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TRADE OPENNESS AND ECONOMIC GROWTH IN ZIMBABWE. Is investment in capital goods essential? (1985 TO 2021)

RESEARCH

BY

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APPROVAL FORM

The undersigned attests that they have read the project titled "Trade Openness and Economic Growth in Zimbabwe. Is investment in capital goods essential?" that was submitted by SAMUEL GRIFENI as part of the requirements for the Bachelor of Commerce (Honours) Degree in Economics and have recommended it to Bindura University of Science Education for acceptance.

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DECLARATION

I, Samuel Grifeni, confirm that I am the sole author of this research project and that I have provided complete references for all sources used or quoted. The project does not contain any extracted or replicated content from previous sources without proper attribution.

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DEDICATION

This Research project is dedicated to my Aunty C. Mugoro, uncle Charming, baba Takudzwa' family, baba Atipa's family, uncle Tinaye and all the members of the family for the endless support and contributions towards my academic life. To my parents for the contributions. Love you all!

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ABSTRACT

The purpose of this study is to assess the impact of trade liberalisation on economic growth in Zimbabwe and how the interaction of trade openness and investment in capital goods contribute towards GDP Growth, using annual data collected between 1985 and 2021. While other theories suggest that international trade can be a problem to a country's revenue and technology transfer, the study aims to provide more insight into the impact of trade liberalisation on Zimbabwe's economy. The study uses the Ordinary Least Squares approach to analyse the data and determine the relationship between trade liberalisation and economic growth. The results of the study show a positive relationship between trade liberalisation and economic growth in Zimbabwe which indicates that open trade policies are useful towards economic growth. In addition, the results prove that the interaction of trade openness and investment in capital have positive relationship with economic growth. As a result, the study recommends that policy makers and government negotiators in Zimbabwe introduce measures that encourage exports through development of local production capabilities and fostering growth in efficiency and competitiveness. Additionally, the study suggests that fiscal policies aimed at boosting government expenditure could be put in place to promote economic growth in Zimbabwe. In summary, the study provides insights that could guide policy makers in Zimbabwe to adopt more effective measures to grow the country's economy.

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ABBREVIATIONS AND ACRONYMS

ADF	Augmented Dickey Fuller
AEC	African Economic Community
BG	Breusch Godfrey
BLUE	Blue Linear Unbiased Estimator
CEE	Central and Eastern Europe
COMESA	Common Market for Eastern and Southern Africa
CPI	Consumer Price Index
DF	Dickey Fuller
DQAF	Data Quality Assessment Framework
DSGE	Dynamic Stochastic General Equilibrium
EAC	East African Communities
ETS	Export Retention Schemes
FDI	Foreign Direct Investment
FTA	Free Trade Area
GATT	General Agreement on Tariffs and Trade
GDDS	General Data Dissemination System
GDP/G	Gross Domestic Product Growth
GNU	Government of National Unity
GoZ	Government of Zimbabwe
HO	Hecksher-Ohlin
ILO	International Labour Organisation
NIC	Newly Industrialized Countries
OECD	Organization for Economic Cooperation and Development
OLS	Ordinary Least Square
PP	Phillips Peron
R&D	Research and Development
RBZ	Reserve Bank of Zimbabwe
RGDP	Real Gross Domestic Product
SADC	Southern African Development Community

SAL	Structural Adjustment Loan
SEE	South East Europe
SSA	Sub Saharan Africa
TFTA	Tripartite Free Trade Area
UDI	Unilateral Declaration of Independence
UN	United Nation
UNSD	United Nations Statistics Division
USA	United States of America
VAT	Value Added Tax
WDI	World Bank Indicators
WITS	World Integrated Trade Solutions
WTO	World Trade Organisation
ZIMPREST	Zimbabwe Programme of Economic and Social Transformation
ZIMSTAT	Zimbabwe National Statistical Agency

CHAPTER 1

1.1 Introduction

International trade is regarded as a key driver towards national development through increasing access to the international market and the improvement in local production capabilities necessitated by international competition and access to improved technologies (Nyarota et al., 2015). Its positive impact on social welfare and human development cannot be overlooked, as it offers a diverse range of standards and preferences to individuals (Nyarota et al., 2015). The correlation between trade openness and economic growth has sparked intense debates among policymakers and economists worldwide (Nyarota et al., 2015). The scholarly discourse on the trade policies necessary to foster long-term economic growth holds particular significance for developing countries and those undergoing transitions (Nyarota et al., 2015).Experts and policymakers firmly believe that globalization and trade, driven by trade openness, serve as the primary drivers of growth and development for many developing nations (Dritsakis and Stamatiou, 2016). Furthermore, trade liberalization fosters healthy competition among countries, leading to enhanced productivity. Gries and Redlin (2012) put forth the idea that trade activities, coupled with a country's competitive advantage, facilitate the efficient and effective utilization of resources. By promoting the free movement of capital and trade among nations, trade liberalization introduces fresh ideas, advanced technologies, and encourages innovation. It also attracts foreign direct investment, bolstering economic prospects (Gries and Redlin, 2012).

1.2 Background of the study

Looking back to the 1960s, the Zimbabwean economy has been significantly impacted by sanctions imposed in response to the Unilateral Declaration of Independence (UDI) (Renwick, 1981). From 1965 to 1980, under the leadership of Ian Smith, the British government implemented institutional policies aimed at promoting self-sufficiency and economic independence (Renwick, 1981; Hatendi, 1987). During the period between 1965 and 1974, the Gross Domestic Product growth (GDP/G) experienced an average growth rate of 7 percent. However, the war of independence disrupted economic activities and led to a decline in growth (Davies and Rattso, 1999). Following independence in 1980, the Zimbabwean government implemented measures to address the relationship between economic growth and import capacity. These measures focused on export promotion, resulting in trade growing as a

percentage of GDP by an average of 38 percent, while GDP itself grew at an average rate of 4.5 percent annually from 1980 to 1986 (Nyarota et al., 2015; Davies and Rattso, 1999).

