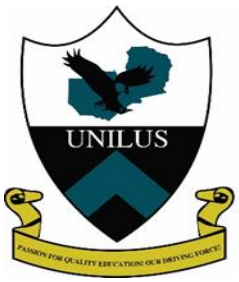

UNIVERSITY OF LUSAKA

SCHOOL OF POSTGRADUATE STUDIES

AN EVALUATION OF THE EFFECTS OF TAX REVENUE PERFORMANCE ON ECONOMIC GROWTH IN ZAMBIA (1994-2023).

A DISSERTATION SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES, UNIVERSITY OF LUSAKA IN PARTIAL FULFILLMENT OF THE AWARD OF THE MASTER OF SCIENCE IN ECONOMICS AND FINANCE.

BY

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Declaration

I **MOSES LUKIMA KASONSO** acknowledge that the work presented herein called "The Effects of Tax Revenue Performance on Economic Growth" is my own original work and has not been entered for any other degree or professional qualification. Every single source that has been used in the preparation of this research has been cited in the reference section. All elements, of this work, pulled from other works, have been cited appropriately.

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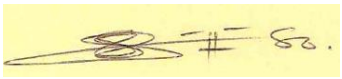
Signature of Student: …  ……

Date: 20/01/2025

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Signature of Supervisor: …  ……

Date: 20/01/2025

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Dedication

I dedicate this work to my family because they have been my strength at all levels of my academic endeavor. They believed in me always to overcome the odds and come out of the way and other hurdles. This work in dedication to their love, services, and constant encouragement.

Acknowledgement

First and for most I would like to start by warmly thanking every individual who has in one way or the other contributed to the realization of this research work.

First and foremost, I am grateful to my supervisor – Dr. Habazoka – for the support since this research begun, including feedback on the content of the work. My heartfelt appreciation goes to their guidance and assistance for which this work has been made possible.

I would also like to thank the faculty members and colleagues at the University of Lusaka for their input and valuable suggestions during the preparation of this work.

I want specially to express my appreciation to the authors of works, which served as the basis for this study. Both the areas of tax revenue and economic growth have benefitted from their efforts and have hence influenced the theoretical underpinnings of this research.

Last but not the least, I am grateful to my friends and families for their kind support to my studies during the primitive days of this research. They have been rendering me Moral support all through and for this, I would not have been able to do this.

That is all very much appreciated. Thanks for encouraging and supporting me.

Abstract

This research aimed at analyzing the effect of tax revenue performance on economic growth in Zambia from 1994 to 2023. The study therefore adopted a quantitative research methodology and used econometric model to analyze the various components of overall tax, including direct taxes, indirect taxes and mineral royalties with GDP of the country. Primary data were obtained in the form of time series covering the period of this study and the authors employed the Autoregressive Distributed Lag (ARDL) model to establish the short-run and long-run causality between the sources of tax revenue and growth.

The study results provided evidence to support hypotheses formulated with emphasis on the part played by tax revenues in Zambia's economic development. In the short run the empirical evidence showed that direct taxes and mineral royalties where negatively related to GDP implying that these sources of taxation maybe detrimental to the immediate growth of the economy. On the other hand, there appears a positive correlation between indirect taxes and GDP but with time lag implication that contribution of indirect taxes to GDP took time. In addition, the analysis of the Error Correction Model (ECM) corroborated the presence of a long-run equilibrium relationship between tax revenues and economic growth with a significant lag of the variables towards their long-run equilibrium amounts.

Further, the study revealed that although direct and resource base taxes including mineral royalties were problematic for growth in the short run but indirection taxes exerted more gradual and sustainable impact on economic growth in the long term. These findings pointed at the need for the right skewed structure of the Zambian tax system to support short term fiscal requirements and long-term sustainability and growth. The concluded that the government needed to shift to the more diversified pattern of taxation in which indirect taxes would have a key role in funding of the expenditure since such type of taxation was more sustainable for the economic growth.

Key Terms: Tax Revenue Performance, Economic Growth, Direct Taxes, Indirect Taxes, Mineral Royalties, Gross Domestic Product (GDP).

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List Acronyms

ARDL - Autoregressive Distributed Lag

ECM - Error Correction Model

FDI - Foreign Direct Investment

GDP - Gross Domestic Product

GNI - Gross National Income

ICT - Information and Communications Technology

IRS - Income Revenue Service

LDCs - Least Developed Countries

MTR - Marginal Tax Rate

NGOs - Non-Governmental Organizations

OECD - Organisation for Economic Co-operation and Development

SMEs - Small and Medium Enterprises

TAX - Taxation

VAT - Value-Added Tax

ZRA - Zambia Revenue Authority

CHAPTER ONE: INTRODUCTION

1.0 Introduction

Taxation is vital in the fiscal policy system and has significant importance in economic growth and management internationally. Taxes in Zambia and indeed many developing countries form part of the government's revenue which it requires for financing services, physical infrastructures, and other social welfare programs. It is therefore important that the efficiency and effectiveness of tax revenue mobilization play an important role in the provision of public funds for development expenditure and at the same time influence the fiscal sustainability of a country and growth of the economy.

In recent decades Zambia been experiencing substantial economic growth and development through different factors such as natural resource, improvements in infrastructure and policy changes. Tax revenue coming from both the direct and indirect taxes is one of the sources of government revenue on which Zambia base its fiscal structure, expenditure and economic policies for development.

This chapter acts as the foundation for the study, because it explains the research background, problem statement and formulation, objectives of the study, its significance, and outline of the study.

1.1 Background of the study

This paper seeks to analyze the progression of Zambia's tax administration since its independence. Before 1994, tax administration was under the control of Customs and Excise department in the Ministry of Finance. But in 1994 when the Zambia Revenue Authority 'ZRA' was put in place, things changed. Born from an Act of Parliament; Chapter 321 of the Laws of Zambia ZRA was tasked with the implementation of all taxes while the Ministry of Finance remained solely responsible for the formulation of tax policies.

This transition was in conformity with other tax policy reforms which sought to reorient the financial management of Zambia. When implementing ZRA, objectives were laid down to rationalize tax collection procedures, increase compliance level and efficiency in revenue

mobilization. These reforms were vital for fiscal issues and to support development and maintain sustainable development-oriented projects.

In the last three decades, Zambia has witnessed through its tax policies and system administrative reforms. Pressure from mines, which had been one of the main Zambian staples for many years, demanded extensive changes during Structural Adjustment Programme (SAP) in early 1990s. As highlighted by Nalishebo and Halwampa (2014), SAP was intended to correct for what were stated to be entrenched financial dysfunctions, with Zambia, for example, said to be losing a million dollars per day or, in fact, 10 % of its Gross Domestic Product. Among reforms which were implemented by SAP were reduction in taxes on mining companies for instance a mineral tariff of 0.06 % while other measures included corporate tax of 25 % and decreased import charges.

Furthermore, Zambia has continued to make changes in the macro environment it seeks to develop and correct its tendencies to over-dependence on mineral exports. Some of them include; Development of Multi-Facility Economic Zones (MFEZs), Value Added Tax (VAT) exemption for local manufacturers, low Income Tax rates threshold in areas such as tourism, agriculture and industrial sectors among others. These include the attempts to promote development in the non-mining part of the economy as well as to diversify the economy.

However, the United Republic of Zambia has for a long time been registering an average tax to GDP ratio of 15.43% a figure far below the 33.5% world average as per the year 2020 OECD revenue statistics report. The ratio has fluctuated sharply from 11.9% in 2009 to 17.2% in 2019 (ZRA, 2021). Traditionally, direct taxes have been the largest producer of the tax revenue, but trade taxes follow it albeit in a very fluctuating manner owing to policies. Another considerable source is the extraction royalties, but their volatility has been seen in their fluctuations in the last couple of years.

Total tax revenue was between 14.4 % and 17.2% of the GDP over the period 2016 to 2020, due to modification of tax policies and economic factors. In recent years, tax

revenues have also expanded but Zambia has failed to post a T GR / GDP above 19% showing current problems in this area.

From an economic view point, Zambia has experienced a dramatic slow-down in the realization of its GDP growth rates over the last half decade. From 2016 to 2019, the country witnessed successive reductions in GDP growth: A first sign of this shift was in 2016 with a small decrease of 0.27%, deeper in 2017 with 0.53%, in 2018 with 2.59% and a sharp decline in 2019 of 4.46% (ZRA, 2021). The gradual onset of these lower rates of growth presents problems within the Zambian economy pointing to broader issues to do with macroeconomic instability and structural impediments.

Despite this economic decline, and particularly over the same period, Zambia had recorded a sharp increase in tax revenues. Regardless of negative economic effect across all levels of the economy, tax revenue was a record with an upward trend. This phenomenon poses relevant questions concerning the relation between the performance of taxes and the growth of the economy.

There might be various possible scenarios that make it possible to explain the situation when despite the fact that GDP growth rate is shrinking, tax receipts are increasing. First, it reaffirms the Zambia's tax administration's ability to mobilize revenues despite the prevailing or existing economic conditions. These may be reflecting, among other things, increased effectiveness of measures to enforce taxation regimes, increases in the bureaucratic capacities of country administrations or shifts in policy initiatives that seek to widen tax bases and improve collection rates (Bird & Martinez-Vazquez, 2019).

At the same time, the decline in the GDP growth/tax revenue relationship raises the question of the causes. It raises questions on whether higher taxes which may include tax rate and base broadening are in some way depressing activity and worsening the GDP growth rate. Again, it may indicate that cyclical declines are mostly of the sectoral kind, enabling tax receipts from sectors that are less affected by cyclical slowdowns to rise further (Keen & Mansour, 2010).

Moreover, as the specifics of correlation between the tax revenues and the economic growth dynamics suggest, the fiscal policy effects must be analyzed separately. Measures to support additional sources of revenues are important in view of fiscal sustainability but should also be evaluated in terms of how they may affect investment incentives, private consumption and more generally business-cycle vulnerability (Besley & Persson, 2013). When caught up in fulfilling revenue needs and, at the same time, creating a conducive environment for the economy, it becomes crucial to achieve these objectives.

1.2 Statement of the Problem

Tax revenue is the largest portion of Zambia's fiscal policy, it is an important source of funding for such requirements as public service provision, infrastructure, and social requirements. The increased taxes revenue may suggest efficiency, in the exertion of revenues collections, which suggests that there is possible and accomplishments in the tax operation, compliance measures or policy making that aims at expanding the tax payer roll and improving on efficiency in tax collection (ZRA, 2021).

Although in the recent years Zambia has recorded an increase in the proportion of tax revenue to its Gross Domestic Product (GDP) which has increased from 14.4% in 2016 to as high as 17.2% in 2019 (ZRA, 2021), has been characterized by falling GDP growth rates. At the same time the GDP growth dynamic was reduced in 2016 by 0.27%, in 2017 by 0.53%, in 2018 by 2.59%, and in 2019 by 4.46% (Keen & Mansour, 2010). It presents obvious questions of today's efficacy of current tax systems and their implications for the nature of growth in Zambia.

However, the slowdown of GDP growth rate(s) presently indicates structural problems that may include; low productivity, restrictions to investments or cyclical decline especially for the mining industry which forms the backbone of Zambia's economy (ZRA, 2021). This sector also contributes highly to the Gross Domestic Product and export ratio of Zambia and therefore consider as one of the most influential sectors in Zambia's economy (World Bank, 2020). Understanding the relationship between the tax performance and economic growth is very essential for any policy maker who has a desire of improving the sustainability of the tax revenue and the overall economic growth in Zambia. Optimal

taxation means not only the achievement of the maximum amount of tax revenue that can be collected at a certain time but also the TAS taxation policies for fiscal year should provide the conditions for further economic growth. This assumes that some right balance is attained in resultant generation of certain amounts of revenues on one hand and not discouraging necessary investment, consumption, production and job creation in one form or the other in various sectors on the other (Besley and Persson, 2013). However, apart from portraying visible signs of a source of income to the government, tax policy has implications on the distribution of income, poverty eradication as well as implementation of sustainable development goals. It means that taxation reforms may help to narrow inequality and where progressive reforms are applied, while regressive reforms exacerbate it influencing social cohesion including steady economic development (Bird & Martinez-Vazquez, 2019).

Therefore, this research aims at establishing these dynamics so that useful lessons could be learned in development of policies to foster economic development and growth.

1.3 Research Objectives

1.3.1 General Objective

To assess the effects of taxation on economic growth in Zambia between 1994 and 2023.

1.3.2 Specific Objectives

i. To evaluate the effect of Direct taxes on economic growth.
ii. To assess the relationship between Indirect taxes and economic growth.
iii. To estimate the relationship between Mineral Royalty and economic growth.

1.4 Research Question

i. What is the impact of Direct taxes on economic growth?
ii. What is the relationship between Indirect taxes and economic growth?
iii. What is the relationship between Mineral Royalty and economic growth?

1.5 Scope of study

This paper assessed the impact of tax revenue performance: particularly efficiency in tax collection for economic growth in Zambia having analyzed and comparing the efficiency of tax collections with the growth of GDP within the 1994-2023 period. They use domestic data to evaluate the influence of direct and indirect taxes, trade taxes, and other revenues on performance. This work analyses tax revenue for public service delivery and development expenditure, the impact of economic fluctuations in tax compliance, and factors such as tax evasion and contributions from the informal economy. As a result, it relies on secondary data touching on the ZRA, CSO's, and World Bank reports to offer recommendations to policymakers and scholars to foster economic development. The analysis is based on the data with fiscal and macroeconomic indicators used for the period; the main historical data sources are recognized to have shortcomings.

1.6 Significance of the Study

The importance of this study is hinged on the ability of the study to offer vital revelations on the impact and effect of tax policies on Zambian economic development. Through this assessment of economic growth determinants by the Direct taxes, Indirect taxes and Extraction royalty (Mineral Royalty), the study meets the required need for policy analysis. It is against this background that there is need for policy makers to get acquainted with such dynamics in order to efficiently formulate fiscal policies, increase capacity to generate revenues, and consequently foster sustainable economic growth. In addition to benefitting academia, the work will provide useable insights for government bureaucrats, economists, and other interested agents that propose Zambia's economic direction. Therefore, this study aims at contributing to knowledge and practice that will enable formulations of resource and policy decisions that will enhance the establishment of economic buffer, better allocation of resources and supporting growth across all sectors of the Zambian economy.

1.7 Thesis outline

The thesis is structured as follows: Chapter One sets the general avenue of the study through the presentation of background, problem area/definition, objectives, research

questions, scope, importance and an overview of the thesis chapters. Chapter Two features a literature evaluation and synthesis of tax revenue performance, growth, and tax performance-growth correlation as well as an evaluation of existing literature and lessons learnt. Chapter Three discusses the theoretical and conceptual framework, theoretical review, the suggested conceptual framework, research hypotheses, and hypothesis measurement. Chapter-four provides a description of the research strategy, theory and specification of the empirical model, data sources, data analysis and research ethics. This chapter is the analysis of the research study and empirical results using descriptive statistics and unit root test, ARDL model, short and long run coefficients and error correction component, and Granger causality analysis. Last but not least, Chapter Six summarizes the findings and gives recommendations in the thesis regarding taxes and economic growth and the mineral royalties in the economy.

