is around 12 %.

Zambia's GDP composition by sector shows that the services sector has the biggest contribution at 46.5%, Agriculture at 19.8% and industry at 33.8 %(12% copper mining).

| ZAMBIA MATRICES | |
|---|---|
| Inflation | 6.8% (November 2017) |
| Real GDP growth | 4% (November 2017) |
| Exchange rate/$ | 10.01 ZMW/$ (10th November 2017) |
| Population | 17, 237, 931 |
| GDP per capita PPP | 3,997.21 $ |
| GDP | 25.58 billion US $ |
| GDP based on PPP | 68.9 billion US $ |
| Poverty rate | 57.5 % |
| GDP per capita | 1,484 $ |

Over the years there have been many calls for the government of Zambia to diversify the economy as fluctuations in prices or demand for copper has always been seen as a risk in which could leave the economy in a crippled state.

In 2015 the fears of the Zambian people came alive and the price of copper dropped world wide crippling the Zambian economy. The GDP growth rate fell from 6.7% to 2.9% in 2015 before slowly rising to 3.3 % in 2016 much slower than the average 7.4% between 2004 and 2014. At the same time Zambia faced electricity and food shortages resulting from consecutive poor rain seasons producing poor harvests and reducing the water in the Kariba Dam which is Zambia's main source of hydro electric power.

These poor economic conditions prompted the government to seek out assistance from the International Monetary Fund (IMF).

Economic conditions have improved slightly since the turn of 2017, and the World Bank projects an improved growth rate of 4% in 2017. This follows high rainfall in the 2016/17 agricultural seasons that has improved agricultural output and quickened the replenishment of hydroelectric reservoirs.

Although the copper prices have began to stabilize, the government of Zambia remains intent on diversification of the economy particularly with the agricultural sector in mind. In 2017 its 7$^{th}$ national development plan titled "accelerating development efforts towards vision 2030 without leaving anyone behind" the five pillars of this plan are:

- Economic diversification and job creation
- Poverty and Vulnerability
- Reduced Developmental Inequalities
- Enhancing Human Development
- Conducive Governance Environment for Economic Diversification

The strategic goal of the 7th National Development Plan is to create a diversified and resilient economy for sustained growth and social economic development.

## 1.3 Importance of study

Zambia's commitment to diversify its economy has been welcomed by its people and the international community and it can easily be agreed that economic diversification is the key for a nation with abundant resources to avoid risks and shocks in the prices of its main commodities, although Zambia has had to learn this the hard way though experience. This paper will not argue that economic diversification is imperative for economic growth and development, where the local economy is reliant on mining as the key economic activity as diversification has already been studied by many and the benefits are now well known. The paper will focus on the challenges in respect to the agricultural sector in which Zambia looks to diversify to. The importance of diversified economic activity will still be explored, with specific emphasis being placed on the agricultural but the emphasis will be on the challenges of diversification Zambia. The study will be able to shed light on why it may have taken Zambia this long to attempt to diversify its economy and how this can possibly be done in the best way possible.

The idea behind diversification is now a common phenomenon but from the economic point of view it is important to not adapt a one size fits all approach to policy and understanding and hence a complete review of policy and the sectors involved is needed. This study is built on this assumption.

## 1.4 Objective

- To understand the characteristics of the agricultural production environment
- To investigate the impact of the mining sector on the economic growth of Zambia
- To analyze existing theories regarding economic diversification
- To explore the economic diversification opportunities for Zambia (agriculture/tourism)
- To understand the challenges of diversification with respect to Zambia
- To make proposals/solutions to overcome the challenges

# Chapter 2: Literature review

Chapter provides an expansive literature review on previously studied topics related to my study. It gives an overview of the researchers/ authors' findings on topics such as diversification trends, policies for diversification, the resource curse and agricultures role in economic development.