In order to improve economic conditions, the government of Zimbabwe, with the assistance of Bretton Woods Institutions, adopted Economic Structural Adjustment Program (ESAP) in 1990 and the Zimbabwe Programme of Economic and Social Transformation (ZIMPREST) in 1997. These programs placed a strong emphasis on trade liberalization and reduction of government expenditure (GoZ, 1991; Davies and Rattso, 1999). The government implemented trade and economic reforms such as Export Retention Schemes (ETS) and relaxed exchange controls. These actions, among others, led to a decline in GDP growth from 6.98 percent in 1990 to 0.20 percent in 1995. However, between 1996 and 2001, the government reduced expenditure and increased exports, resulting in an average GDP growth rate of 2.25 percent. According to data from the World Bank in 2016, total trade as a percentage of GDP increased from 35 percent in 1990 to 68 percent in 2001. During this period, Zimbabwe's economy was open to trade, allowing domestic individuals and corporations to open foreign accounts, engage in free trading of ETS entitlements, borrow externally, and unify exchange rates.

From 2002 to 2008, the Zimbabwean economy faced hyperinflation, with the most severe period occurring in 2008. Total trade as a percentage of GDP increased significantly during this time, rising from 66.8 percent in 2002 to 109.2 percent in 2008 (ZIMATAT, 2016). In 2008, the GDP growth rate sharply declined to a negative 17.7 percent. However, in 2009, the economy began to recover following the introduction of a multicurrency system, with the United States dollar as the main currency, and the formation of the unity government (Government of National Unity). From 2009 to 2016, the country experienced a GDP growth rate of 6 percent, although imports continued to exceed exports (ZIMSTAT, 2016). The economy saw a small increase in GDP in 2018, primarily due to resources being directed toward election preparations. GDP started to grow again in 2019 and 2020, albeit at a modest rate (ZIMSTAT, 2016).

The economy of Zimbabwe faced a hyperinflation during the period from 2002 to 2008 and it was severe in 2008. During that period, the economy experienced a high increase in total trade as a percentage of GDP from 66.8 percent in 2002 to 109.2 percent in 2008 (ZIMATAT, 20016). In the same year (2008), GDP growth rate decreases sharply to a negative 17.7. After the completion of the year 2008, in 2009 the economy recovered due to the introduction of multicurrency system with the United States dollar being the main currency and also by the

formation of the unity government (Government of National Unity) (GNU). GDP growth rate of 6 percent was recorded during the period from 2009 to 2016 although imports remained above exports (ZIMSTAT; 2016). The economy experienced a small increase in GDP in the year 2018 and was due to the reason that the resources that must be used for growth were used in the election preparations because that was the election year. GPD started to grow in 2019 to 2020 and the increase was not too much (ZIMSTAT; 2016).

The economy of Zimbabwe faced a reduced GDP Growth rates from the years 2019 up to 2021 of 8 percent on average. This was followed the corona virus pandemic lockdowns. The pandemic was severe to the extent that all economic activities was affected and this cause the GDP growth of the country to fall extremely (ZIMSTAT; 2021).

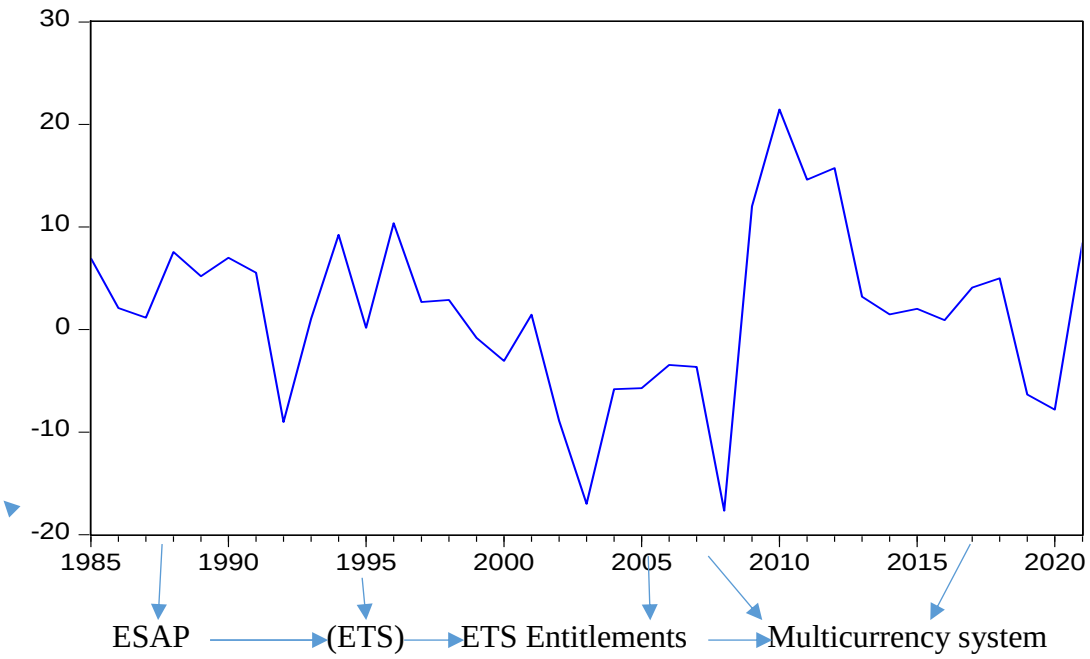
Since 1948, Zimbabwe has been a member of the General Agreement on Tariffs and Trade (GATT), and in 1995, it became a member of the World Trade Organization (WTO), which replaced GATT. The WTO's role is to facilitate trade negotiations, enforce agreements, and resolve disputes among its members (Bacchetta and Janse, 2003). Zimbabwe is also a member of the Southern African Development Community (SADC) and the Common Market for Eastern and Southern Africa (COMESA), regional organizations that promote free trade. As part of these regional arrangements, Zimbabwe has signed bilateral trade agreements with neighbouring countries such as Botswana, South Africa, Mozambique, Namibia, and even non-neighbouring Malawi, with the aim of encouraging trade openness and reducing trade barriers, particularly tariffs (SADC, 2012).