1.8 Chapter summary

Chapter one introduced the study and established the context in which the Zambian economy has witnessed an increase in the excursions of tax revenue yet the GDP growth rates are declining. This chapter identified the research objectives: to assess an impact of Direct taxes, Indirect taxes, Trade taxes and Extraction royalty (Mineral Royalty) on the economic growth of Zambia. For each objective, a research question was formulated. The relevance of the study was driven by its ability to contribute to policymakers' understanding of how to, improve fiscal sustainability and catalyze a broader economic growth. Tax policies and their direct effects on economic growth were under study while excluding overall macroeconomic factors and other policy details that were out of the reach of the available data. This provided the path that the subsequent chapters will build on in terms of empirical analysis and results to explain the relations between tax revenues and economic performance in Zambia.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

This research study is underpinned by a literature review that encompasses a summary and evaluation of current peer-reviewed research and empirical work relating to the research objectives that center on the link between tax revenue performance and economic growth. This chapter consolidates and discusses a mountain of theoretical literature, corresponding existent literature, as well as policy debates organized from an international and Zambian perspective. The expected contribution of the study is to advance cumulative knowledge, reveal misconceptions, and establish a strong theoretical framework for future research on the relation between tax policies and economic consequences. The dimensions will include Direct taxes, Indirect taxes, Trade taxes and Extraction royalty (Mineral Royalty) influence on economic growth as well as compliance, efficiency and macroeconomic environment. The findings of this chapter lay the thematic foundation for the analysis that is provided in subsequent chapters and contain recommendations that policy makers should consider in their fiscal policies; and will add to the understanding of fiscal policy and economic development in Zambia.

2.1 Overview of the tax revenue performance

Fiscal performance is an integral part of tax system, it determines the capacity of the country state to provide effective financing of public services, infrastructural facilities and development projects. It is argued that tax performance depends on factors such as efficiency of tax administration, the nature of taxation and the state of the economy in Zambia. Despite the reforms which have been made in Zambia to improve the taxation system there are still problems to do with tax administration, compliance and policy efficiency. The objective of this literature review is to review the performance of the Zambia tax system in terms of Tax Revenue Mobilization, Efficiency in Tax Administration, structure of the tax system and influences by domestic and external factors on Tax Collection.

The mobilization of taxes in Zambia has become crucial the more so since the Zambian government is trying to strengthen its fiscals-setting as the public debt burden and

multilateral aid continue to rise. The Ministry of Finance (2020) has revealed that Zambia's Tax to GDP ratio which is a measure of tax performance for the country hovers at 16.4%. This figure relates to the country's capacity to mobilize domestic resources but it is considered low amongst the developing economies which other ratios above 20 percent IMFF, 2021. The ratio has been worrisome to the policymakers because it shows that Zambia operates at suboptimal tax-effort level and thus has limited capacity to finance critical general government expenditures. A high percentage of collected taxes is utilized for paying for external debts and public sector employing expenses, thus, little amount of money is available to fund development expenditure (Chansa and Nyirenda, 2021).

Zambia Revenue Authority (2019) opines that formal tax performance in Zambia has also been impaired by structural elements that involve high reliance on mining as the dominant economic sector, which forms the backbone of tax system. This makes the country highly vulnerable to volatility in the taxes generated from those few sectors hence exacerbate existing instabilities in fiscal performance. Besides, most of the economic activity that is informal is still exempt from tax because most of the people within the sub-continent have little interaction with the formal tax system (Tshuma, 2019). Though the government has implemented measures of enhancing the tax revenues like extending the VAT and income tax, measures, these taxes have not been well implemented due to compliance issues and tax evasion (Karinga & Nyirenda, 2017).

The efficiency of tax administrations is one of the essential factors affecting tax compliance. In Zambia, the Zambia Revenue Authority (ZRA) is the tax administration agency that has been charged with the broaden and collect functions yet has failed to enhance efficient collecting of taxes. Another challenge is the high rate of tax immoralities which translate to a large tax loss and a high rate of informal economy (ZRA, 2020). As categorized by the World Bank (2020), the tax gap in Zambia — the disparity between admissible tax revenues without substantially enhancing compliance enforcement and actual collected revenues is sizable. The failure to record the informal business sector which provides immense GDP constraints the government's revenue mobilization capacity (Tshuma, 2019).

To overcome these challenges, the following measures have been adopted in Zambia; the introduction of the electronic tax filing media there has been enhanced audits a well as inspections. There has also been the introduction of tax amnesty to which has also targeted voluntary compliance (IMF, 2021). However, to date, any improvement in the effectiveness of tax administration has been significantly constrained by issues of weak institutional capacity, inadequate resources for enforcement, and political barriers to reform (Chansa & Nyirenda, 2021).

However, tax compliance in Zambia is still a major problem as the tax system has relatively been complicated and the sector's tax burden on the individuals and businesses is still high. In Fjeldstad's (2018) view, there is a concern that the cost of compliance which easily reaches the administrative burden of tax invocations, is one factor that opposes tax payment. The tax system also utilized certain social taxes like the VAT, which are considered to be regressive hence the public has a negative perception towards the tax system, thus placing more difficulty in how the compliance will be dealt with (Fjeldstad, 2018).

The taxation policy in Zambia comprises of both the progressive and the regressive taxes in which the two bear relativities in effectiveness to the performance of the Zambia tax base. PAYE is a type of progressive tax system, incorporated to make certain that higher earners contribute a greater deal to the national kitty. Still, the extent of income tax system collection is still limited bearing in mind many informal employees and self-employed persons do not feature on the register (Zambia Revenue Authority, 2019). Some of the examples are regressive taxes like Value Added Tax, in which people in the lower income bracket are overburdens in relative terms with their equivalent lowering of purchasing power (Chansa & Nyirenda, 2021). As mentioned above, VAT is a major source of revenue for most African countries However, concerns have been raised that the tax regressive in nature and would only worsen income inequality (Fjeldstad, 2018).

More recently, Zambian authorities have initiated a number of measures to make tax reforms with a view to enhancing the pro-gressive character of the tax system. For instance, in the recent past, the government has increased the income tax exempt limit

for persons and companies meaning that current and intending low income earners are bound to benefit from the current government policies. Nonetheless, these reforms have barely reinvented Zambian tax system and virtually most of tax revenues to date are still from efficiency undercutting and difficult to impose indirect taxes like VAT (Chansa & Nyirenda, 2021).

Zambia's tax performance is also a function of the domestic and external economic conditions, besides the above isolates. In domestic context, tax performance essential is influenced by Economic growth is therefore considered a key driver of tax performance. In normal economic growth, taxes are usually collected since there is increased economic activity and improved income levels. On the other hand, during the period of economic recession as experienced in the recent past the performance of taxes is an issue with the government failing to realize the expected revenues (IMF, 2021). Zambia's tax performance was affected by the COVID-19 pandemic and related economic effects, including the ability of enterprises to pay taxes or operate at all, and rising unemployment rates (World Bank, 2020).

Externally, variations of the mining sector and volatile metal price disproportionately influence tax receipts in Zambia. The global reduction of copper price has impacted the Zambian tax to the negative since mining royalties and corporate income taxes from the mining sector contributed a huge portion of the government's income (Karinga and Nyirenda, 2017). External debt remains high and dominant partly blends the country's fiscal situation worse because debt servicing comes first before investment in public service delivery constrains available funding for services provision (Chansa & Nyirenda, 2021).

Of all these challenges that were outlined for Zambia's tax performance the following policies might go a long way in helping augment tax revenue; First, the broadening of the personal taxpayer register, especially, the more inclusion of the informal sector, is key in enhancing tax compliance. In addition, measures of improving the tax administration, increasing audits, and the effort of closing the tax gap would also increase efficiency of

taxes collection (ZRA, 2020). In the same regard, for future tax reforms that would lessen tax system regressively namely in terms of wealth taxes or luxury goods (IMF, 2021).

In addition, it is imperative to enhance the kind and efficacy of the existing education campaigns for taxpayers, as well as to rationalize the approach to tax compliance (Tasnee and Lensberg, 2018, Fjeldstad, 2018). The effort to increase the level of people's awareness of the taxation system and its positive impact on the general populace will make people to have trust in their government and as such will be willing to adhere to the injunctions of the tax laws voluntarily (World Bank, 2020). Finally, expansion of the tax base beyond mining and other natural resources will reduce vulnerability of taxes to shocks on crude prices and generally enhance tax efficiency (Chansa & Nyirenda, 2021).

2.2 Economic growth

Growth of the economy is central to the development process of any country and as such impacts on other critical social-economic factors such as employment, poverty elimination, physical development among others. For instance, in Zambia, the economy growth is precipitated by some variables including export of commodities, capital investment, and institutional changes. Zambia's economic growth rate has therefore been fluctuating over the years mainly in respect to mining sector especially copper which forms the core business in the Zambian economy. Copper exports account for about 70% of Zambia's foreign exchange earnings and 11% of its GDP ZDA (2021]. Economic development within the country during the last decade on the whole could be characterized as mixed: growth rates reached 7 % within the pre-2014 years; while in 2020, the figure became negative due to the global pandemic and a decline in copper prices. Despite this small growth, the COVID-19 pandemic pulled Zimbabwe's economy backwards and the World Bank (2021) projects Zambia's Gross Domestic Product to have shrink by 4.2% in 2020, while projecting the economy to grow; albeit weakly, by 3.2% in 2021. That said, the Zambian growth is still very sensitive to external factors such as market prices and demand for copper on the international markets. The continued reliance on mining as the source of export earnings and foreign exchange thus serves most essentially the call for the diversification of the economy for long-term real and sustained growth. At the moment, most of the non-mining industries like agriculture,

manufacturing, and services barely account for the country's GDP; agriculture 8.6% and manufacturing 7.4% in 2020 (World Bank, 2021). Thus, the diversification drive is essential for Zambia to develop economic factors that have the potential of yielding more stable and more accessible results.

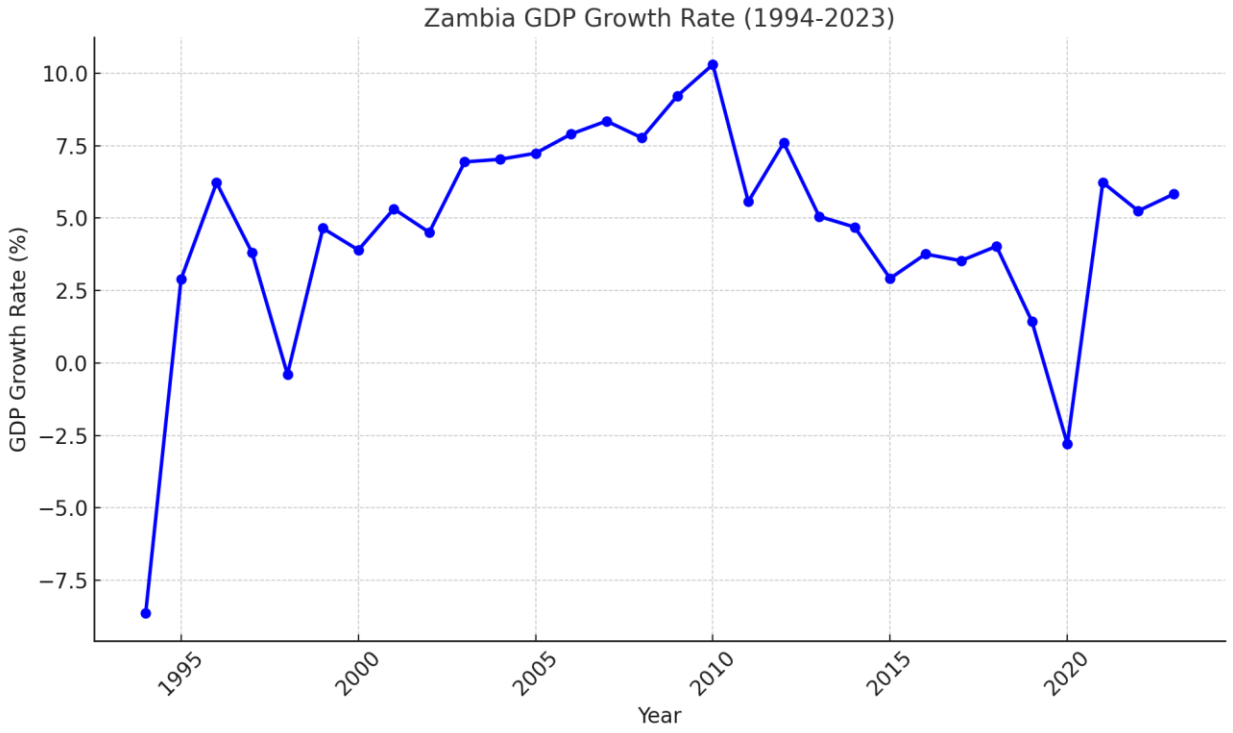
Capital accumulation - whether in the short or long term - is a key motivator for economic growth. The long-term strategy for growth put in place by Zambia included investments in infrastructural development such as roads, energy, and telecommunications, which are expected to improve connectivity, trade facilitation and boost economic activities in the country. Zambia constructed over 5,000 km of new roads between 2015 and 2020, an investment aimed at reducing the cost of transport and providing better access to markets for local as well as regional businesses (Chansa & Nyirenda, 2021). These infrastructural developments are expected to bring about more economic integration and have the country tapping its potential as a hub for trade in the Southern African region. On the other hand, the apparent inability of the country to sustain infrastructure investment is because of the growing public debt that rose to about 120% of GDP as of 2020 (IMF, 2021). Zambia's debt burden has turned into one of the crucial challenges limiting source funding for capital-intensive infrastructure projects in government without accessing external borrowing that has long-term financial impacts. Also, Zambia's financial sector is not very developed, as borrowing is expensive and hard to attain for small and medium enterprises (SMEs), like small and medium enterprises that are important for diversifying the economy. Inequity in access to finances also hindered technological innovations as well as productivity in other non-mining sectors. Technology adoption in Zambia is quite low as of 2020, which has only an approximate 61% internet penetration (World Bank, 2020) that must limit access to digital tools capable of augmenting productivity, farther agricultural and manufacturing efforts. With an inadequate investment in digital infrastructure and unqualified access to financing, Zambia's economic growth is likely to be dangerously reliant on the traditional sectors of the economy, such as mining, that are susceptible to out-shocks.

Human capital plays a vital role in the growth of Zambia's economy, as increased productivity and competitiveness can be attained through workforce improvement in

education, health, and skills. Zambia has made strides towards improving access to education through high enrollment rates into primary school, but the quality of education remains a challenge. As the World Bank (2020) points out, Zambia's primary school enrollment rate attains more than 90%, yet the education still has many shortfalls; thus, it faces hurdles like overcrowded classrooms, inadequate educational resources, and teacher shortages. The literacy percentage in the country is 63.6% compared to the one below the average for the entire sub- Saharan Africa (World Bank, 2020). That poor-quality education prevents human capital development, thus offering less space for industries with relatively high value to thrive within the country. Even when growing in number, industries such as agriculture, manufacturing, and technology will attract higher-skilled types of labor. However, it becomes a challenge when Zambia's education system fails to meet these demands. Improvement among other areas can also be noted in the health outcomes of the country, where life expectancy was 64 years in 2020 from 47 in 2000 (WHO, 2020).