Sharpley, R. (2002) In his article "the challenges of economic diversification through tourism: the case of Abu Dhabi" analyze the tourism sector as a vehicle for diversification and economic development. he states that through their research they have come to know that tourism has become a major a major element of policies to increase economic development, the study suggests that diversification to tourism is not only a target for developing countries but for developed countries as well. It is well worth noting that countries that may not have needed to look for alternate economic sectors have also turned to tourism as a source of increasing economic growth. Despite the promising potential of the tourism sector the researcher points out that choosing tourism as an alternate source of economic growth should be met with some caution. The article focuses on Abu Dhabi, which is an oil rich emirate that sought out economic diversification through tourism to protect its economy from the volatile global oil prices. The author states that although the diversification is proving successful for the emirate there were a number of challenges that came with targeting the tourism sector and these rotate around the high investment needed in product and promotion, their case example of Abu Dhabi demonstrates that for diversification to be successful not only in the tourism sector but this can include other sectors then the country seeking diversification should diversify into a sector in which it can take advantage of cheaper factor endowments.

Hvidt, Martin (2013) making use of an empirical and comparative approach to analyze the past trends and make predictions on future trends in economic diversification targeted six countries from the Gulf Corporation Council (GCC). With use of content analysis, they were able to study possible future trends of diversification by the six nations by analyzing the content of their respective governments development and economic plans. The findings where that the development plans of governments of these countries all point towards diversification, in one-way or the other they all see diversification as a way to develop economically and secure the sustainability of income levels in their respective nations. However the paper also states that there are question marks on whether the planned diversification is actually translated into action considering a number of structural barriers that that come along with diversification. The researcher suggests that there is evidence that government often falls back on their already established ways of doing business when there is pressure on the new well-argued policies that encourage diversification. The conclusion is that it is very difficult to diversify an economy through politically difficult economic reforms especially in an economy that is not going backwards.

This article by Rodrik (2005) starts by analyzing developing countries and finding that not all developing countries focus their efforts on intensive use of natural resources or competences such as cheap labor for their exports. The author identifies that even in developing countries it can be found that the countries that export products that developed countries would usually export tend to grow faster economically. Because of this discovery an index was created to measure the degree of each country's export mix. This is an idiosyncratic phenomenon, which means to do things ones own way. The author states that government should give incentive policies to support innovation and recognize when a policy has failed and stop subsidizing it. In conclusion the author suggests that because of idiosyncratic phenomenon it isn't possible to have one size fits all solutions or universal solutions so each country should make policies for their diversifications plans that are unique to their respective countries or risk failure.

Lele, Uma (2012) discusses Africa's development experience from the view of public and macroeconomic policy. The paper establishes that Africa's poor economic performance in the 1970's was due to poor policy making specifically in the agricultural sector, and the improvement in Africa's economy was due to agriculture during the years that followed. The paper identifies the agriculture sector as a strong sector in which economic growth can be achieved but only with a good mix of donor advice and public policy that addresses the various inconsistencies which exist in the previous failed policies. The conclusion is that there is synergetic policy making which emphasizes the combination of different sector specialists in the policy making process to get the best out of the agricultural sector and boost economic growth. There is importance in the interaction of macroeconomic policy and agricultural policy to be explored in order to get the best out of the agricultural sector if a country is going to focus on agriculture for economic growth.

Ghatak & Ingersent (1984) highlight the relationship between agriculture and development (economic) in developing countries. The authors analyze the similarities and difference of the agricultural sector in developed and developing countries, coming to the realization that the developing countries have a large number of subsistence farmers practicing traditional agricultural. Ghatak & Ingersent (1984) point out that agriculture can be a backbone for developing countries as agriculture provides raw materials, food and employment. Hence an ever-growing agricultural sector leads to an ever-growing economy able to cater for an ever-growing population. The author's highlight that returns from a strong agricultural sector can be used for capital in other sectors. Having said all this they point to the difficulty of developing the agricultural sector with the focus of institutional issues such as land ownership. In conclusion, the authors suggest that in order for the agricultural sector to be effective restructuring of the sector is needed in the inception of policy implementation.

Kaulich, Florian (2009) use the u-curve hypothesis to analyze the relationship between two economic areas, namely economic specialization and per capita income. From their analysis they come to an understanding that both specialization and diversification are important for a country but at different stages of economic development and different stages of per capita income. Countries at lower stages of economic development with lower incomes will be inclined to diversify their production as per capita income increases up to the point that they are developed and then they will specialize which will form a u-curve. This method to analyze the importance of diversification has been criticized by some researchers stating that although there is u shape curve it cannot be attributed to one within country variation alone (per capita income). The author concludes by stating that it can be proved that developing countries often diversify that their production and exports to increase economic development there is no solid proof using the u-curve method to suggest that developed countries with high per capita income return to specialization.