Despite the push towards trade openness, recent evidence suggests that trade reforms may not have yielded the expected results (Nyarota et al., 2015). Zimbabwe's economic history serves as a case in point to further explore the relationship between trade openness and economic growth. Therefore, this study aims to establish a long-term relationship between trade openness and economic growth in Zimbabwe, employing co-integration methods. Given the country's history of declining economic growth, decreasing exports, increasing imports, and inconsistent trade policies, understanding the impact of trade openness and GDP growth becomes crucial for Zimbabwe.

While it is commonly recognized that both exports and imports play essential roles in promoting economic growth, previous research has predominantly focused on exports alone, often perceiving imports as a leakage that drains money from the country and leads to

unemployment rather than economic growth (Jonsson and Subramanian, 2001; Sinha and Simha, 2003; Chen, 2009). However, in a developing country like Zimbabwe, which relies heavily on imports, disregarding the effects of imports on economic growth would be short-sighted, as imports can have significant implications for growth. This study aims to contribute to existing literature by taking into account the impact of imports on growth and incorporating time series data spanning from 1985 to 2021. Previous studies conducted in Zimbabwe have already neglected the effects of imports on economic growth, despite their importance. Furthermore, this study will utilize time series data on trade openness, Gross Domestic Product Growth (GDP/G), Investment in Capital Goods (IKG), Foreign Direct Investment (FDI), Government Expenditure (GVT), Total Labour (TLF), and inflation rates (INF) to examine the relationship between trade liberalization and economic growth.

FIGURE 1.1: GDP/G PROGRESSION



The figure above shows the progression of GDP Growth over the period from 1985 to 2021 and below the years on the horizontal axes are policies introduced by that time in order to recover the GDP growth position.

1.3 Problem Statement

Trade openness is one of the key factors that have been identified to contribute to economic growth in many countries. Zimbabwe is an important case study for evaluating the relationship

between trade openness and economic growth due to the numerous economic and political challenges that the country has faced over the past few decades. The country has experienced a decline in economic growth over the past three decades, with some analysts attributing this to a lack of investment in capital goods. The question arises as to whether investment in capital goods is indeed essential for economic growth in Zimbabwe, and whether there is an interaction between trade openness and investment in capital goods in driving economic growth.

Despite Zimbabwe's efforts to promote trade openness as a means of achieving economic growth, the country has experienced a lacklustre performance in terms of its economy. This raises the question of whether investment in capital goods is an essential factor for achieving sustainable economic growth, and if so, how trade openness can be leveraged to attract investment in such goods in Zimbabwe. Therefore, the problem statement of this dissertation is to investigate the relationship between trade openness, investment in capital goods, and economic growth in Zimbabwe over the period 1985 to 2021, with the aim of identifying policy recommendations that can promote greater investment in capital goods and drive economic growth. Specifically, the study seeks to determine whether investment in capital goods is a necessary precondition for trade openness to promote economic growth and the role of financial development in the relationship between trade openness, investment in capital goods, and economic growth.

1.4 Objectives of the study

The study is carried out paying more attention to the objective of empirically examining the relationship between trade liberalisation and economic growth (GDP/G) in the economy of Zimbabwe. Because of this reason, the study have been carried out in regard with the following sub objective;

- To assess the impacts of trade liberalisation and economic growth in the country of Zimbabwe.
- To assess the effects of investment on capital goods on economic growth using Zimbabwean experience.
- To explain the impacts of foreign direct investment towards economic growth.
- To evaluate government expenditure affects the growth of the economy.
- To explore the impacts of inflation on the GDP growth.
- To explain to effects of labour force towards economic growth (GDP Growth)

- To assess how the interaction of trade openness and investment in capital goods affects the growth of the economy.
- To give recommendation on international trade policies, based on the findings of the study

1.5 Hypothesis

The study was carried on the null hypothesis that: H0: trade liberalisation increases economic growth.

1.6 Significance of the study

Despite the abundance of empirical studies and theoretical advancements examining the impact of trade liberalization on economic growth, there remains a need to explore this relationship further, particularly in developing countries. While numerous studies have been conducted in developed countries, research focusing on the effects of trade on growth in developing nations, such as Zimbabwe, has been limited.

Few studies have specifically investigated the relationship between trade liberalization and economic growth in Zimbabwe. Previous research conducted by Mandishekwa (2016), Gwaendepi, Musara, and Dhoro (2014), and Babatude (2001) has explored the linkages between trade openness and growth, but these studies were primarily based on historical and cross-sectional data. This approach fails to address the current dynamics and challenges faced by the country, as cross-sectional data grouping countries at different stages of economic development may not capture the specific issues related to trade openness and economic growth.

Another challenge arises from the lack of up-to-date information and studies on the impacts of trade activities on growth in Zimbabwe. This knowledge gap has led to the formulation and implementation of trade policies that may have unintended negative effects on trading partners, investors, manufacturers, the population, and the overall economy. To address these challenges, there is a pressing need for an empirical study that examines the relationship between trade liberalization and economic growth, taking into account the current context.

This study aims to fill these gaps by empirically investigating the true nature of the relationship between trade activities and economic growth in Zimbabwe, utilizing time series data spanning from 1985 to 2021. The findings of this study will contribute to the existing body of research,

providing valuable insights for government negotiators, policymakers, and decision-makers in formulating and implementing effective trade policies. Additionally, this study aims to provide a foundation for future research on trade and economic growth, offering guidance to upcoming economists and scholars in tackling trade-related challenges in the future.

The reason behind all these being that there little understanding of how trade practices affect economic growth since a few work was done to examine the link between trade and growth in Zimbabwe.

1.7 Assumptions

This study was carried out based on the main assumption that there is a positive relationship between trade liberalisation and economic growth in Zimbabwe. In other words, the study assume that trade openness contribute more towards economic growth in Zimbabwe.

The study also assumes that economic growth is being affected by other variables or factors that were used in this study which are Investment in Capital goods, Government Expenditure, Foreign Direct Investment, Inflation and Total Labour Force.