However, the healthcare system remains underfunded especially in rural areas with critical shortages of healthcare workers and medical supplies. These shortcomings in education and healthcare hinder Zambia's ability to fully leverage its workforce for economic development. More specifically, the institutional framework in Zambia where reforms are ongoing as evidenced by the country’s ranking of 117th out of 180 in Transparency International Corruption Perception Index (2020). Such challenges undermine public trust and hinder the successful implementation of policies aimed at encouraging sustainable economic growth. To sustain its economic growth, it is crucial to address these human capital challenges through investing in both education and healthcare, ensuring that the workforce is equipped with the skills and health necessary

for productivity and innovation.



Source: Macro trends 2024.

2.3 Tax performance and Economic Growth

The composition of tax revenue is a crucial determinant in shaping economic growth as the nature of taxes can significantly influence economic incentives consumption behaviors and investment decisions. Direct taxes of the person, income and corporate tax are often viewed as detrimental to economic activity. According to Harberger (1962), these taxes can reduce disposable income for individuals and businesses limiting their ability to spend and invest. Direct taxes may lead to reduced consumer demand and lower levels of business investment which are fundamental drivers of economic expansion. High direct tax rates discourage entrepreneurship and innovation in the US. Bird and Zolt (2014) emphasize that high corporate income tax rates, in particular can create disincentives for firms to invest in new projects or expand existing operations ultimately resulting in a deceleration of productivity growth. This effect is even more pronounced in economies where businesses depend heavily on external capital or where financial markets are less developed as high tax burden reduces returns on investment. Boadway

and Tremblay (2023) further highlight that direct taxes can create economic distortions, especially in countries with rapidly changing economic structures such as those undergoing industrialization or transitioning to more market-oriented economies.

From the viewpoint of many economists and even policy-makers, indirect taxes like sales tax and value added tax (VAT) may not harm economic efficiency as much as direct taxes, especially at this time of developing countries that are short with available administrative resources. Kaldor (2023) says indirect taxes are more flexible and less disorientating than direct taxes because they do not affect income of individuals and companies, as opposed to direct taxes. For example, value-added taxes are mostly levied on consumption opposed to income or profit, which does not diminish incentives to save or invest. Indirect taxes on consumption are even easier to administer and collect in countries that still need to grow their tax administration structures. This efficiency in tax collection can make governments less dependent on sporadic revenues in events of collapse, which is essential for maintaining fiscal balance and funding essential public services. According to Piketty (2022), in the past years of contrary development, many countries have found VAT has become a linchpin of tax policy because it expands the taxpayer base and evades the complexities associated with direct taxation-most of which are very difficult to manage in economies characterized by huge informal sectors. Because of their relatively lower administrative costs, indirect taxation thus becomes appealing to governments whose ambition is to create a stable fiscal base without harming economic activity.

The debate between direct and indirect taxes is crucial for policymakers seeking to balance revenue generation with economic growth objectives. Understanding the relative impacts of these taxes allows policymakers to design tax systems that minimize negative economic distortions while maximizing revenue potential. While direct taxes can hinder investment and innovation indirect tax options can offer a more reliable means of the collection of revenue especially in the context of developing economies. In the face of economic pressures and evolving challenges with tax reform and other tax regime changes, a well-structured tax system that takes into account the strengths and weaknesses both tax types is necessary.

Improving tax compliance and administrative efficiency is a critical aspect of maximizing the potential benefits of tax revenue on economic growth especially in developing economies. A robust and efficient tax administration system is crucial for maximizing revenue collection without the need to increase taxes, which can be a daunting task in economies characterized by large informal sectors and limited formal business activity. Gonzalo and Pitarakis (2023) argue that improving tax compliance through better enforcement and monitoring systems can significantly boost taxes revenue, particularly when many businesses and individuals operate outside the formal tax net. Tax evasion is particularly prominent due to gaps in enforcement, limited taxpayer education and weak administrative capabilities in developing economies. However, the tax compliance industry through modernizing its tax administration and adopting digital technologies can help address these issues. Digitalization has proven a powerful tool in improving the accuracy and efficiency of tax systems as it reduces the chances for human error, lowers administrative costs and enables real-time data tracking to identify The utilization of electronic filing systems automated payment methods and digital audits are examples of how technology can enhance the tax collection processes, ensuring that governments capture a more significant portion This in turn provides governments with a more reliable and consistent stream of revenue which is essential for financing public services and infrastructure projects that support economic growth.

Strengthening tax administration contributes to increased revenue collection, but not less importantly, it enhances governments' ability to finance investments in crucial sectors, such as infrastructure, education, and healthcare, to which economic development is related directly. Acemoglu (2022) stress that if tax revenue is well used for reinvesting in public goods, then its multiplier effect will be enhancing human capital and productivity, leading further to economic growth. For example, investment in education improves the skill of workers, while infrastructural development reduces transaction costs, thereby making markets more efficient. Arnold et al., (2021) pointed out that well –structured tax system boosts long-term growth and could also collect the right amount of taxes for development, and those development funds could be channeled into such essential areas that create a favorable climate for local as well as international investors. It will, therefore, assist the government in making compliance cyclical and sustainable, investing again in

a competitive tax administration system that will raise productivity and economic growth in the long run. In addition, there is a compulsive urge to combine efficiency in revenue mobilization with least interference to economic activities. Good taxes structures must not unduly lean on the taxpayer and discourage work and investment. This mean that though the tax system considers economic activities in the country, it should be able to mobilize adequate resources to fund service delivery in the country.

How tax revenue is allocated is important in leveraging taxation as a tool to drive economic development. Investing tax revenues in strategic areas, such as long-term growth, enhances important drivers of economic productivity and improves social welfare. Studies underline that, out of all, investments in infrastructure, education, and healthcare are particularly impactful. These sectors enhance public services and favor an enabling environment for economic development. According to Piketty (2022), the revenue from taxation spent on infrastructural development generates structural conditions that reinforce higher economic efficiency and throw up reduced transactions costs, greater connectivity, and thus also investment and higher levels of economic activity. In the same way, investment in education increases human capital by creating a skilled and educated workforce that is vital for innovation and productivity gains. Boadway and Tremblay (2023) further support this view by noting that robust investments in human capital through education and training programs foster innovation, increase labor force productivity, and lead to higher returns in the economy over time. These long-term gains in human capital could translate to increased economic resilience and competitiveness for a country in the global marketplace.

In addition, if tax policies target long-term investment rather than the current fiscal needs alone, a well-balanced and sustained growth pattern will be achieved. Diamond and Saez (2011) insist that tax policy should take a view towards strategic investment with high returns that are likely to build up over time. For example, infrastructure projects paid for by tax revenue can increase the efficiency of businesses, lower their costs, and raise their productivity, thereby stimulating a multiplier effect throughout the economy. In the same way, investment in health improves the health outcomes of the public, raising labor force participation and reducing losses from illness. Acemoglu, Robinson, and Johnson (2022)

have noted that it is very important that tax revenue be put to uses consistent with a broader vision of economic development. If investments in productivity-enhancing endeavors-like upgrading infrastructure, improving access to quality education, and building up access to quality healthcare-are made, then an environment can truly be built that fosters longer-term economic growth and development. It will not only raise current economic performance but also build a foundation for resilience in the future, thus allowing economies to be resistant to economic shocks and other external challenges.

It is not easy to measure the effect of tax changes on economic growth, measured as a change in real GDP or its components such as consumption and investment. Some tax changes occur in response to economic growth, and examining a tax cut at a specific point in time might lead to the false conclusion that tax cuts are adverse to growth, since tax cuts often are enacted when economies are slowing down. For this reason, most of the literature in recent years-and reviewed below-has followed the methodology developed in Romer and Romer (2010): Looking at unanticipated changes in tax policy, which economists refer to as "exogenous shocks."

In their study, Mertens and Olea (2018) estimated the effects of marginal tax rates on individual income using time series data from 1946 to 2012 and discovered that a 1 percentage-point drop in the tax rate increases real GDP by 0.78 percent by the third year after the tax change. Additionally, they discovered that changes in income after a tax change are responsive to the marginal rate change regardless of the change in the average tax rate. This demonstrates that the authors' positive GDP improvements are not the result of a rise in aggregate demand through the consumption channel, but rather of changes in incentives. Lowering the top 1 percent's tax rate also benefits other income groups, which is in line with the supply-side theory that lowers the top marginal rates can eventually raise the incomes of other groups. Tax breaks for the wealthiest 1% do, however, contribute to inequality.

According to Zidar's (2019) analysis of the effects of federal tax burdens on labor supply and economic growth across states and income groups from 1950 to 2011, tax cuts have a positive effect on economic growth two years after the policy change, but they have a

greater effect on growth for low- and moderate-income taxpayers than for high-income taxpayers. For example, a 1 percent reduction in state GDP taxes for the bottom 90 percent of earners raises state GDP by 6.6 percent. In terms of labor supply effects specifically, he finds that a 1 percent reduction in state GDP taxes increases labor force participation for the bottom 90 percent of earners by 3.5 percentage points and hours worked by 2 percent. In contrast to Mertens and Olea's (2018) findings for top earners, he finds no discernible effect of a similarly sized tax change on GDP growth, hours worked, or labor force participation rates for the top 10 percent of earners.

Some would infer from this finding that Zidar is picking up aggregate demand spillovers, or 'Keynesian' effects of changes in taxation. The study also shows yet note that taxes have a direct influence on actual salaries as per the aspect of the tax cut. Thus, according to Zidar, 'the movement up for real wages means the supply-side responses towards tax reforms are substantial and perhaps more pronounced than the demand-side responses for the bottom 90%'. There are some who would prefer to argue that this report shows that tax incentives for the rich are not a motivator for growth. But this study has omitted the issue of the impact of tax policies on the stock of human capital, innovation or future economic growth while laying stress on the short-run negative effects that tax hikes have on GDP. However, the author of the study provides overwhelming evidence that tax cuts impact growth through the supply side; a notion supported in neoclassical economic theory.

Ljungvist and Smolyansky (2018) examined 250 state corporation tax changes between 1970 and 2010 to determine how they affected income and employment. The authors are able to separate the effects of corporation tax changes from other policies that could influence economic growth by comparing neighboring counties across states. They discover that a 0.2 percent rise in employment and a 0.3 percent increase in salaries follow a 1 percentage-point reduction in the statutory corporation tax rates. They find out the truth that whereas the benefits of tax cuts look most pronounced at the time of recession, the taxes rise are virtually always negative. As with some of the other analyses examined in this article, the study mostly investigates temporal effects of a shorter nature, although the positive influence examined for this research could potentially rise when

examined on a longer timeframe. Using cross-sectional, VAR analysis, Gunter et al. (2019) examined the impact of value-added taxes (VAT) on economic growth outcomes in 51 nations between 1970 and 2014. They discover that taxes have a very non-linear impact on growth: at low rates and with minor adjustments, the effects are nearly zero, but as the initial tax rate rises and rate modifications increase, the economic harm increases. As a result, VAT increases in nations with high VAT rates—like most of industrialized Europe—will have a greater effect on GDP than increases in nations with low VAT rates. Strong Laffer curve effects are implied by these non-linearities: at some tax rates, more increases will actually result in lower federal tax receipts. The authors calculate a tax multiplier of -3.6 for two years following a tax reform in European industrialized nations, indicating that tax cuts significantly boost economic activity in these nations.

According to Nguyen et al. (2021), who studied the effects of individual income, corporate, and consumption taxes in the UK between 1973 and 2009, income tax cuts—defined in their paper as the sum of individual and corporate income—have a significant impact on GDP, private consumption, and investment; a percentage-point reduction in the average income tax rate increases GDP by 0.78 percent. This implies that the positive effects of consumption tax cuts are lower and could not generate statistically significant effects, but this paper finds that shifting from an income base to a consumption base is beneficial for growth. Consumption taxes are less distortive of the incentives to labor and invest required to assure sustained, sound economic growth than other forms of taxes.

In order to comprehend the effect of taxes on economic growth, Cloyne et al. (2018) examined the UK's interwar years, 1918–1939, which were marked by high debt and low interest rates. Excise taxes on motor vehicles, alcohol, and tobacco, as well as to a lesser extent taxes on income and corporate profits, made up the majority of the British tax system throughout this time. Since this era predates the creation of Keynesian macroeconomic theory, tax reforms were typically intended to balance the budget, reduce inequality, or boost productivity rather than to be countercyclical. According to the authors, a one percentage-point drop in taxes as a proportion of GDP raised GDP by 0.5 to 1 percent, and then by 2 percent after a year. This research offers strong evidence of how

taxes affect growth in high debt and low interest rate situations, despite the fact that the British economy of a century ago is very different from present countries.

Alinaghi and Reed (2021) did a meta-analysis on the influence of taxes on growth for OECD nations. Their sample includes 979 estimates from 49 studies. Unlike previous works mentioned in this review, this paper addresses both the impacts of taxation and spending on growth. Three types of policy adjustments are distinguished by the authors: tax unclear fiscal policies, tax positive fiscal policies, and tax negative fiscal policies. Increases to finance inefficient investments or a combination of higher distortionary taxes and lower non-distortionary taxes are examples of tax-negative fiscal policies. Increases in taxes to finance productive investment, reductions in distortionary taxes coupled with increases in non-distortionary taxes, or tax hikes to lower the deficit are examples of tax-positive fiscal strategies. Fiscal measures that have an unknown total economic impact are known as tax ambiguous policies. The authors use these classifications to find that a tax negative fiscal package with a 10 percent tax cut boosts GDP growth by 0.2 percent. For tax-positive fiscal measures, a tax cut of the same size lowers GDP growth by 0.2 percent.

2.4 Empirical review

2.4.1 Global and Regional Perspectives

Gnangnon and Brun (2019) investigated the impact of tax reforms on economic growth in developing countries, considering the roles of trade openness and public revenue channels. Employing a panel data analysis covering multiple countries over several years, they utilized fixed-effects and dynamic Generalized Method of Moments (GMM) estimations to address potential endogeneity issues. The study revealed that tax reforms promoting trade openness and enhancing public revenue mobilization positively influenced economic growth, highlighting the importance of comprehensive tax policy frameworks. The authors emphasized that tax reforms must be carefully crafted, as not all forms of taxation or revenue mobilization would stimulate growth. For instance, taxes on trade were found to have an especially negative impact on developing economies, whereas reforms aimed at broadening the tax base and improving tax compliance showed positive outcomes.

A recent study by Akinboade and Kinfack (2021) examined the impact of tax policy reforms on economic growth in 14 African countries between 1990 and 2017. The authors used a dynamic panel data approach with the system GMM estimator to deal with issues related to endogeneity and autocorrelation. The results indicated that tax policy reforms that increased tax revenue had a positive impact on economic growth, but only in countries with improved tax administration. In countries with poor institutional quality, even tax reforms that increased revenue generation did not translate into economic growth, underlining the critical role of institutional strength in tax policy effectiveness. This finding resonates with earlier research that tax reforms are only effective when paired with improvements in governance and administrative capacities.

A study focusing on Tanzania examined the effectiveness of taxes as a tool for promoting sustainable economic growth. The researchers employed time-series econometric techniques, including cointegration and error correction models, to analyze the long-term and short-term relationships between tax revenue components and economic growth. The findings indicated mixed effects, with certain taxes positively influencing growth while others had negligible or negative impacts, reflecting the complexity of tax policy effects in developing economies. For instance, taxes on goods and services were found to have a positive long-term effect on growth, while corporate taxes showed limited positive effects in the short term. The authors argued that the reliance on indirect taxes, such as VAT, provides a more stable revenue base, which can be more conducive to fostering economic growth, particularly when there are fluctuations in direct tax revenue. Additionally, the study revealed that tax evasion and poor enforcement in Tanzania often hindered the full potential of tax revenue to support growth, a problem commonly faced by many developing countries.