Therefore the studied u curve fails to represent the development path of a developing country.

Dutt et al (2008) documents the pattern of trade diversification and economic development over the course of time. The author looks at specialized exports to diversified exports and what effect it has on economic development. They look at the key trade drivers of diversification from which come in form of trade costs such as distance to markets. The author aims to establish whether it is better for economic development of a country if it increases the volume of a specialized export or diversifies and increases total exports through adding to what can be termed as a countries portfolio of exports. They also analyze whether it is better to increase the intensive margin of exports or extensive margin of exports to increase income per capita. They conclude that it is better to increase the extensive margin of exports than the intensive margin of exports and so the more effective way is to diversify into other products rather than try to increase intensity of the already favored product.

Papyrakis & Gerlagh (2004) examine the nature of economic growth in nations which have an abundance in a particular natural resource. They believe that abundant natural resources do not have a positive effect on growth if other variables that come with abundance of natural resources are taken into effect. Natural resources without their externalities would have a positive effect on growth according to authors. This hypothesis is known as the resource curse. The resource curse basically takes into account the externalities that come along with an abundance of natural resources such as investment, terms of trade, schooling and corruption. The study looks at what is known as transmission channels (how natural resources affect the other explanatory variables). The researcher uses transmission channels to determine whether the negative effects on the other explanatory variables are greater than the positive effects and vice versa. The conclusion is that there are more negative effects on then explanatory than there are positive so hence the author is in favor of the resource curse.

Mikesell (1997) studied the resource curse and stated that although there is an inverse relationship between resource abundance among developing countries and economic growth there is no straightforward explanation for it. The researcher states that it is difficult to pinpoint an important growth variable that could be common in developed resource poor countries and absent in under developed resource rich countries. The author identifies sustainability as the problem that might cause the resource curse because resource rich countries that export usually have high growth periods with subsequent periods of stagnation shortly after. The author concludes by stating that poor economic conditions and low growth cannot be attributed to abundance in resources in a country, so in actual fact there is no resource curse.

Adibi & Ataee-pour (2015) analyzes the diversification of mineral production in a mineral rich country but within the minerals sector rather than to another sector. The author states that minerals are very essential in development of mineral rich countries but the revenue comes with a risk as the markets for minerals have been seen to be volatile. Because of the volatility of the market minerals can be considered as a risky asset to add to Modern Portfolio Theory (MPT) with looks to reduce risk. The solution for countries that have multiple minerals in abundance is therefore to diversify within the mineral. The author took the example of Iran, which has several minerals in abundance and used the non-linear model and solved it using a method of quadratic programming. The results were the countries optimal quantities and types of minerals that should be produced which will reduce the risk. Modern Portfolio Theory therefore can be used to help analyze how a country should diversify the quantities and products produced.

# Chapter 3: Research Methodology

This chapter will show the direction, which is going to be taken in order to fulfill the objectives of this research.

### 3.1 Research Design

The research design is a combination of descriptive research and diagnostic research in that the problem will be defined and opinions from previous literature analyzed and then a solutions and suggestions will be given based on the findings. The type of data used in this research will be secondary data.

### 3.2 Data Collection

Secondary data will be collected from statistical organizations and websites and then relationships between variables will be analyzed. The data that will be important for this study is; contribution of GDP from the various sectors to the total GDP, population growth of the country, percentage of exports attributed to the particular sectors, employment statistics, international demand for exports, infrastructure (transport networks) and the countries' underutilized resources.

### 3.3 Method of Data Analysis

In order to analyze the data, Statistical Package for Social Science (SPSS) will be used to understand the relationships between data collected. Correlation will be tested as well as ANOVA to test the variances of the variables. It is important that before coming to any conclusion relationships between variables should be tested for significance.

A time series data will also be used to from a period up to 10 years. This data will be used to analyze the effects of changes in independent variables on the dependent variable.

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