1.8 Delimitations

This study aims to investigate the relationship between trade liberalization and economic growth in Zimbabwe from 1985 to 2021, focusing on a country-level analysis. In order to gain a comprehensive understanding of this relationship, the study also examines the contributions of other variables, including total labour, inflation, foreign direct investment, investment in capital goods, government expenditure and the interaction of trade openness and investment in capital goods, to economic growth. However, the primary focus of this research is to quantitatively analyse the impact of exports and imports on the country's growth, as measured by GDP growth (GDP/G)

The choice of Zimbabwe as the main subject of this study is based on its historical significance in implementing trade-led economic growth and development policies. The researcher's in-depth knowledge of the Zimbabwean economy, its economic development trajectory, and trade policies, as well as familiarity with the socio-economic structure, have played a crucial role in selecting this geographical area for the study. Furthermore, Zimbabwe is a small agro-based economy situated in Southern Africa, heavily reliant on the import and export of primary products with its trading partners.

By focusing on Zimbabwe, this study aims to shed light on the specific dynamics and challenges faced by this particular economy in relation to trade liberalization and economic growth. Through a rigorous analysis of the data, the study seeks to provide valuable insights that can inform policymakers, economists, and stakeholders in formulating effective trade policies and promoting sustainable economic development.

1.9 Limitations

Studying the relationship between trade liberalization and economic growth is an ongoing process, requiring continuous observation and analysis of the dynamic linkages between these macroeconomic variables. It is essential to predict the future trajectory of these variables in the long run, enabling proactive measures to be taken to correct any potential shocks. Furthermore, future studies should consider incorporating additional variables that are relevant to studying the link between trade openness and economic growth.

This study primarily focuses on examining the relationship between trade openness and economic growth within the context of Zimbabwe. It is important to note that the findings of this study may not be directly applicable to other countries at a similar level of development, as each country has its unique characteristics and circumstances. Therefore, conducting a broader study encompassing multiple countries, particularly within the Southern African or Sub-Saharan region, would provide a more comprehensive understanding and enable more accurate generalizations about developing countries.

The selection of variables in this study is limited by the availability of reliable data sources. Due to data constraints in Zimbabwe, the study had to rely on a limited set of variables, using data obtained from sources such as the World Development Indicators (WDI) and ZIMSTAT statistics. However, it is important to acknowledge that the data obtained may not be 100 percent accurate or representative of the real situation on the ground. For instance, some figures, particularly those related to inflation from 2006 to 2008, are estimates and may not reflect the true state of affairs.

It is crucial to be aware of these limitations and exercise caution when interpreting the findings of this study. Efforts should be made to improve data collection and accuracy in future research, ensuring a more robust foundation for analysing the relationship between trade openness and economic growth.

1.10 Definition of terms

Gross Domestic Product: It is the market value of all the final goods and services produced within a country in a given time period (Samuelson & Nordhaus, 2010:370).

Foreign direct investment: Foreign direct investment (FDI) is broadly defined by Danziger (1997) as an investment made by a foreign investor to acquire a continuing stake in a business that operates outside of the investor's home country.

Trade liberalisation: The act of eliminating or lessening limitations and obstructions on exchanging goods and services without restraint across different countries is commonly referred to as free trade. This is an essential aspect of economic globalization and is believed to be an effective means of fostering economic progress and advancement.

Ordinary Least Squares: One approach utilized for approximating the coefficients of a linear regression formula that depicts the connection between a dependent variable and one or several independent quantitative variables is known as a common technique (referred to as Ordinary Least Squares). This technique is used for both simple and multiple linear regression models. (Source: Gujarati, 2003)

Investment in capital goods (IKG): Danziger (1997) defines IKG as the amount of capital investment made by the government, businesses, and individuals in the country to purchase physical assets such as machinery, equipment, and infrastructure, which are used in the production of goods and services within the country

1.11 Summary

This chapter put more attention on the introduction of the study area in which a bit explanation of the main study. This chapter also covers other sections which are the background of the study, problem statement, and research objectives, hypothesis, significance of the study, assumptions of the study, delimitation, limitations and definitions of the terms.

CHAPTER 2

2.1 Introduction

More theories that offer different justifications, arguments, and conclusions about the link between trade openness and economic growth are also accessible. While some of the hypotheses revealed a favourable relationship between these two, others suggested a negative relationship between trade and economic growth. According to some theories, there is zero correlation between these two. This section will look at how classical and neoclassical theories, modern trade theories, and endogenous growth models have conceptualized the relationship between global trade and economic growth. Reforms to trade law and practice in developing countries will also be covered.

2.2 Theoretical review

There are more ideas available that provide various justifications, arguments, and conclusions regarding the connection between trade openness and economic expansion. Some of the hypotheses put out a positive association between these two, while others suggested a negative connection between commerce and economic expansion. Some ideas claim that there is absolutely no connection between these two. This part will examine the theoretical perspective of international trade and economic growth as it was represented by classical and neoclassical theories, new trade theories, and endogenous growth models. It will also discuss trade policy reforms in developing nations.

2.2.1 Mercantilist view of trade

According to Blaug (1978), the mercantilist philosophy had a strongly patriotic viewpoint and supported state regulation and centralization of economic activities, including foreign trade. The mercantilist held that a country's holdings of gold and silver were a good indicator of its richness and prosperity. In other words, according to the argument, a nation should have more gold and silver on hand in order to boost exports and cut back on imports. This notion is supported by regulations that limit imports, encourage the storage of gold and silver, and safeguard regional businesses. A country might amass gold and silver at that time by exporting more and importing less since gold and silver served as the medium of exchange for international trade (Blaug, 1978; Pentecost, 2000:4). Greater the gold and silver a nation had the richer and more powerful it was.

Government should do every effort to maximize exports and decrease imports, according to the mercantilist school of thought (Pentecost, 2000:4-5). Imports were thus discouraged in order to have an export surplus, while exports were promoted in order to ensure economic growth. One nation could only benefit at the expense of other nations because no two countries could simultaneously have an export surplus and because the amount of gold and silver available at any given moment was finite (Pentecost 2000:5–6).

Mercantilists believed that commerce should result in a surplus in the balance of payments. In order to achieve a high trade surplus, which the mercantilists defined as an excess of exports—both visible and invisible—over imports, they pushed for the importation of gold, the extension of credit to other nations, or capital exports (Blaug, 1978; Pentecost, 2000:5-7). By pushing producers to focus on items and services that do not benefit from comparative advantage and by encouraging the overproduction of goods and services with high opportunity costs, mercantilism impeded economic growth.