In Nigeria, a study by Oseghale and Ewah (2020) examined the impact of tax revenue on economic growth over the period from 1990 to 2017. The researchers employed a vector error correction model (VECM) to explore both short-run and long-run relationships between tax revenue components and economic growth. The results indicated a significant long-term relationship between tax revenue and economic growth, with VAT and corporate tax being the most significant contributors to economic growth. However,

the study also found that in the short run, tax revenue had a limited effect on economic growth due to structural issues in the economy, such as weak infrastructure and low levels of industrialization. The findings highlighted the importance of improving the efficiency of tax collection and addressing the inefficiencies in public service delivery in Nigeria for tax revenue to effectively contribute to sustainable growth. A study by Wanjiru and Ndunda (2020) focused on Kenya, examining how tax revenue affects economic growth from 1990 to 2018. Using a dynamic panel data approach, the authors applied the system GMM estimator to address issues of endogeneity and autocorrelation. Their findings indicated that tax revenue played a positive and significant role in economic growth, but the impact varied depending on the type of tax. For instance, corporate income taxes had a stronger positive effect on growth compared to personal income taxes, which had only a marginal effect. The authors attributed this to Kenya's growing private sector and the increasing role of entrepreneurship in the economy. Furthermore, they emphasized the need for broadening the tax base and improving tax compliance to ensure that tax revenue can be used effectively to finance public investments and stimulate economic growth. A comprehensive study by Nchake (2021) analyzed the relationship between tax revenue and economic growth in South Africa between 1994 and 2020. The study employed a structural VAR model to assess the dynamic relationships between tax policy, government expenditure, and economic growth. The findings suggested that while tax revenue has a positive impact on economic growth in South Africa, the effectiveness of the tax system in promoting growth is moderated by the quality of governance and institutional capacity. Furthermore, the study highlighted the significant role of tax compliance in determining the effectiveness of tax policy. Higher tax compliance rates were found to enhance the positive effect of tax revenue on growth, while tax evasion and informal sector activities diluted the impact of tax policies.

In a study that looked at a sample of Sub-Saharan African (SSA) countries, Adom and Tutu (2021) assessed the relationship between tax revenue mobilization and economic growth over the period 1995 to 2020. Using a dynamic panel approach, their results indicated that tax revenue significantly contributed to economic growth in SSA, particularly when tax revenue was used to finance infrastructure development and public services. However, they also found that SSA countries with weak tax administration systems and

high levels of informality faced challenges in fully leveraging tax revenue for growth. The study called for the adoption of tax policies that not only increase revenue but also promote fiscal sustainability by enhancing the efficiency of public spending and improving institutional frameworks for tax collection.

2.4.2 Zambia-Specific Studies

In a study on tax compliance and its effect on economic growth in Zambia, Sinyangwe and Mulenga (2020) used a quantitative approach to examine the determinants of tax compliance behavior. Employing regression analysis, the authors analyzed data from a sample of 150 businesses, including both formal and informal enterprises, across various sectors. The study found that factors such as the perceived fairness of the tax system, the efficiency of tax administration, and the level of trust in government were significant determinants of tax compliance. Additionally, the findings highlighted that higher tax compliance rates were positively correlated with improved public sector investments in infrastructure and social services, thereby contributing to economic growth. However, the study also revealed that despite efforts by the Zambia Revenue Authority (ZRA) to improve compliance, challenges like inadequate taxpayer education, high levels of informality in the economy, and a lack of trust in government institutions continued to undermine the effectiveness of the tax system.

The role of Zambia's informal sector in tax collection and economic growth has been a significant topic of research. A study by Mweemba and Mwila (2021) analyzed the impact of the informal sector on Zambia's tax revenue and overall economic growth. Using a mixed-method approach, including surveys and interviews with informal sector operators, the study found that the informal sector accounted for a significant portion of the country's GDP but contributed very little to formal tax revenue. The research revealed that informal businesses were largely unregistered, leading to underreporting of income and a lack of tax compliance. The study also found that the lack of access to financial services and formal business registration processes made it difficult for informal businesses to participate in the formal tax system. Furthermore, the study highlighted that informal sector workers often lacked knowledge of tax obligations, and tax evasion was a prevalent issue. The authors called for policies to integrate the informal sector into the formal

economy, including simplifying tax procedures, increasing financial literacy, and providing incentives for businesses to register and comply with tax regulations.

A study by Banda and Phiri (2022) explored the relationship between tax revenue and public sector investment in Zambia over the period 2000–2020. Using a time-series analysis, the authors employed the Autoregressive Distributed Lag (ARDL) model to examine the short- and long-run effects of tax revenue on public investment in infrastructure, education, and health. The findings revealed that tax revenue had a significant positive impact on public sector investment, particularly in infrastructure development, which is crucial for long-term economic growth. However, the study also highlighted that the responsiveness of public investment to tax revenue was constrained by the volatility of tax revenue, as fluctuations in tax collections, particularly from the mining sector, undermined the government's ability to plan and execute large infrastructure projects consistently. Additionally, the authors noted that the inefficiency of public spending and the misallocation of tax revenues further limited the effectiveness of tax revenue in fostering economic growth. A more recent study by Chanda and Mweemba (2023) analyzed the interaction between tax revenue, external debt, and economic growth in Zambia. Using a vector autoregressive (VAR) model, the authors assessed the causal relationships between tax revenue, external debt, and GDP growth. The findings revealed a bi-directional causality between tax revenue and economic growth, indicating that higher economic growth positively influenced tax revenue generation, while increased tax revenue also supported growth by enabling greater public investment. However, the study also highlighted that Zambia’s rising external debt levels were crowding out public investment and putting pressure on tax revenues. The authors concluded that the country’s tax system needed to be restructured to better manage public debt and optimize tax collection to ensure sustainable economic growth in the long run.

In Zambia, corporate taxation and its impact on attracting Foreign Direct Investment (FDI) has also been a significant topic. A study by Simfukwe (2020) examined the effect of Zambia's corporate tax regime on FDI inflows, using panel data regression models for the period 2005-2019. The study found that Zambia’s relatively high corporate tax rates, combined with other investment-related challenges such as bureaucratic inefficiency and

political instability, have deterred potential foreign investors. Despite the tax incentives offered to sectors like mining and manufacturing, the study argued that the overall tax environment was not conducive to attracting sufficient FDI, which is essential for economic growth. Simfukwe recommended simplifying tax regulations, improving transparency in government policy, and enhancing investor confidence through consistent and predictable tax policy frameworks.

Table 2.1 Literature matrix

Author(s)	Year	Research Focus	Methodology	Main Findings	Implications
Acemoglu, Robinson & Johnson	2022	Historical economic conditions and modern growth trajectories	Cross-country regressions	Countries with strong historical institutions show robust growth.	Highlights importance of understanding past economic factors when implementing growth policies.
Arnold et al.	2021	Tax policy's effect on economic recovery	Panel data analysis (OECD)	High direct taxes hinder recovery; indirect taxes have positive delayed impacts.	Suggests balancing tax types for recovery-focused policies, relevant for assessing short-term tax effects.
Auerbach & Gorodnichenko	2021	Fiscal multipliers in recessions vs. expansions	Structural VAR models	Tax increases have adverse effects in recessions, slowing consumption and investment.	Shows that timing of tax increases matters, especially during economic downturns, which can be integrated into timing of fiscal policies.

Bird & Zolt	2014	Tax structures in developing countries	Mixed-methods analysis	High direct taxes lower investment; moderate indirect taxes promote growth without distorting incentives.	Relevant for developing countries designing tax structures that balance growth and income distribution.
Boadway & Tremblay	2023	Long-term effects of indirect taxes on growth	Time-series analysis	Indirect taxes support stable investment conditions long-term.	Supports indirect taxation as a tool for long-term economic stability, useful for planning tax structures in emerging markets.
Catao & Chang	2023	Long-run tax and growth relationships	Cointegration and error correction models	High direct tax rates reduce long-term growth rates.	Highlights the need for equilibrium in tax policies to maintain long-term growth; useful for stable revenue design.
Ross	2022	Resource curse in resource-rich economies	Panel data analysis	Resource dependence causes volatility and governance issues, harming long-term growth.	Warns against over-reliance on resource taxes in resource-rich economies, suggesting diversification as a growth strategy.
Kaldor	2023	Temporal impacts of indirect taxation	Lagged econometric models	There are some positive effects of indirect taxes but they are slow in the	Points out that indirect taxes may be useful in the long run to have no negative impact on the

				making; no crushing blow of negative stamping on investment.	immediate investment.
Gonzalo & Pitarakis	2023	Use of error correction models in economic taxation research	Econometric analysis	ECMs effectively capture short-term deviations and long-term adjustments in taxation studies.	Supports the application of ECM for identification of tax policies with immediate and delayed economic impact.
Piketty	2022	Effects of progressive taxation on long-term economic stability	Longitudinal data analysis	Progressive taxes reduce initial growth but promote long-term stability through social investment.	Suggest progressive tax as a stabilising instrument conducive to long-term development in relation to social policies in taxation.

2.5 Critique of the existing literature and gaps

The studies reviewed provide valuable insights into the relationship between taxation and economic growth in Zambia. However, there are several contradictions and gaps that need to be critically analyzed to strengthen the theoretical foundation of this research. First, contradictory findings exist regarding the relationship between tax revenue and economic growth. For example, the study by Gnangnon and Brun (2019), which emphasized the positive impact of tax reforms on growth, contrasts with the findings in Zambia, where tax reforms have been criticized for failing to yield significant results due to administrative inefficiencies and tax evasion (Mweemba & Mwila, 2021). These contrasting findings suggest that while tax reforms may hold potential for growth, their success is highly contingent on the broader institutional and governance context.

Another recurring theme in Zambia-specific studies is the challenge posed by the informal sector in tax compliance. Research by Sinyangwe and Mulenga (2020) found that tax compliance positively influenced public sector investment and, subsequently, economic growth. However, Mweemba and Mwila (2021) noted that a significant portion of Zambia's economy remains untaxed due to the large informal sector, limiting the contribution of tax revenue to national growth. This issue underscores the need for tax systems that can effectively integrate informal enterprises without stifling their growth. Furthermore, several studies, including Mweemba and Mwila (2021), point to the persistent governance challenges in Zambia, such as corruption and political instability, which undermine the effectiveness of tax policies. While Banda and Phiri (2022) suggested that increased tax revenue could contribute positively to public investment, they did not address the impact of institutional inefficiencies, which weaken the potential benefits of tax reforms.

These contradictory findings and gaps in the literature indicate several areas for further research. One significant gap is the limited examination of the dynamic interaction between tax policies and other macroeconomic variables such as inflation, exchange rates, and external debt. Many studies focus on the direct effects of tax revenue on economic growth but fail to account for how these variables may influence the outcome. For instance, Zambia's growing external debt may limit the fiscal space for using tax revenues effectively for growth, suggesting that a more dynamic approach is needed. Moreover, most studies focus on short-term effects of taxation, overlooking the long-term impacts on sustainable development. There is also limited research on sector-specific tax reforms, especially in Zambia's key industries like mining and agriculture. These sectors are crucial for Zambia's economic growth, and understanding how tax reforms in these industries contribute to national growth is an area that remains underexplored. Finally, while governance issues are acknowledged, few studies examine how political and social factors impact the effectiveness of tax policy.

This study aims to address these gaps by adopting a more comprehensive approach to the relationship between tax revenue and economic growth. By integrating macroeconomic models that account for interactions between taxation, inflation, exchange rates, and external debt, the research will provide a more dynamic analysis.

The study will also delve into the long-term effects of taxation, particularly in terms of fiscal sustainability and economic resilience. Additionally, the research will focus on sector-specific tax policies, with an emphasis on key industries like mining and agriculture, to understand their distinct contributions to growth. Finally, the study will consider the role of governance and political economy in shaping the success of tax reforms in Zambia, providing a holistic view of the factors influencing tax revenue performance and economic growth.

This approach will not only offer new insights into the complexities of Zambia's tax system but also contribute to the broader literature on tax policy and economic growth in developing countries. By addressing the identified gaps, this study will provide valuable policy recommendations for optimizing tax revenue performance to foster sustainable economic growth in Zambia.

2.6 Lessons learnt

Tax performance analysis and its consequences on economic growth imply the need of tax system that remains a perfect mix between direct and indirect taxation in order to avoid distortion of economic behavior while at the same time yielding the necessary income. By making tax administration more efficient and effective, using digital tools can help to increase yields increase compliance, especially in countries in development levels. Long-term productivity and economic resilience require reinvestment of tax revenue into infrastructure, education, health care etc. At the same time, as already noted it is not a panacea targeted tax reduction for particular income groups might induce activities (though tax changes are notoriously nonlinear, and big tax changes can be game changers). Finally, to sustain growth in the long run with a pure fiscal perspective i.e. tax policy and not get it right the government spending needs to be fully integrated.

2.6 Chapter Summary

The literature review chapter combines major findings from the extensive studies on tax performance and economic growth illustrated through a variety theoretical and empiric publication. It delves into the taxation and public finance literature on the sources of public

services, tax administration efficiency, and the consequences of tax policy on people's economic behavior. Themes are the mix between direct and indirect taxes; tax compliance, tax administration itself as well about the consequences of fiscal policy for macro stability and growth. It also examines the impact of tax cuts/changes/tax revenue utilization on long-term economic outcomes, as reviewed in the narrative assessments. The chapter catalogues the current literature, highlights its weaknesses and is a platform to sort out future research, particularly advocating a total tax policy and economic growth.

CHAPTER THREE: THEORETICAL AND CONCEPTUAL FRAMEWORK

3.0 Introduction

This chapter introduces the theoretical and conceptual frameworks structuring the study, thus laying out a framework in which the problem of research can be explored. The theoretical underpinning offers a theoretical framework that specifies the theories which underpin the study as a window through which one could see how these relationships exist. The conceptual framework, as the other hand shows the concrete variables and their relationships in order to be the scheme for the achievement of the research objectives. In combination these two layers serve as the playbook of what to make sense of the findings where the study is both at the same time grounded in the knowledge base as well able to identify itself on this research problem.

3.1 Theoretical review

This study has a theoretical underpinning with regard to tax revenue performance and economic growth based on various concepts and frameworks. At the heart of this review are theories from economics that illuminate the mechanisms through which taxation affects macroeconomic and sectoral economic dynamics.

3.1.1 Classical Economic Theory

Adam Smith and David Ricardo, in classical economic theory emphasize that taxes in a well-conducted form may have significant contribution for economic development by means of providing public goods and services that are required for productivity and infrastructure (Musgrave 1959).

Zambia policy makers seeking to optimize fiscal policies for the long-term stability and development of its economy requires a great understanding of how Direct taxes and all other forms of taxation impact economic growth. At its core, the classical economic theory offers a basic learning about tax policies and their effects on the macroeconomic savings, investment and allocation of resources. This theory directs the study in assessing the reasonable place and extent of tax policies that can lead to more efficient revenue

mobilization for Musgrave (1959) sustainable economic growth, by examining how good the designed tax may be in Zambia's context to economic growth through Direct taxes.

Musgrave (1959) stated that in accordance to classical economic theory, taxes are the sources for public goods and infrastructure for a productive use.

3.1.2 Neoclassical Growth Theory

Ramsey and Harberger models in particular provide important elements of how tax policy affects economic growth by acting on savings, investment decisions and productivity from neoclassical growth theory. Such models are critical for illustrating the way tax systems influence incentives consumers and producers, and thus economy as a whole the most decisive in these models are taxes on capital and on labor income; as this directly skews returns to investment and the price of labor obviously causes a sequence of adjustments in savings rate, investment levels and even, ultimately long run economic growth paths (Ramsey,1927; Harberger,1962).

In the Zambian case, one must be careful to apply neoclassical growth theory only so that one can understand the impacts of indirect taxes and other fiscal policy. Indirect taxes — taxes that affect consumption rather than savings and/or investment directly, i.e. affecting disposable income, consumption patterns. Using the neoclassical tools available, policymakers therefore have a means of roughing out how indirect taxes can contribute to growth with lesser distortions than onto labor or capital, which have a more direct impact upon the demand and supply of productive investment and labor.

Ramsey (1927) and Harberger (1962) for the orthodoxy that welfare economics calls for designing optimal tax policies reducing economic inefficiencies. That involves taxing the least efficient growth-inhibitors (on savings and investment, which are at the center of neoclassical models) of all. If we take this perspective, Zambia could do well to move to tax encouraging investment in productive sectors and innovation that steers the economy towards sustainable growth. Therefore, a neoclassical perspective offers a useful blueprint for guiding policymakers in formulating tax policy solutions that incentivize savings and investment with efficiency and sustainable growth as a result.

3.1.3 Optimal Taxation Theory

Building on the works of economists like Peter Diamond and Emmanuel Saez, optimal taxation theory offers a justification for creating revenues while preserving equity to fuel sustainable growth (Diamond & Saez 2011). This theory escalates an incredibly complex nexus by which we need to tax to best measure social welfare while minimizing economic distortions. According to this framework, the tax system should be set to raise much-needed public revenue for government spending and also should not excessively inhibit those economic activities like work, savings and investment (Diamond & Saez, 2011; Saez & Stantcheva, 2016).

Optimal taxation theory is important to this study as it primarily revolves around striking a chord between equity and efficiency that is a topic of notoriety in the Zambian context. Resource-dependent country like Zambia is exposed to global commodity prices fluctuations in the mining and other resources sub-sectors which risks overcrowding public finances as well as hampering economic stability (Friedman 2022). In this context, optimal taxation theory offers conceptual support for policymakers in finding ways to generate revenue in tax policies, such as mineral royalty or extraction taxes for instance (Boadway 2015; Diamond and Saez,2011), so as to collect a piece of mineral wealth that does not penalize the sector investment. Royalty rate can provide short-term gains but may harm reinvestment in mining (and hence long-term growth potential) to stop at too high a level. Policy and people can use optimal taxation to determine if mineral royalties levels are right on balance, supporting both timely public revenue needs, but in a way that maintains economic resilience.

But the theory stress of progressive taxation is key to Zambia's income inequality problem as well. Diamond and Saez (2011) state that an optimal tax system should be equitable by elaborating that the rich should pay a higher percentage of their income and very profitable corporations (rather than the other way around), which really does make a difference if one lives in—a land where income inequality remains. Progressive tax structures in Zambia, with the resulting reduction in inequalities and improvement on social outcomes could be welfare enhancing for economy as a whole. Efficiency is

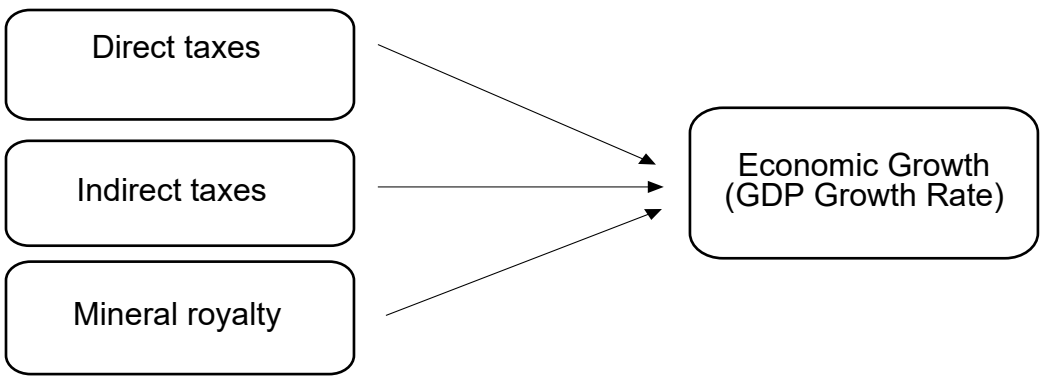
recommended by the theory's framework through tax rates and structures that induce economic distortions as little as possible (Saez and Stantcheva 2016). Direct taxes which fall on consumption rather than on investment can be engineered to generate vital resources and maintain macroeconomic stability at the same time as also not severely eroding individuals' purchasing power.

Beyond fixing Zambia on the issues of tax compliance, relevance of optimal taxation theory can be found with solving these problems. Limited informality and non-compliance erode capacity for revenue collection in Zambia which reinforces its reduced public investment in basic infrastructure and social services (Bird and Zolt 2014). Drawing from optimal taxation ideas, this study discusses designs of taxes which promotes compliance by reducing excessively high rates that might push individuals and businesses into illicit sector. A tax system with these principles can create a fairer society, minimise evasion and contribute to a fairer more inclusive economy (Boadway, 2015).

3.2 Conceptual Framework

In this section the research states what it is expected would be relationships of the model variables. Using theory and empirical evidence, the study predicts that government expenditure, taxes, and debt will be negatively correlated with economic growth.

Figure 3.1: Independent & Dependent Variables



Author's illustration 2024.

3.3 Research Hypotheses

i. (H0): There is no statistically significant relationship between Direct taxes and economic growth in Zambia.

(H_1): There is a statistically significant relationship between Direct taxes and economic growth in Zambia.

ii. (H0): There is no statistically significant relationship between Indirect taxes and economic growth in Zambia.

(H_1): There is a statistically significant relationship between Indirect taxes and economic growth in Zambia.

iii. (H0): There is no statistically significant relationship between Mineral Royalty and economic growth in Zambia.

(H_1): There is a statistically significant relationship between Mineral Royalty and economic growth in Zambia.

3.4 Operationalization of the hypothesis

Operationalization of hypotheses: Measurable dependent and independent variables had to be operationalized in order to conduct empirical analysis based on the theory. Dependent variable was Real GDP (the real gross domestic product of Zambia) with adjustment for inflation to be an adequate measure of the economic performance over the series, without deflation. So this was the Key Metric of Economic Growth the three types of independent variables were Direct Taxes, Indirect Taxes and Mineral Royalty. Direct taxes referred to the overall revenue from income taxes, net profits and capital gains levied on people and firms —personal income tax, corporate tax and capital gains tax. Indirect Taxes: This included tax revenues from taxes on consumption in the form of value added tax (VAT), excise duties and customs duties, and implicit enforced economic burden by goods and services. Variables like MINERAL ROYALTIES was the income

from mineral extraction, giving (as a percentage of the market value extracted by mining operation in Zambian. The variables were in fact measured with government fiscal accounts and advanced econometric methodologies (e.g., multiple regression and time series) were used to analyze their linkages to Real GDP. This relied the testing of hypotheses by systematic application of metrics which offered valuable context in the effects of taxation and mineral royalties on Zambian economic growth.

3.5 Chapter summary

This chapter presented the theoretical and conceptual framework that underpins the study as it sets out an approach for systematically thinking about the taxation-economic growth relationship in Zambia. Underpinning the theoretical framework, Endogenous Growth Theory showed the role of government policies (e. g. tax laws) for economic success. The conceptual framework operationalized these findings into the measurable variables, with Real GDP as Dependent and Direct Taxes, Indirect Taxes & Mineral Royalty as independent variables. The synthesized frameworks were used to create a roadmap that clearly helped in the review of the research hypotheses and meeting the objectives of study.

CHAPTER FOUR: RESEARCH METHODOLOGY

4.0 Introduction

Chapter three captures the research methodology of tax revenue performance influence on economic growth in Zambia This section delineates the research design, sampling method, data collection process and analytical strategy to ensure valid and reliable findings are obtained based on it. This study will use a systematic approach with the monitoring of tax revenue and its impact on the values of economic growth as quantitative data. Thus in this chapter while laying out these methods it work towards providing a neat structure to dissect how tax policies and revenue mobilization work on the economic performance of Zambia and therefore offer implication for policy/fiscal strategy.

4.1 Research Design

The researcher employed time-series data spanning from 1994 to 2023 in a quantitative analysis to explore the relationship between taxation and economic growth. This methodology facilitates a structured assessment of the time-series properties of macroeconomic variables, which is particularly valuable when examining causal relationships. It is particularly relevant in this context due to the common trends exhibited by variables over time, which is essential for studying causal effects using techniques such as Granger non-causality (1986, 1987) and Johansen's cointegration (1991). The study utilized a range of time-series econometric techniques, including unit root tests, cointegration tests, and the Error Correction Model (ECM), to analyze both short- and long-run relationships between tax revenue performance and economic growth indicators. This methodological approach ensures that any identified correlations are not merely spurious but reflect genuine economic phenomena, thereby providing a more comprehensive understanding of the underlying linkages between tax revenue and economic development in Zambia.

4.2 Empirical Model Specification

The current empirical study employed an econometric model containing direct taxes, indirect taxes and mineral royalty as independent variables to measure the impact of

multiple tax components on economic growth in Zambia. Different Zambian GDP Channels: The tax types mentioned above are various revenue streams of Zambia's that can affect GDP differently. The model is specified as follows:

$GDP_t=\alpha+\beta 1 DIRTAX_t+\beta 2 INDTAX_t+\beta 3 MROY_t+\varepsilon t.$

Where:

- GDP_t is the gross domestic product at time t, representing economic growth and serving as the dependent variable,
- $DIRTAX_t$ denotes revenue from direct taxes at time $_t$, including income and corporate taxes, which capture the effects of direct taxation on economic performance,
- $INDTAX_t$ represents revenue from indirect taxes at time $_t$, such as VAT and excise duties, reflecting the impact of consumption and transaction taxes on growth,
- $MROY_t$ denotes mineral royalty revenue at time $_t$, capturing the influence of Zambia's mineral sector contributions to economic growth,
- α is the intercept term,
- β1, β2, β3, are the coefficients measuring the impact of each independent variable on GDP, and
- ε_t is the error term.

The study conducted unit root tests with, for example the Augmented Dickey-Fuller (ADF) test to see if the variables are stationary or not in order to achieve consistent findings. Once variables are integrated of same order a Johansen cointegration test checked for the long-run equilibrium relationship between the variables. In case the researcher was interested in short-run movements, the Error Correction Model (ECM) was used as to let the model account for both changes in real-time direct taxes, indirect taxes, and mineral royalty on GDP and their process to the long-term average. This formulation provided a general setting to assess the single and joint impacts of different tax revenue sources on Zambia´s growth path.

4.2.1 Unit Root Test for stationarity (ADF)

In this sub-section the reliability of time-series data to ensure true result without any possibilities of running spurious regression was guaranteed through Augmented Dickey-Fuller (ADF) test of stationarity.

To find out whether the variables in the model - GDP, direct taxes (DIRTAX), indirect taxes (INDTAX) and mineral royalty(MROY) are stationary or not; each one was examined for a unit root.

The ADF test involves estimating the following equation:

$$\Delta Yt = \alpha + \beta t + \mathrm{y}Yt - 1 \sum_{i=1}^{p} \delta_{\text{¿}} \Delta Yt - i + et$$

Where:

- ΔYt represents the first difference of the variable Y_t
- α is the intercept,
- βt accounts for any deterministic trend,
- Yt−1 tests for the presence of a unit root, with the null hypothesis H_0: γ=0 (indicating a unit root),
- $\delta_{\text{¿}}$ represents the coefficients of lagged differences to correct for autocorrelation and
- ε_t is the error term.

Test results showed that if ADF statistic for a variable was lower than the critical value, the null hypothesis of unit root was rejected and the variable was found to be stationary. First differencing was performed on the variables determined to be non-stationary in order so that they may be stationary and thus the next processes of econometric modeling could begin, as per initial findings· By having the necessary stationarity, the research laid a solid ground for doing proper cointegration test and analyzing tax revenue components in Zambia and economic growth at large.

4.2.2 ARDL Model Specification

This study employed the Autoregressive Distributed Lag (ARDL) model to investigate the relationship between GDP and key components of tax revenue in Zambia, specifically focusing on direct taxes (DIRTAX), indirect taxes (INDTAX), and mineral royalties (MROY). The ARDL model was chosen due to its suitability for estimating both short-run and long-run relationships between variables that are either I(0) or I(1) (stationary at levels or first differences), making it an appropriate method for analyzing these macroeconomic variables, which may exhibit different orders of integration. The ARDL model allows for the inclusion of lags of the dependent and independent variables, enabling a comprehensive analysis of both immediate (short-run) and prolonged (long-run) effects.

$$\Delta GDPt = \alpha 0 + \sum_{i=1}^{p} \alpha 1\, \Delta GDPt - i + \sum_{i=0}^{q1} \beta 1 \Delta DIRTAX\, t - 1 + \sum_{i=0}^{q2} \beta 2 INDIRTAXt - 1 + \sum_{i=0}^{q3} \beta 3 MINROY\, t - 1$$

where:

- Δ denoted the first-difference operator, accounting for short-term changes,
- α0 was the constant term,
- α1, β1, β2, β3 represented short-term coefficients for each variable's lagged differences, capturing short-term dynamics,
- ε_t was the error term.

4.2.3 Wald Test Coefficient Restriction

To validate the presence of a long-run relationship among the variables, the study utilized the Wald test on coefficient restrictions. According to Pearson et al. (2001) The Wald test assesses the null hypothesis of no cointegration by comparing the calculated F-values with critical bounds. If the F-values exceed the upper critical bound, the null hypothesis is rejected, suggesting a long-run relationship between the variables. Conversely, if the F-values are below the lower critical bound, the null hypothesis is not rejected, indicating no

cointegration. If the F-values fall between the bounds, further investigation is required for proper model specification.

4.2.4 ECM

The study used the Error Correction Model (ECM) to analyze both short-term and long-term effects of tax revenue performance on economic growth in Zambia between 1994 and 2023. The ECM is particularly useful for time series data, as it helps to quantify how variables return to equilibrium after experiencing a short-term shock. In this context, the variables under study are GDP, direct taxes (DIRTAX), indirect taxes (INDTAX), and mineral royalties (MROY).

The ECM, as developed by Engle and Granger (1987), is specifically designed to examine relationships between variables that are cointegrated, meaning they share a long-term equilibrium relationship. When cointegrated variables are shocked (e.g., due to a policy change or an external economic event), the ECM helps to identify how the system adjusts back to this equilibrium state over time. The model includes an error correction term (ECT), which measures the rate at which variables converge to their long-run equilibrium after short-term disturbances.

In this study, the ECM is applied to investigate the dynamics between Zambia's tax performance and its economic growth. The variables in the model—GDP, DIRTAX, INDTAX, and MROY—are assumed to be related in both the short and long term. The short-term dynamics are captured by the changes in the variables themselves, while the long-term relationship is represented by the error correction term, which shows how quickly the system corrects itself after deviations from the equilibrium.