2. 2.2 Trade and growth in the traditional theories of growth

Adam Smith, who developed the idea of the absolute advantage, contributed to the development of classical conceptions. Smith claims that the idea of absolute advantage is the foundation of mutually beneficial commerce (Pentecost; 2000:7). According to the theory of absolute advantage, free trade is the best option for enabling businesses to specialize and devote more resources to the production of the items they can produce most effectively. Companies benefit from economies of scale as a result of this specialized output, which in turn boosts productivity and, ultimately, economic growth (Samuelson & Nordhaus, 2010:342). A free trade system encourages more businesses to innovate since it gives them an incentive to do so. Businesses are able to develop more beneficial products, superior production and delivery methods, and more effective business practices. Businesses can succeed and expand, which will increase national output (Alfonso, 2001). By broadening the market, free trade enabled the division of labour and promoted technical innovation, so facilitating the increase of productivity and total economic growth. Free trade also makes it simple for a country to overcome the limitations of internal trade and the internal market.

2.2.3 Trade and Growth in the Neo Classical theories

This thesis was created by Heckscher-Ohlin, who thought that a nation needed to specialize and pay greater attention to producing and exporting items that matched its factor endowment. The static analytical framework is utilised by this theory, just as it is by the conventional

comparative cost theory (Heckscher, 1919; Ohlin, 1933). By assuming that factor endowment is fixed, this theory differs from other theories in that it predicts that trade patterns and composition will remain constant. According to Neo Classical Theory, all forces of production, including labour, capital, and land, are mobile inside a nation but stationary internationally (Feenstra, 2004: 4-5). Additionally, it is generally expected that things are completely transportable both within and between country and between countries (Heckscher, 1919; Ohlin, 1933. The assumption implies that relative supply of labour and capital cannot be altered by imports and exports of these factors and also rules out the growth pattern in order to alter factor endowment of the nation.

According to the Heckscher-Ohlin model, trade would raise the demand for commodities made possible by the nation's plentiful resources (Feenstra, 2004:36). The majority of developing nations have an abundance of labour, and it is predicted that demand for labour-intensive goods would rise. Free trade was created for developing nations as a platform for learning cutting-edge technologies from developed nations (Feenstra, 2004: 48–56). The Heckscher-Ohlin model also illustrates how free trade will lead to increased aggregate efficiency and, ultimately, economic growth in a country. Production of both items in both nations will alter as a result of the price adjustment (Feenstra, 2004:37–40). Each nation will produce more exports and less imports, which raises the nation's overall productivity.

On the other hand, technological advancement will increase labour and capital productivity, removing diminishing returns and speeding up economic expansion (Solow, 1956). Technological innovation leads to higher output when there is a certain amount of labour and capital available (Solow, 1956). Prices are taken to be constant throughout Solow's theory on growth, and actual output determines the need for money. According to this supposition, the real rewards of capital have an impact on the decision to hold capital stock vs liquid money (Solow, 1956). Free trade also makes it possible for affluent nations to transfer technology and highly qualified personnel to less developed nations (LEDC), which will boost output and spur economic growth.

2.2.4 The Trade and Growth in the endogenous growth theories.

Romer (1986) and Lucas (1988) made bigger contributions to the development of the endogenous growth model, which emphasized the role that capital accumulation plays in long-term economic growth. In contrast to the neo-classical theories of growth, these theories placed more focus on broadly defining capital, which encompassed ideas or information, learning via

experience, and human capital. According to endogenous growth theories, government policies, rather than the capital's falling marginal productivity, determine economic growth over the long term (Romer, 1986; Lucas, 1988).

2.2.5 Trade and growth with Human Capital Accumulation

This idea was developed by Lucas (1988), who proposed a two-sector model of incidental learning through practice. He examined how human capital contributes to growth through international trade in his two sector model. This approach makes the assumption that knowledge is acquired by employees through experience gained at work. Simply put, employees do not choose companies in order to learn or build up their human capital; rather, Lucas (1988) found that employees build up their human capital through unintentional learning. Human capital is considered endogenous since decisions about its accumulation are largely influenced by the dynamic dynamics of the economy (Lucas 1988, Kebede; 2002). Since the development of human capital plays a central role towards growth, this makes growth itself to be endogenous as well. Free trade increases on the job human capital accumulation thereby boosting institutional quality, overall economic growth.

Young (1991) adds to this learning-by-doing strategy and investigates the dynamic impact of global trade on growth. According to Young (Young 1991), less economically developed nations exhibit lower growth rates under free trade than they do under anarchy. According to the concept, short-term government spending on high technology firm subsidies gives the economy a competitive edge over its rival and, as a result, a long-term and growing technical advantage (Kebede, 2002).

The quality of consumption items and human capital both rise at the same pace in a stationary growth path, according to Stockey (1991). The model suggests that enacting free trade policies may delay the rate at which human capital is accumulated due to its effects on investment in human capital accumulation when the country is developing at a sluggish rate under restricted commerce or the autarky (Stockey; 1991). High skilled labour is in high supply everywhere in a free trade economy, which lowers the cost of items produced by high skilled labour and, in turn, reduces the motivation to engage in the building of human capital (Stockey; 1991). The developing nations will eventually lag behind the rest of the world in terms of human capital. This does not mean that free trade is dangerous in developing countries since on one time the static gains from trade exceeds the cost caused by the slower growth rate of human capital.

2.2.6 Trade and growth with technological progress

According to knowledge-driven models developed by Grossman and Helpman (1991) and Rivera-Batiz and Romer (1991), the economy's growth is determined by the rate at which new products are innovated. The growth rate of innovation in the research and development (R&D) sector is dependent on the level of employment and the current body of knowledge. Therefore, the amount of information already present or the number of workers employed in the R&D sector determines how quickly the economy grows. The foundation of knowledge in every country is the same and stays so in the absence of free exchange of ideas (no knowledge spill over). Thus, the growth in the amount of employment in the research and development sector might lead to increased economic growth (Rivera- Batiz & Romer, 1991).