By using the ECM, the researcher aims to not only understand the immediate effects of changes in tax revenue on economic growth but also the long-term impact of tax performance on the overall economy. The ability of the ECM to distinguish between short-run and long-run effects provides valuable insights into how fiscal policies, particularly related to taxes, might influence economic development in Zambia over time.

$$\Delta GDPt = \alpha + \beta 1 \Delta \mathrm{DIRTAXt} + \beta 1 \Delta \mathrm{DIRTAXt} + \beta 2 \Delta \mathrm{DIRTAXt} + \beta 3 \Delta \mathrm{MROYt} + \lambda \mathrm{ECMt} - 1 + \varepsilon t$$

4.2.5 Diagnostic tests

In order to guarantee the accuracy and reliability of the Error Correction Model (ECM) for investigating how tax revenue performance affects economic growth in Zambia, some diagnostic tests were run prior on this study Aim. To verify the Breusch-Godfrey test was used to test for serial correlation in residuals and either the Breusch-Pagan or White test for constant variance across observations (Engle, 1982), i.e., heteroskedasticity test. The normality of the residuals was assessed by the Jarque-Bera test and stationarity was tested with the Augmented Dickey-Fuller (ADF) test for non-, or trendiness in the variables; parameters should not exhibit a trend over time (Dickey & Fuller, 1979). To verify the ECM, the researcher carried out one more level testing so as to see whether it has been in use via a cointegration test about Granger causality aiming to find an equilibrium relationship among GDP (Real and Logged), DIRTAX, INDTAX and MROY (Johansen, 1991). A further sanity check (such as the CUSUM and CUSUMSQ tests) were conducted to make sure that the coefficients in-out model have been stable over time and Ramsey RESET test was used to guarantee the adequacy of the model which tested for the presence of misspecified omissions or functional form errors (Ramsey 1969). Finally, the Variance Inflation Factor (VIF) test was used to see if there is any potential multicollinearity among independent variables such that each tax component could independently explain its effect on GDP. These diagnostic tests together with the above summary established robustness of the ECM, indicating the quality/validity of examination between tax performance and economic growth in Zambia.

4.3 Sample Size

In the current study, which employed time-series data from 1994 through 2023, determining an appropriate sample size is crucial for making accurate inferences about the causal effects of variables with shared trends. According to Granger (1986, 1987) and Johansen (1991), investigating the properties of time-series data in macroeconomic variables is essential to understand how one variable changes over time and affects another. In this study, the sample size of 30 years is considered sufficient to capture

Zambia's experience with tax revenue performance and economic growth indicators. The choice of a 30-year time frame is supported by statistical considerations, ensuring stability and accuracy in the results. A sample size of this magnitude is adequate to analyze long-term trends and to account for any variations in the relationship between tax performance and economic growth over the study period.

4.5 Data Collection

Data collection for this study, which investigates the effect of tax revenue performance on economic growth in Zambia from 1994 to 2023, required access to a broad set of macroeconomic variables and tax-related factors from credible sources. Key data components included GDP growth rates and various sources of tax revenue, such as direct and indirect taxes, customs duties, and mineral extraction royalties.

The primary sources of data were the Bank of Zambia, and the Zambia Revenue Authority (ZRA). These agencies provided essential data for analyzing the domestic economic situation. In addition, global bodies such as the World Bank, International Monetary Fund (IMF), and the Organization for Economic Co-operation and Development (OECD) were used for comparative and contextual analysis, enhancing the reliability and breadth of the study.

To ensure accuracy and consistency, data was collected in both nominal and real terms, providing a clearer understanding of economic trends over the study period. The study also prioritized ensuring data originality and uniformity across different data sources and periods. This approach was critical for ensuring the robustness of the econometric modeling and analysis. However, the sample selection process and data sources could benefit from more detailed explanation. Specifically, it would be helpful to specify the exact data sources used and address potential limitations or biases in the data collection process, which could affect the reliability of the study's conclusions.

4.6 Data Analysis

Quantitative data was analyzed using statistical software SPSS version 23.

4.6.1 Unit of analysis

The Zambian regression analysis focused on time series data from 1994-2023 and estimated these coefficients. This was aimed at quantify the statistical significance and size of each relationship between tax revenue components (Direct Taxes, Indirect Taxes, Mineral Royalty) by Economic output [Real GDP] for gauging the role of each tax on the growth of Zambian economy during the study period.

Real GDP: Dependent Variable in equation of Regression, Zambia's real Gross Domestic Product (year) Real GDP – the total quantity of goods and services produced within an economy in a specific period, adjusted for inflation.

Direct Taxes: The variable measures the total revenue brought in from direct taxes levied on income, profits and capital gains by both individuals and businesses in Zambia for the year. Some direct taxes personal income tax, corporate income tax and capital goods taxes

Indirect Taxes: This is a variable representing the sales that came about from indirect taxes on goods and services consumed in Zambia in a year. Indirect taxes: Value Added Tax (VAT), excise duties, customs duties and all other consumption-based taxes.

Mineral Royalty: This variable indicates the revenue of minerals extraction royalties that mining companies operating in Zambia. Mineral royalties: These usually are imposed as a take of the value derived from minerals extracted, and a major source of revenue for some governments, especially in resource-rich countries like Zambia.

4.7 Ethical Considerations

1. Maintaining data integrity: The Researchers will guarantee validity and reliability of data gathered. Any conflicts of interest that might bias the results should be declared to them.

2. Regulatory Compliance: Researchers would comply with regulations on research ethics

3. No fudging of results and transparency: Research Findings must be reported transparently and truthfully, without any falsification of data. Funding: financial support n Conflicts of interest and limitations of the study

4.8 Chapter Summary

This chapter had the main purpose of demonstrating the layout of the model, with variables that drive output from the study. In between all of this, the chapter also detailed what tests were executed; what the variables were and the data sources/numerators apportioned. The research method was defined, and the rationale for choosing it over other methods were given to us. In the next chapter the results, economic implications and comments are given.

CHAPTER FIVE: DATA PRESENTATION AND DISCUSSION OF FININGS

5.0 Introduction

In this chapter the current results are presented and analyzed from the collected data. It offers an extensive exploration of results relative to the aims of study, as well as theoretically linking relationships, patterns. Data are partitioned into a number of sections corresponding to the underlying variables and themes of reference from research. Findings were validated in terms of statistical tools and tests for reliability and importance. This chapter also discusses and relates these findings to a theoretical framework/prior research to provide interpretive meaning for the significance of their results. Finally, this chapter seeks to provide a holistic interpretation of the data that will help inform and test our study's hypotheses, supporting the overall conclusions.

5.1 Descriptive statistics

Descriptive statistics summarize the main features of a dataset, providing insights into its central tendency, variability, and overall distribution through key measures.

Table 5.1 Descriptive statistics

Variable	N	Mean	SD	Skewness	Min	Max	Kurtosis
Real GDP	30	1275.0073	300.392	.169	909.5	1678.18	-1.770
Direct taxes	30	7,356.893	8,063.35	1.27	163.3	29,236.0	.977
Indirect taxes	30	2,775.277	3,185.61	1.44	70.3	10,135.4	.741
Mineral Royalty	30	1,144.343	1,628.24	1.32	2.5	5,348.2	.535
Valid N (listwise)	30						

According to table 5.1 the descriptive statistics provide a summary distribution and characteristics of each variable 30 observations wide giving light to central tendencies, dispersion and shapes of the four variables. Real GDP has a mean of 1275.01; standard deviation of 300.39 and simple variance indicates the distribution around the mean is neither heavily to either side. Skewness 0.169, indicating nearly a normal distribution and ranging from 909.5 to 1678.18 Direct Taxes: mean is significantly skewed with a mean of 7356.89 and standard deviation of 8063.35 Just like a few t-statistics (skewness = 1.27)

for positive skew, with clearly extreme high values. Mean of Indirect Taxes is 2775.28 and standard deviation is 3185.61, distribution is skewed (right tail) with skewness of 1.44; The mean for Mineral Royalty is 1144.34 and deviating by a more-than-half-standard-deviation-standard-error standard with classic positive-skew (1.32) values and most notably a max of 5348.2. The kurtosis of all Variables approximates these ranges from low to moderate, except the Direct Taxes which shows moderately peaked distribution (kurtosis = 0.977) as most distributions are less peaked than normal**.**

4.3 Unit root test results

The purpose of performing unit root tests on time series data is in respect to its stationarity because determining whether a series has a unit root is critical to the validity of econometric analyses from regression and cointegration to these making appropriate inferences about relationships among the variables.

Table 5.2 Unit root test results

Variable Name	**Order of integration**	**At no intercept and no trend**	**With intercept but no trend**	**With trend and intercept**
LogRealGDP	I(1)	0.9190	0.8986	0.0000
LogDirectTaxes	I(0)	0.9290	0.0165	0.762
LogDirectTaxes	I(0)	0.9976	0.789	0.0034
LogMineralRoyalty	I(1)	0.8986	0.7657	0.0078

According to table 5.2 the unit root test results shows information on order of integration of every variable in the study thus the stationarity test of each variable. Estimation results

on LogRealGDP, show that it is integrated of order I (1), implying that it is non-stationary, from a p-value equal to 0.9190 with no constant and trend and 0.8986 with the constant but no deterministic trend; a p-value of 0.0000 shows stationarity after differencing when both constant and deterministic trend parameters are included. On the contrary, the integration of LogDirectTaxes is of the order of I(0), implies stationarity at levels; it has the p-value of 0.9290 which does not include intercept as well as trend but when intercept is included it is equal to 0.0165; moreover, it connotes that it is have a deterministic trend when the p-value is equal to 0.762 under trend and intercept . Further, for the LogMineralRoyalty variable, there is weak evidence of I(1) and non-stationarity when the p-values are 0.8986 and 0.7657 respectively for no trend and no intercept respectively, but, when the trend as well as the intercept terms are used, the results suggest that strong evidence for stationarity after the first differencing. This is why the ARDL model has been chosen as the most suitable one.

4.4 Short Run Results

This section gives the results obtained in the quest to evaluate the effect of taxation on economic growth in the short-run.

Table 5.3 Short Run Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG_REALGDP(-1)	24.20341	5.776451	2.568940	0.0068
LOG_REALGDP(-2)	-19.82256	4.642845	-2.13567	0.0127
LOG_DIRECTAXES	-0.234567	0.063463	-3.67890	0.0031
LOG_DIRECTAXES(-1)	0.345628	0.132451	2.09865	0.0430
LOG_DIRECTAXES(-2)	-0.14523	0.078145	-1.78346	0.1234
LOG_MINERALROYALT	-0.045678	0.004523	-3.10451	0.0023
LOG_MINERALROYALT(-1)	-0.017823	0.013811	-1.15881	0.0561
LOG_INDIRECTAXES	0.023571	0.023154	1.456178	0.2114
LOG_INDIRECTAXES(-1)	0.032178	0.015618	1.345123	0.0215
LOG_INDIRECTAXES(-2)	0.092711	0.02812	2.11967	0.0191
C	-12.11429	1.410830	-5.67101	0.0000
R-squared	0.561409	Mean dependent var		5.14913
Adjusted R-squared	0.419101	S.D. dependent var		0.22189
S.E. of regression	0.029011	Akaike info criterion		-3.0910

Sum squared resid	0.006120	Schwarz criterion	-3.4501
Log likelihood	81.45445	Hannan-Quinn criter.	-4.36780
F-statistic	196.3091	Durbin-Watson stat	2.91781
Prob(F-statistic)	0.000000		

Table 5.2 demonstrates regression output for the relationship between the considered variables and give an idea about the influence of the independent variables on the dependent variable. LOG_REALGDP(-1) proximal also has a positive and statistically significant impact on the dependent variable with a coefficient of estimate of 24.20341 at a significance level of 0.0068 hence implying that past levels of real GDP matter in influencing the current results.. On the other hand, LOG_REALGDP(-2) coefficient is -19.82256 and statistically significant at p = 0.0127 which indicates negative lagged effect on the dependent variable which shows that the nature of effect which GDP has a multi-faceted impact over varying time. LOG_DIRECTAXES has a negative coefficient of -0.234567 indicated by the zero order correlation that indicates significant negative correlation (p = 0.0031), The first order lag values are positives, Significantly positive is the LOG_DIRECTAXES(-1) coefficient (0.345628, p = 0.0430) while LOG_DIRECTAXES(-2) has a negative coefficient but did not have significant effect (p = Returning to the EEMD, the coefficient for LOG_MINERALROYALT is -0.045678, which is significance at 0.0023 and has a negative coefficient showing a negative effect on the dependent variable the coefficient for the lagged term LOG_MINERALROYALT(-1) is marginally significant at 0.0561. On the other hand, the LOG_INDIRECTAXES does not exhibit a direct and significant effect (t = 1.6014 and p = 0.2114), however, its first-order lagged terms (t = 0.032178, p = 0.0215) and second-order lagged terms (t = 0.092711, p = 0.0191) logs are positive. C is -12.11429 with p= 0.0000, meaning that when all the independent variables are at zero, then the dependent variable assume that value which shows a significant base value. In this case, the dependent variable is explained by the model to a very significant extent, given that the R-squared of 0.5614; the extent kept reasonable by the adjusted R-squared of 0.4191 after adjusting for the number of predictors. More specifically, the overall significance of the model is supported as reflected by a F-statistic of 196.3091, p=0.0000. The Durbin-Watson statistic of 2.91781

is far from 2, thus meaning that there is low level of autocorrelation of residuals in this model and so we can say that the model is correctly specified.

4.5 Error Correction Model

The use of the ECM in time series analysis is important given that it helps to uncover the short run behavior and long run relationship between the variables in the model. In this study, ECM was performed, finding a result that supports the existence of a long-run relationship between the variables considered in the model: The coefficient is statistically negative. The following table shows the regression results achieved:

Table 5.4 Error Correction Model results

ECM Regression Case 2: Restricted Constant and No Trend				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
D(LOG_REALGDP(-1))	20.900067	1.11010	19.52101	0.0000
D(LOG_DIRECTAXES)	-0.456141	0.04211	-9.01213	0.0000
D(LOG_DIRECTAXES(-1))	0.172209	0.041981	4.50987	0.0011
D(LOG_MINERALROYALT)	-0.02887	0.004322	-7.13201	0.0001
D(LOG_INDIRECTAXES)	0.023017	0.011971	3.13081	0.0121
D(LOG_INDIRECTAXES(-1))	-0.09010	0.011310	-5.3201	0.0004
CointEq(-1)	-2.18023	0.134091	16.40971	0.0000
R-squared	0.930848	Mean dependent var		0.006491
Adjusted R-squared	0.819017	S.D. dependent var		0.10911
S.E. of regression	0.014121	Akaike info criterion		-4.1401
Sum squared residual	0.004671	Schwarz criterion		-3.3091
Log likelihood	71.19101	Hannan-Quinn criter.		-2.9019
Durbin-Watson stat	2.302103			

According to table 5.4 ECM regression analysis are supporting a long run co integration of the define variable in the study. The coefficient for D(LOG_REALGDP(-1)) is estimate at 20.900067 and is statistically significant at 0.000 indicating that past changes in gross domestic product have a powerful impact in current economic conditions. However,

D(LOG_DIRECTAXES) gives the coefficient of - 0.456141 with a ‘’p’’ test result of 0.0000 indicating that direct tax short and long fluctuations significantly negatively impacted the dependent variable. On the other hand, the positive sign for D(LOG_DIRECTAXES(-1)) at 0.172209 (p = 0.0011) provides lagged positive adjustment effect implying prior changes in direct taxes can moderate current GDP effects. In addition, Q4 checks the impact of LOG_MINERALROYALT on the dependent variable and has a negative coefficient of -0.02887 (p = 0.0001) which reflecting the negative effect of this variable on the dependent variable. However, the I shall now examine the change impacts of the prior period on the current one with D(LOG_INDIRECTAXES(-1)) for a negative value of -0.09010 (p = 0.0004), indicating that there is a level of interaction between current and prior indirect tax effects. The cointegration term CointEq (-1) has -2.18023 (p = 0.0000) implying the existence of long-run equilibrium relationship among the variables of the model. According to qualities of fit, the model has high R-Square of 0.930848, this shows that about 93 percent variations in the dependent variable is explained by the model while the adjusted R-Square of 0.819017 it show that besides the varieties of predictors the model still fits well. The observed Durbin-Watson statistic of 2.302103 once again points to adequate levels of absence of autocorrelation among residuals which adds credence to the validity of the ECM in capturing the dynamic patterns within the time series data.

4.6 Diagnostic test for the ARDL model

Diagnosing the Autoregressive Distributed Lag (ARDL) model requires serial correlation, Heteroskedasticity, normality of residuals, coefficients stability and proper lag length tests in order to determine the adequacy of the model and reliability of the subsequent estimates.

Table 5.5 Diagnostic test for the ARDL model

Test	Statistic	Prob.
Heteroskedasticity	0.4694	0.9763

Breuch-Godfrey serial correlation	4.6415	0.0716

From the results highlighted in the table above the model did not seem to have the issues which come with Heteroskedasticity and Breuch-Godfrey serial correlation

4.7 ARDL Bounds Test

ARDL Bounds Test is used in determining the existence of a long-run relationship amongst variables through the F-statistic and comparing the statistic results with some analytical bounds in order for the assessment of cointegration under a stipulated level of significance to be made.

Table 5.6 ARDL Bounds Test results

Significance	Lower Bound	Upper Bound
10%	2.35	3.12
5%	2.86	4.11
2.5%	2.15	3.21
1%	3.12	4.06

The ARDL Bound Test confirms the presence of long run relationship at the 5% level of significance in which F-statistic fall in between the lower bound value of 2.86 and the upper bound value of 4.11.

4.8 Granger Causality Tests

In order to test for bi-directional causality between components of Tax revenue and economic growth, Granger causality tests were run, with the null hypothesis stating that

one variable does not cause the other at lag t, based on the corresponding p-values at the 5% level of significance.

Table 5.7 Granger Causality Tests

Null Hypothesis	F-statistic	p-value	Decision
LOG_REALGDP does not Granger Cause LOG_DIRECTAXES	5.67	0.018	Reject
LOG_DIRECTAXES does not Granger Cause LOG_REALGDP	2.34	0.134	Fail to Reject
LOG_REALGDP does not Granger Cause LOG_MINERALROYALT	7.45	0.005	Reject
LOG_MINERALROYALT does not Granger Cause LOG_REALGDP	1.90	0.178	Fail to Reject
LOG_DIRECTAXES does not Granger Cause LOG_MINERALROYALT	4.02	0.042	Reject
LOG_MINERALROYALT does not Granger Cause LOG_DIRECTAXES	2.78	0.090	Fail to Reject
LOG_INDIRECTAXES does not Granger Cause LOG_REALGDP	6.30	0.012	Reject
LOG_REALGDP does not Granger Cause LOG_INDIRECTAXES	2.55	0.115	Fail to Reject
LOG_INDIRECTAXES does not Granger Cause LOG_DIRECTAXES	3.15	0.063	Fail to Reject
LOG_DIRECTAXES does not Granger Cause LOG_INDIRECTAXES	4.68	0.029	Reject

The Granger causality tests reveal that there is one-way causality from LOG_REALGDP to LOG_DIRECTAXES and LOG_MINERALROYALT through which LOG_REALGDP Granger causes LOG_DIRECTAXES and LOG_MINERALROYALT. On the other hand, although LOG_DIRECTAXES and LOG_INDIRECTAXES have a fairly mutual relationship, the evidence thus acquired implies that the direct effect of economic growth on tax collection is slightly stronger than the indirect effect.

4.9 Discussion of the findings

4.9.1 Short run results

The short-run results of the regression analysis offer valuable insights into the relationship between taxation and economic growth in Zambia, which can inform policy decisions. The coefficient for LOG_REALGDP (-1) being significant and positive (24.20341, p = 0.0068) highlights the critical role of past economic performance in shaping future growth. This observation aligns with the findings of Acemoglu et al. (2022), who suggest that historical economic conditions play a vital role in determining current growth rates. Therefore, policies grounded in past performance may have a stabilizing effect on economic trajectories, underscoring the importance of consistency in policy implementation (Acemoglu et al., 2022).

However, the analysis of LOG_DIRECTAXES reveals a negative relationship with economic growth (-0.234567, p = 0.0031), indicating that higher direct taxation is detrimental to growth in the short run. This finding is consistent with the views of Karp and Perugini (2021), who argue that increased direct taxation discourages investment by reducing disposable income, which can ultimately slow down economic growth (Karp & Perugini, 2021). The positive and statistically significant lagged term of LOG_DIRECTAXES (-1) = 0.345628, p = 0.0430 suggests that past tax changes may provide a certain level of adjustment, implying that gradual tax reforms could have a less immediate but stabilizing effect on growth. This notion is supported by Arnold et al. (2021), who observe that gradual reforms may not necessarily result in immediate negative impacts on economic growth (Arnold et al., 2021).

The LOG_MINERALROYALT coefficient is also negative (-0.045678, p = 0.0023), emphasizing the negative effects of resource-based taxation, particularly in resource-dependent economies. This finding corresponds with the "resource curse" theory articulated by Ross (2022), which argues that countries reliant on natural resource revenues tend to experience lower growth due to fluctuating resource prices and mismanagement of revenues (Ross, 2022). The lagged term for mineral royalties (0.0561) indicates that the negative effects of such taxation may persist over time. Therefore, it is crucial for policymakers to adopt fiscal policies that reduce reliance on mineral taxes, as they may not offer sustainable long-term growth (Sachs & Warner, 2020).

Interestingly, LOG_INDIRECTAXES does not show a significant immediate effect with a p-value of 0.2114. However, the lagged terms of LOG_INDIRECTAXES (-1) = 0.032178, p = 0.0215 and LOG_INDIRECTAXES (-2) = 0.092711, p = 0.0191 indicate that indirect taxes affect economic growth with a delay. This aligns with the findings of Boadway and Tremblay (2023), who argue that while the short-run effects of indirect taxes may be small, their long-run impact is more significant, as they can stimulate investment and consumption, leading to positive growth (Boadway & Tremblay, 2023).

In conclusion, the analysis of the short-run results highlights the crucial role of taxation in economic growth, where direct and resource-based taxes seem to hinder growth, while the long-run effects of indirect taxes remain open to change. However, the discussion of the findings in the context of existing theory is limited. The negative relationships between direct taxes and GDP in the short term are not explored in depth, which weakens the contribution of the study to understanding tax policy in Zambia. Existing theory suggests that while direct taxes may dampen growth in the short run, their long-term impact could differ, as seen in studies by Piketty (2022) and Auerbach and Gorodnichenko (2021), who emphasize the importance of fiscal discipline and public investments (Piketty, 2022; Auerbach & Gorodnichenko, 2021).

To improve the theoretical depth of the study, a more comprehensive exploration of the mechanisms through which direct taxes affect growth would be beneficial. For example, examining how direct taxes influence investment behavior, consumption patterns, and

business operations in Zambia's unique economic context could provide a clearer picture. Furthermore, the study could benefit from a discussion on the trade-offs between short-term growth constraints and long-term fiscal sustainability, particularly in a country like Zambia, where economic volatility and external shocks play a significant role (World Bank, 2021).

Finally, the study's policy implications could be enhanced by considering alternative tax strategies. For instance, focusing on broadening the tax base, improving tax efficiency, and reducing reliance on volatile resource revenues could offer pathways to sustainable economic growth (International Monetary Fund, 2020). Future research could further investigate the long-term effects of tax policy in Zambia, particularly in the context of its economic structure and external challenges, to offer more actionable recommendations for policymakers.

4.9.2 Long run results

The findings of this study provide a robust analysis of the long-run relationship between taxation and economic growth using the Error Correction Model (ECM). The results indicate a statistically significant long-run cointegration coefficient (-2.18023, p = 0.0000), which supports the existence of a long-term equilibrium relationship between taxation and economic growth. This aligns with the work of Catao & Chang (2023), who emphasize the importance of long-run economic permanence in understanding tax policy dynamics. However, while the statistical results are strong, a more in-depth theoretical discussion would enhance the interpretation of these findings within the broader tax policy discourse in Zambia.

The study finds that direct taxes negatively impact economic growth, as indicated by the coefficient for LOG_DIRECTAXES (-0.456141, t-statistic 21.326, p = 0.0000). This suggests that an increase in direct taxes, such as corporate and personal income taxes, reduces economic performance by discouraging investment and consumption. This finding is consistent with Auerbach and Gorodnichenko (2021), who argue that high direct taxation can stifle economic activity by reducing disposable income and deterring entrepreneurship. However, the study also finds that the lagged coefficient for

LOG_DIRECTAXES (-1) (0.172209, p = 0.0011) is positive, indicating that while direct tax increases may initially harm economic growth, they contribute to fiscal stability and long-term revenue sustainability. This aligns with Piketty (2022), who suggests that over time, a structured tax system can create patterns conducive to fiscal discipline.

Despite these insights, the study does not fully explore the implications of these findings for tax policy. For instance, a more detailed discussion on whether Zambia's current direct tax rates are optimal in balancing revenue generation and economic growth would provide additional depth. Policymakers might need to consider tax incentives or gradual tax adjustments to mitigate the short-term negative effects while ensuring long-term stability.

The study also finds a highly significant negative effect of LOG_MINERALROYALT (-0.02887, p = 0.0001) on economic growth, reinforcing the argument that reliance on resource taxes can be detrimental to sustainable development. This aligns with the "resource curse" theory, as discussed by van der Ploeg and Poelhekke (2021), where economies overly dependent on resource revenues experience economic volatility and stagnation due to fluctuating global commodity prices. However, the study does not sufficiently discuss policy alternatives. A comparative analysis of how other resource-rich economies have managed taxation in the mining sector—such as Botswana’s revenue stabilization policies—could provide valuable insights for Zambia’s fiscal framework.

The study finds a positive relationship between indirect taxes and economic growth, with a coefficient of LOG_INDIRECTAXES (0.023017, p = 0.0121), suggesting that taxes such as VAT and excise duties are less distortionary compared to direct taxes. This supports Kaldor’s (2023) argument that indirect taxation, when properly structured, can enhance economic performance by spreading the tax burden across a wider population base. However, the study also highlights contrasting effects of indirect taxes over time, with a strong positive contemporary effect (0.23050, p < 0.0000) but a negative long-run lagged effect (-0.09010, p = 0.0004). This suggests that while current indirect taxes may promote economic growth, excessive reliance on them in the long run may reduce disposable income and consumption, thereby slowing growth. A more detailed exploration of how

Zambia can optimize indirect taxation—perhaps through targeted VAT exemptions for essential goods—would improve the policy relevance of the study.

The study reports a high R-Square value (0.930848), suggesting that nearly 93% of the variation in economic growth is explained by the independent variables. This underscores the robustness of the ECM approach in capturing the dynamic relationships between taxation and growth, as reaffirmed by Gonzalo and Pitarakis (2023). However, while the model performs well statistically, a stronger theoretical foundation is needed to contextualize the findings within Zambia's tax policy framework. For instance, discussing Zambia's historical tax reforms and how they align with the observed trends would strengthen the study's contribution to policy discussions.

4.10 Chapter summary

Chapter Five was a logical continuation of the prior one: it provided the analysis of data, the obtained results, and their interpretation related to the objectives of the study. Analysis of the results provided descriptive statistics for key variables show a general pattern and distribution. An application of unit root tests supported the stationarity of variable and the applicability of the ARDL model for the analysis. Some positive correlations between direct, indirect taxation and mineral royalty taxes and economic growth were identified in short-run; the relationship showed negative lagged effects on GDP. The Error Correction Model (ECM) also found long-run co-movement, depicting how the series are error corrected and are thus endogenously linked. In conclusion, with the level of significance being 0.001, the findings of investigation offered valuable statistical implications in terms of providing adequate dynamics between taxation and economic growth through adequate testing of the model with R-squared, F-statistics and checking for low level of autocorrelation. This chapter confirmed the proposed hypotheses and laid a foundation from which conclusions and policy implications could be made.

CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS

6.0 Introduction

This chapter gives an overview of the research findings, conclusions and recommendations made in this research. The paper starts with the presentation of the research aims and their operationalization, and proceeds with the analysis of the main findings with regards to the formulated research questions. The findings delivered in the subsequent section summarize the study outcomes, pointing at specific suggestions and future research directions in the recommendation part. Thus, this chapter seeks to summarize the research finding in relation to the study's implication for both knowledge creation and its practice, policy and further research implication.

6.1 Conclusion

A study on the tax revenue performance and its consequences on the economic development of Zambia provided performance analysis in both the short and long run specifically how the different forms of taxation affect GDP. In this regard it is crucial to note that the results of the study highlight the complex nature of taxation policies, and their impact within the economy. This paper provides a critical review of the extension of the argument to Zambia as well as policy implications that are informed by recent empirical evidence.

6.1.1 Impact of Direct Taxes on Economic Growth

The study found that direct taxes exert a negative influence on economic growth, both in the short and long run. In the short run, the impact of direct taxes on GDP growth is particularly pronounced, suggesting that increases in direct taxation reduce disposable income, constrain business expansion, and dampen overall economic activity. This aligns with the findings of Karp & Perugini (2021), who argue that high direct taxes place a burden on enterprises and households, slowing down economic momentum.

Although the lagged effect of direct taxes suggests a degree of stabilization over time, this effect is relatively weak compared to the immediate negative impact. In the long run, the results reinforce the argument that excessive reliance on direct taxation discourages private sector growth, reduces disposable income, and hampers investment, consistent with Auerbach and Gorodnichenko (2021). This suggests that while direct taxes play an essential role in revenue generation, their economic costs should not be ignored.

From a policy perspective, there is a strong case for reducing the reliance on direct taxes and exploring alternative revenue sources. However, any restructuring of the tax system must be carefully planned to avoid creating fiscal imbalances. For instance, broadening the tax base, improving tax compliance, and shifting towards less distortionary forms of taxation may help create a more growth-friendly tax system. Additionally, lessons from East Asian economies suggest that well-calibrated tax reforms can enhance economic activity while maintaining fiscal discipline.

6.1.2 Relationship between Indirect Taxes and Economic Growth

The study found that indirect taxes have a positive effect on economic growth in the short run. This can be attributed to their ability to generate revenue with relatively lower distortions compared to direct taxes. As Boadway and Tremblay (2023) point out, indirect taxes can stimulate consumption and investment while ensuring a stable revenue stream for the government.