According to models created by Grossman and Helpman (1991), a higher degree of liberalization enables LEDCs to quickly adapt to the technologies being produced in advanced countries and, as a result, to expand in equilibrium more quickly than with a lesser degree of openness. Grossman and Helpman (1991) assert that when a nation engages in free trade, the amount of capital goods employed will approach twice that used prior to the introduction of free trade, and concurrently, the market size for the new products increases twice that of prior to the introduction of free trade.

Additionally, it is suggested by Grossman, Helpman, Rivera-Batiz, and Romer (1991a) that trade liberalization will have an impact on how resources are allocated. Because the country is open to commerce in general, comparative advantage is the factor that determines the migration of resources from one sector to another. The model suggests that rather than importing, the R&D sector's activities is entirely linked to the exporting industry. Free trade also aids a nation in avoiding bad product reputation (Grossman and Helpman; 1991). Additionally, a larger market allows for the availability of intermediate goods at extremely low prices, which in turn promotes R&D initiatives and economic expansion. When there is learning, large market sizes accelerate learning by doing operations (Davies; 1991).

The issue of new product creation and production in high income countries with lower wage rates is well analysed by the product cycle theory (Vernon; 1966; Wells, 1968).In addition, it places more attention on how a product could start out as an export before changing to import at the end of its life cycle. Posner (1961) was the first to analyse the role of processes of imitation and invention in determining the pattern of international trade. Vernon (1966); Wells (1968); and. According to the international product life cycle, the most important factor in determining trade patterns is a rise in market size and technological innovation.

The model highlighted foreign direct investment and claimed that it was the primary channel for technology transfer. Wells (1968) argues that free trade will result in the transfer of technology from highly industrialized to emerging nations, resulting in more efficient production techniques, higher output, and faster economic growth in the recipient nation. This model is useful for policymakers because it allows them to develop advanced policies that will promote exports and decrease import competition, both of which will contribute to total growth.

2.2.7 The New Trade Theories

According to economists Helpman and Krugman's (1985) "new trade theory," trade's effects on economies of scale encourage economic growth. Additionally, by enhancing the best resource distribution amongst the sectors producing materials and knowledge, economic growth is promoted. The major mechanism for explaining the observed increase in trade in relation to income, according to the model, is changes in the distribution of income among industrialized nations. According to the new trade theory (Helpman and Krugman 1985), trade patterns can be explained in terms of rising returns and uneven competition. This provides a theoretical foundation for the increasingly observed intra-industry trade. Companies continue to merge in order to gain from growth while also time would locate hear the markets where transport cost is low.

Long ago, research centred on the micro foundations of global trade, or the factors that influence people to engage in international trade. Melitz's ground-breaking 2003 paper, which models explicitly the export decisions of companies with diverse levels of production efficiency, offered a very significant extension of modern trade theory within a general equilibrium framework. Melitz (2003) also illustrated a fresh source of commercial gain. He explains that when trade barriers are reduced, this stimulates global competition, drives out low-productivity firms that are shielded by barriers, and replaces them with an increase in the output of high-productivity firms. As a result, overall productivity of the country rises.

2.2.8 Trade policies reform in developing countries

As capital goods were eventually produced for both local and export markets, trade policies implemented in previous decades were primarily focused on the proportion of finished and intermediate commodities exported (Makochekanwa, Hurungo, and Kambarami; 2012). High foreign exchange revenues from these initiatives are anticipated, which will lower unemployment and balance of payment imbalances. The majority of developing nations offer a variety of incentives to businesses interested in manufacturing exports, including custom duty

exemptions, VAT exemptions, manufacturing under loan programs, export processing zones (EPZs), and government export subsidies.

2.3 Empirical literature review

Developing countries are now putting trade policies into place to promote their products in the global market, particularly to newly industrialized and wealthy nations (Getz, 2008; Makochenwa et al., 2012). The current goal of trade policies is to quicken industrialisation processes and ease access to international markets (UN, 2007). More regional, bilateral, multilateral, and preferential trade agreements have been strengthened and developed in emerging nations. Among the agreements that have impacted African trade policy are the AEC, SADC, COMESA, the Two WTO, and the East African Communities (EAC).

To solidify the reorientation of their economies and complete the shift to outward economies, the majority of developing nations are actively pursuing trade liberalization and structural reforms. According to Saungwene (2013), the metric should make it easier to allocate resources effectively while taking into account the strengths of each economy. The enhancement of multinational pledges, the transparency, application, and enforcement of current law will inspire trust in the reforms and draw FDI.

Since 2000, the majority of developing nations have removed trade protection between emerging nations and the rest of the world in terms of trade in commodities and services (OECD, 2008). Today's trade policies are based on globalization and trade liberalization, both of which are fuelled by competition. International commerce and export-led growth plans have been primarily blamed for the industrialization and quick expansion of developed and newly industrialized (NIC) nations. The goal of trade policy is to make nations more open, competitive, and export-driven, but in the majority of developing nations, this transformation is still in progress.

One of the most widely referenced studies on the connection between trade openness and growth is the one by Dollar (1992). Based on the two distinct indices of real exchange rate distortion and real exchange rate fluctuation, Dollar (1992) creates a measure of the economy's outward direction. In a sample of 95 developing nations during the years 1976–1985, the indexes all had a negative correlation with growth. The study's outward orientation metric was created using data on relative pricing levels around the globe that Heston and Summers (1988)

had prepared. The Summers-Heston data comprised comparative price indices for similar consumer goods in several nations. According to Dollar (1992), trade openness is positively correlated with economic growth. His findings suggested that trade liberalization could substantially improve growth performance in many poor countries.

In many ways, Rodrik and Rodriguez's (2000) critique of Dollar's study. First off, even if the law of one price applies, equal taxes on import and export will have differing effects on the relative price level. Second, there are significant practical issues with the presumption that the law of one price always applies in the context of free commerce. First off, even if the law of one price applies, equal taxes on import and export will have differing effects on the relative price level. Second, there are significant practical issues with the presumption that the law of one price always applies in the context of free commerce. It is conceivable to examine the cross-country disparities in price levels as a function of monetary and exchange rate policies rather than trade restrictions if the dollar's time horizon (1976–1985 period) is not sufficient to exclude departures from the law of one price that are not related to trade barriers. Finally, some significant growth drivers are not included in Dollar's (1992) growth regression. Despite the objections, Dollar's research is still important for developing countries since the real exchange rate is a crucial element in determining the advantages, direction, and degree of trade openness.