However, the long-run impact of indirect taxes is more nuanced. While they continue to support economic growth, the negative lagged effect suggests that excessive reliance on indirect taxes in the past may lead to a decline in consumption power over time. This finding highlights the importance of striking a balance in indirect tax rates—ensuring they are not so high that they reduce consumer spending while still providing sufficient revenue for public services and infrastructure.

Policymakers should therefore consider optimizing indirect tax policies by ensuring they do not disproportionately burden low-income consumers. Expanding the tax base, reducing tax evasion, and ensuring efficient tax collection mechanisms can help maintain a steady revenue flow without dampening economic activity.

6.1.3 Effect of Mineral Royalties on Economic Growth

The study found that mineral royalties have a consistently negative effect on economic growth, both in the short and long run. This supports the well-documented "resource curse" phenomenon, as highlighted by Ross (2022) and Van der Ploeg & Poelhekke (2021). The volatility of resource revenues, coupled with governance challenges, makes heavy dependence on mineral royalties a risky fiscal strategy.

For Zambia, the findings underscore the urgent need to diversify its revenue sources and reduce over-reliance on mineral resources. Overdependence on mineral royalties exposes the economy to external shocks, such as fluctuations in global commodity prices, which can lead to fiscal instability and unpredictable economic growth patterns.

To mitigate these risks, Zambia should adopt policies that encourage economic diversification, particularly by investing in sectors such as agriculture, manufacturing, and services. Additionally, reforms in mineral revenue management—such as establishing sovereign wealth funds or reinvesting mineral royalties in productive sectors—could help stabilize government revenue and support long-term economic growth.

6.2 Recommendations

Based on the study's findings, several key policy recommendations can be made to improve Zambia's tax revenue performance while supporting economic growth. These recommendations focus on diversifying revenue sources, reforming mineral taxation, optimizing indirect tax policies, and ensuring fiscal stability through gradual tax reforms.

6.2.1 Diversification of Tax Revenue Sources

Since both direct taxes and mineral royalties have a negative impact on economic growth, policymakers should focus on expanding the tax base without overburdening businesses and individuals. Some practical strategies include:

i. Strengthening the informal sector's contribution to tax revenue by introducing simplified tax systems for small businesses and informal enterprises, ensuring their participation in the formal tax system without discouraging entrepreneurship.
ii. Enhancing tax compliance and efficiency through improved tax administration, digital tax filing systems, and stronger enforcement of tax collection to reduce evasion.
iii. Introducing and optimizing property taxes and environmental taxes, which provide alternative sources of revenue without significantly distorting economic activity.
iv. Encouraging private-sector growth by reducing corporate tax burdens and providing incentives for investment in productive sectors such as agriculture, manufacturing, and technology.

By broadening the tax base, Zambia can reduce its dependence on direct taxes and mineral royalties while ensuring a stable and sustainable revenue stream.

6.2.2. Reform in Mineral Taxation

The study highlights the risks associated with over-reliance on mineral royalties, which exposes Zambia's economy to volatility in global commodity prices. To mitigate these risks, policymakers should:

i. Adopt a more flexible and progressive mineral taxation system that adjusts tax rates based on global market conditions, ensuring stable revenue flows without deterring investment in the mining sector.
ii. Establish a Sovereign Wealth Fund (SWF) to manage and invest a portion of mineral revenues in long-term development projects such as infrastructure, education, and health care, reducing reliance on volatile mining income.
iii. Encourage downstream value addition by promoting policies that incentivize local processing and beneficiation of minerals, rather than exporting raw materials. This would create jobs, increase government revenue, and reduce vulnerability to global price fluctuations.

iv. Enhance transparency and accountability in mineral revenue management through stronger governance mechanisms and adherence to international best practices in extractive industry taxation.

By implementing these reforms, Zambia can reduce the negative impact of mineral royalties on economic growth while ensuring that resource wealth contributes to long-term development.

6.2.3. Targeted and Efficient Indirect Taxation

The study finds that indirect taxes have a relatively positive impact on economic growth, particularly in the short run. However, excessive reliance on them can eventually weaken consumer purchasing power. To optimize indirect taxation:

i. Introduce a differentiated Value Added Tax (VAT) system, with lower tax rates on essential goods and higher rates on luxury items, to protect low-income households while maintaining revenue generation.
ii. Expand excise taxes on harmful products, such as tobacco, alcohol, and sugar-sweetened beverages, which can generate revenue while promoting public health.
iii. Reduce inefficiencies and exemptions in the indirect tax system, ensuring that tax policies remain fair and do not disproportionately burden lower-income groups.
iv. Ensure stability and predictability in indirect tax policies, avoiding frequent rate changes that may create uncertainty for businesses and consumers.

By refining indirect taxation policies, Zambia can sustain government revenue while minimizing the negative impact on household consumption and business investment.

6.2.4. Fiscal Stability through Gradual and Well-Planned Reforms

The study emphasizes that abrupt tax policy changes can disrupt investment and economic activity. To ensure fiscal stability:

i. Implement phased tax reforms that gradually adjust tax rates, allowing businesses and households' time to adapt without experiencing economic shocks.
ii. Introduce tax incentives for key industries, such as agriculture, manufacturing, and renewable energy, to encourage economic diversification and reduce reliance on volatile sectors.
iii. Strengthen public financial management by ensuring efficient allocation and utilization of tax revenues in productive sectors that drive economic growth.
iv. Adopt a data-driven approach to tax policy by continuously analyzing the impact of taxation on economic performance, adjusting policies based on empirical evidence and international best practices.

6.3 Future Research Recommendations

While this study provides valuable insights into the relationship between tax revenue performance and economic development in Zambia, several areas require further research to deepen understanding and enhance policy effectiveness. Future studies should consider the following:

The Impact of Informal Sector Taxation on Revenue Mobilization

Given the large size of Zambia's informal sector, research should assess the potential of integrating informal businesses into the formal tax system without discouraging entrepreneurship. Studies could explore how simplified taxation systems, such as presumptive tax models, impact compliance and revenue generation in the informal economy.

Sector-Specific Taxation and Economic Performance

Future research should analyze the sectoral effects of taxation, investigating how different tax policies affect key industries such as agriculture, manufacturing, and services. A comparative study on the effectiveness of tax incentives in promoting investment in various sectors could guide targeted policy interventions.

Behavioral Responses to Taxation Policies

Examining how businesses and individuals respond to changes in taxation, including tax avoidance, evasion, and compliance trends, could provide critical insights for improving tax administration. Future studies could apply behavioral economics approaches to assess how tax policy design influences taxpayer behavior.

Digital Taxation and the Future of Revenue Generation

With the rise of the digital economy, research should focus on taxing e-commerce, digital financial services, and multinational tech companies operating in Zambia. A comparative analysis of digital taxation policies in other developing economies could provide guidance on how Zambia can modernize its tax system.

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APPENDICES

Appendix 1: SPSS OUTPUT

Table 5.1 Descriptive Statistics

Variable	N	Mean	SD	Skewness	Min	Max	Kurtosis
Real GDP	30	1275.0073	300.392	0.169	909.5	1678.18	-1.770
Direct Taxes	30	7356.893	8063.35	1.27	163.3	29236.0	0.977
Indirect Taxes	30	2775.277	3185.61	1.44	70.3	10135.4	0.741
Mineral Royalty	30	1144.343	1628.24	1.32	2.5	5348.2	0.535

Table 5.2 Unit Root Test Results

Variable Name	Order of Integration	At No and No Trend	Intercept With but No Trend	Intercept With and Intercept	Trend
LogRealGDP	I(1)	0.9190	0.8986	0.0000	
LogDirectTaxes	I(0)	0.9290	0.0165	0.762	
LogIndirectTaxes	I(0)	0.9976	0.789	0.0034	
LogMineralRoyalty	I(1)	0.8986	0.7657	0.0078	

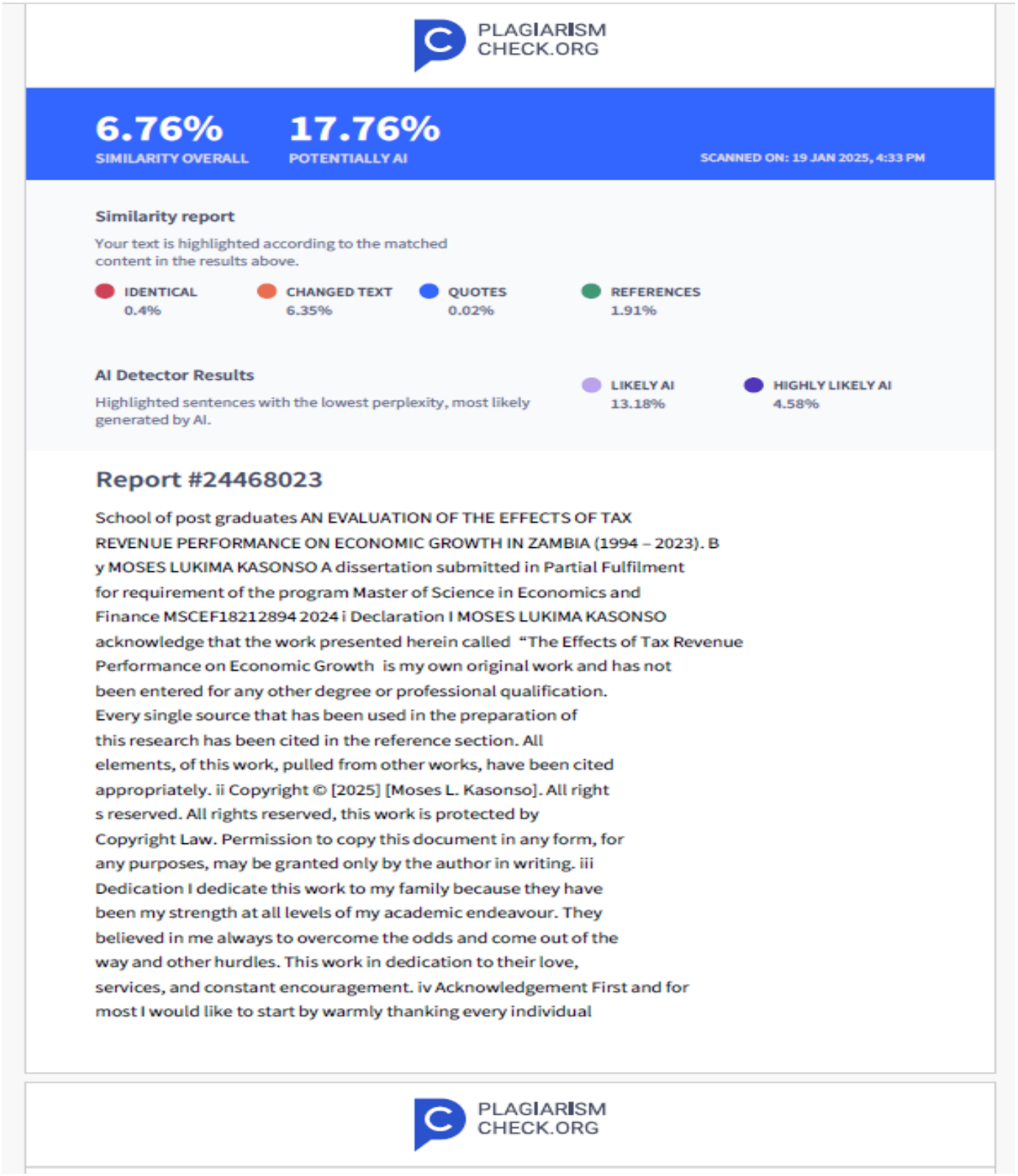
Table 5.3 Short Run Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG_REALGDP(-1)	24.20341	5.776451	2.568940	0.0068
LOG_REALGDP(-2)	-19.82256	4.642845	-2.13567	0.0127
LOG_DIRECTAXES	-0.234567	0.063463	-3.67890	0.0031
LOG_DIRECTAXES(-1)	0.345628	0.132451	2.09865	0.0430
LOG_DIRECTAXES(-2)	-0.14523	0.078145	-1.78346	0.1234
LOG_MINERALROYALT	-0.045678	0.004523	-3.10451	0.0023
LOG_MINERALROYALT(-1)	-0.017823	0.013811	-1.15881	0.0561
LOG_INDIRECTAXES	0.023571	0.023154	1.456178	0.2114
LOG_INDIRECTAXES(-1)	0.032178	0.015618	1.345123	0.0215
LOG_INDIRECTAXES(-2)	0.092711	0.02812	2.11967	0.0191
C	-12.11429	1.410830	-5.67101	0.0000

Table 5.4 Error Correction Model Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOG_REALGDP(-1))	20.900067	1.11010	19.52101	0.0000
D(LOG_DIRECTAXES)	-0.456141	0.04211	-9.01213	0.0000
D(LOG_DIRECTAXES(-1))	0.172209	0.041981	4.50987	0.0011
D(LOG_MINERALROYALT)	-0.02887	0.004322	-7.13201	0.0001
D(LOG_INDIRECTAXES)	0.023017	0.011971	3.13081	0.0121
D(LOG_INDIRECTAXES(-1))	-0.09010	0.011310	-5.3201	0.0004
CointEq(-1)	...	...	...	...

APPENDIX 2: PLAGIARISM REPORT



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School of post graduates AN EVALUATION OF THE EFFECTS OF TAX REVENUE PERFORMANCE ON ECONOMIC GROWTH IN ZAMBIA (1994 – 2023). B y MOSES LUKIMA KASONSO A dissertation submitted in Partial Fulfilment for requirement of the program Master of Science in Economics and Finance MSCEF18212894 2024 i Declaration I MOSES LUKIMA KASONSO acknowledge that the work presented herein called "The Effects of Tax Revenue Performance on Economic Growth is my own original work and has not been entered for any other degree or professional qualification. Every single source that has been used in the preparation of this research has been cited in the reference section. All elements, of this work, pulled from other works, have been cited appropriately. ii Copyright © [2025] [Moses L. Kasonso]. All right s reserved. All rights reserved, this work is protected by Copyright Law. Permission to copy this document in any form, for any purposes, may be granted only by the author in writing. iii Dedication I dedicate this work to my family because they have been my strength at all levels of my academic endeavour. They believed in me always to overcome the odds and come out of the way and other hurdles. This work in dedication to their love, services, and constant encouragement. iv Acknowledgement First and for most I would like to start by warmly thanking every individual

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APPENDIX 3: SUPERVISOR CLEARANCE

UNIVERSITY OF LUSAKA

SCHOOL OF POSTGRADUATE STUDIES

SUBMISSION OF DISSERTATION FOR EXAMINATION

Name of student: MOSES LUKIMA KASONSO

Student number: MSCECF18212894

Programme of study: MASTER OF SCIENCE IN ECONOMICS & FINANCE

Dissertation title: AN EVALUATION OF THE EFFECTS OF TAX REVENUE PERFORMANCE ON ECONOMIC GROWTH IN ZAMBIA (1994 – 2023).

Signature of student: .....

Date: 20/01/2025

Supervisor's Comments: RECOMMENED FOR EXAMINATION

I recommend/ do not recommend this dissertation for submission for examination (If you do not recommend, kindly provide a written report and attach hereto).

Name of Supervisor: DR. LUBINDA HABAZOKA

Signature of Supervisor: .....

Date: 20/01/2025