By putting together data on many facets of trade policy, Sachs and Warner (1995) created an index of openness in an effort to address the issue in the literature. To create a Sachs-Warner openness indicator, factors such as the average tariff rate, non-tariff barrier, and monopoly of main exports were among others. They looked at both closed economies and the subset of open economies for growth performance. In conclusion, the regression results from Sachs and Warner (1995) offered convincing evidence that protectionist trade policies negatively affect overall growth performance directly and indirectly by slowing the pace of accumulation of physical capital.

Harrison & Hanson (1999), Rodrik and Rodrguez (2000), and others have harsh criticisms of the Sachs-Warner openness metric. They held that the socialist country dummy and the black market premium, two factors unrelated to trade policy, were responsible for the relevance of the Sachs-Warner openness measure. The developing nations still have the greatest need for the Sachs-Warner openness metric because of the persistence of protectionist trade practices. Certain regulations limit the benefits of commerce and economic progress in certain countries.

Another study by Greenaway, Morgan, and Wright (2002) used a sample of twenty-five developing countries to investigate the effect of trade liberalization on economic growth. According to the findings employing a dynamic panel framework and three different liberalization indicators, liberalization may have a favourable effect on real GDP growth. In their study, Greenaway et al. (2002) demonstrated the "J"-shaped link between trade and growth, with trade initially increasing but later declining at specific levels. However, it appears that the impact will be small and delayed. This is because trade liberalization varies when it is put into effect in terms of its depth and intensity.

In their 2003 study, Wacziarg and Welch focused on emerging and developing economies to examine the connection between trade openness and economic growth. Wacziarg and Welch (2003) updated and expanded the Sachs-Warner openness dummy across the 1990-2000 era using a first-difference in growth technique. These writers came to the conclusion that in the 1990s, this variable was no longer important. However, they looked at the time courses of growth within nations between 1950 and 1998 and came to the conclusion that, on average, after trade liberalization, nations' annual growth rates increased by 1.5 percentage points compared to the period before liberalization. Wacziarg and Welch (2003) attributed all growth accelerations to trade liberalization without taking into account the possibility that other variables might also spur economic growth, hence the outcome was dubious. Additionally, because macroeconomic policy adjustments like the World Bank's structural adjustment loans (SAL) programs and the IMF's structural reforms are typically implemented following economic downturns, many trade liberalization initiatives are also accompanied by other macroeconomic policy changes.

Chen and Gupta (2006) looked into the relationship between trade openness and economic growth in the SADC region from 1990 to 2003. Both generalized method of moment's estimation and generalized least squares specification were used in the investigation. The findings indicated that trade openness had a significant positive impact on regional economic growth over the study period. The researchers also emphasized how education might enhance the impact of openness on sustainable growth by enhancing knowledge and technology spill overs from trade liberalization.

In another study, Marelli and Signorelli (2011) focused on trade dynamics, degree of openness, FDI flows, and specialization patterns for two countries, China and India, using a panel data model from 1980 to 2007 with an instrumental variable approach. They used two stage ordinary

least squares to evaluate the relationships between openness and growth for the two countries in terms of their integration into the global economy. The findings indicated that both nations had high levels of short-term openness while experiencing substantial economic shocks like the global financial crisis of 2008–2009, but they also suggested that opening up and becoming more integrated into the global economy had positive and statistically significant growth consequences. Free trade is therefore the greatest method to restore the world economy to satisfactory growth rates and to maintain the catching-up process of emerging nations. Free trade should be combined with appropriate reforms of the global banking system.

Babatunde (2011) examined the relationships between infrastructure, FDI, and economic growth using a panel of 42 SSA countries from the 1980s to 2003. The results of the panel data technique showed that FDI and trade openness together have an impact on GDP per capita. The results reaffirmed that trade liberalization and FDI inflows both promote economic growth.

Nduka (2013) investigated the relationship between trade openness and economic growth in Nigeria using time series data from 1970 to 2008. Ordinary Least Squares (OLS) and the Engle Granger two-step cointegration procedure were both used. The study found a correlation between trade openness and economic growth in Nigeria. Using a different methodology, Nduka, Chukwu, and Ugbor (2013) empirically assessed and contrasted the causal relationship between trade openness and economic growth in Nigeria in the pre and after Structural Adjustment Programme (SAP) (1970Q1- 1985Q4 and 1986-2011) eras. The unit root and cointegration were found in the study using the Augmented-Dickey Fuller, Phillips-Perron, and Engle-Granger methods, respectively. The cointegration test's findings suggested that trade openness and economic growth in Nigeria have a long-lasting, beneficial relationship. They emphasized the need for emerging nations like Nigeria to recognize more trade integration as a way to promote economic progress.

Additionally, Tahir and Khan (2014) used data from the years 1990–2009 to conduct a study of 22 Asian nations. The two-stage least squares approach and panel econometric methodologies were used to conduct the empirical analysis. The findings demonstrated that trade openness has made a substantial contribution to the progress of developing nations in the Asian region. Trade openness has a favourable impact on regional economic expansion. The poor justifications for protectionism should not frighten developing nations, who are recommended to liberalize trade to boost growth rates.

In Tanzania, a study was conducted by Mkubwa, Mtengwa, and Babiker (2014). The scientists employed data across time from 1970 to 2010. A closed economy period (1970-1985) and an open economy phase (1986–2010) were used to separate the periods. Utilizing the OLS method for estimation regression. The empirical results showed that trade openness had a favourable and considerable impact on Tanzania's economic growth. When compared to the open economy period, this effect was, nevertheless, somewhat more pronounced during the closed economy. It has been reported that Tanzania has had ongoing trade deficits in her accounts since the late 1980s. This has played a part in the outcomes that were seen. The policies of emerging nations should be directed toward increased free trade and the removal of trade barriers in order to achieve economic progress.

Additionally, Gwaendepi, Musara, and Dhoro (2014) conducted study to look into the long-term relationships for Zimbabwe between trade and other macroeconomic factors for the years 1975 to 2005. The ratio of imports to exports to GDP was utilized in the study as a gauge of trade openness. To prove that there is a long-term correlation between trade variables and economic growth, the authors used the Engle-Granger cointegration technique approach. The study's findings suggested a positive correlation between commerce and economic growth. The relationship is made stronger by macroeconomic policy stability since adverse macroeconomic factors like rising inflation can stifle economic growth. An important factor in promoting trade openness was the lowering and abolition of trade barriers and ultimately economic growth

Using the ratio of industry output to GDP as a measure of trade openness, Tahir and Azid (2015) investigated the relationship between global trade openness and economic growth in fifty developing countries between 1990 and 2009. Two stage least squares, fixed and random effects models, and panel data analysis techniques were all used in the empirical research. The article's key finding was that, for developing nations, there was a statistically significant positive association between trade openness and economic growth. Trade openness could be gradually implemented on developing nations in order to achieve long-term economic success.

In the context of the research on endogenous growth, Sakyi et al. (2015) looked at the long-term effects of foreign direct investment and trade openness on economic growth in Ghana (1970–2011). The relationship between foreign direct investment and exports has been crucial in fostering growth, according to the findings of co-integration using the autoregressive distributed lag bounds testing approach. Trade openness has consistently had a positive impact

on economic growth. According to the report, long-term development objectives ought to favour export-led growth methods.

Mbulawa (2015), in contrast, used time series data for Zimbabwe from 1975 to 2012 to perform an empirical analysis of the relationship between economic development and FDI, trade volume, inflation, and capital accumulation. The study's findings that trade liberalization spurs economic growth were reached using the trade openness index, terms of trade, and the vector error correction method. The study's findings showed that trade openness had a strong positive impact on economic growth in emerging countries.

Zimbabwe's admission into the Tripartite Free Trade Area (TFTA) was the subject of a study by Mafudza, Tambudzai, and Kalotay in 2015. In order to quantify the benefits of Zimbabwe joining TFTA, the study examines how responsive Zimbabwe's GDP is to opening trade with TFTA nations who have not been participating in the SADC and COMESA FTAs. The empirical data showed that the nation's total economic growth is increased by the TFTA's more liberalized trade policy.

Mandishekwa (2016) used time series data to investigate the relationship between trade openness, terms of trade, and economic growth in Zimbabwe. The sum of exports and imports as a percentage of GDP was used to determine trade openness. The study tested for causation using vector auto-regressive and Granger causality methods. The results of the study showed that, despite the fact that trade openness has been proven to be favourably connected with economic growth, the GDP itself is primarily responsible for most GDP changes. Shocks to trade openness were a reflection of any changes in GDP. The country should put more effort into liberalizing its economy, but this procedure needs to be carefully thought out.

Gurgul and Lach (2014) focused on both linear and non-linear causal relationships between foreign trade and economic growth in the Polish economy in a different study. In order to account for the impact of the 2008/2009 financial global crisis, quarterly data for the periods 1996-2008 and 1996-2009 separately were used. A constrained VAR model that included GDP, exports, and imports was estimated by the authors. In both time periods, the results of the linear Granger causality tests showed a positive association between the GDP growth rate and the export growth rate, but no such relationship existed between the GDP growth rate and the import growth rate. Additionally, the results of the impulse response analysis showed that a shock from exports resulted in an increase in GDP during the ensuing three quarters.

Were (2015) used cross-country data to experimentally investigate the varying effects of trade on economic growth and investment. The study classifies countries by their levels of economic development in order to account for the varying effects of trade and growth is made up of LDCs, developing, and developed nations. The empirical findings based on several country classifications revealed that while trade has boosted economic growth in wealthy and emerging nations, its effects on LDCs are negligible. To achieve greater growth gains, the structure and pattern of trade in LDCs and emerging nations should be changed.

Musila and Yiheyis (2015) examined the connection between trade openness and economic growth in Kenya using annual data from 1982 to 2009. Both OLS and Johansen Cointegration were used in the study. Measures of aggregate openness and openness induced by trade policy were both utilized good overall trade openness both the volume of investment and the pace of economic expansion. On the other hand, trade policy-induced openness has had a detrimental and significant impact on investment and the rate of economic growth. According to Granger Causality analysis, in the case of Kenya, a change in trade openness combined with an increase in physical capital to alter the nation's long-term rate of economic growth. Liberal trade policies may have a detrimental effect on openness when they increase the cost of intermediate manufacturing inputs, as they did for Kenya during the time of structural adjustment programs.

Khobai, Kolisi, and Moyo (2017) studied the long-term association between trade openness and economic growth in Ghana and Nigeria in a study conducted between 1980 and 2016. The Autoregressive Distributed Lag (ARDL) model was used in this study to examine the long-term connection between the variables. The study's conclusions showed that there was a long-term relationship between the variables in both countries. The results also showed that whereas trade openness has a detrimental effect on economic growth in Nigeria, it has a significant positive impact on it in Ghana. The two countries' divergent outcomes may have resulted from different trade and economic policies that were put in place over time. These results suggested that different policy approaches used in developing nations can result in varied outcomes on openness-economic growth relationship.

According to Tekere (2001), trade liberalization in Zimbabwe under adjustment resulted in a loss in human development, high rates of inequality, the marginalization of the poor, a high unemployment rate, as well as negative total economic growth. The study confirmed that, if implemented strategically, that is, as part of a specific national development agenda, trade

liberalization may be a very successful tool and strategy for fostering growth and enhancing human development.

Yanikkaya (2002) identified a tension between expansion and liberalization. The seemingly unrelated regression method published in Barro (1997) was used to estimate the cross-country growth regressions using a panel of data from 100 developed and developing countries from 1970 to 1997. When they calculated the effect for trade volume indicators, they found a strong and positive correlation between trade openness and economic growth. However, when they factored in the effect of trade restrictions and average tariff rates, their findings revealed a favourable and significant correlation between the degree of trade barriers and economic growth. The results were consistent with the theoretical growth literature's predictions that, under some conditions, small and developing economies can actually gain from trade restrictions.

Ugurlu (2010) looked at how openness affected economic growth in the fifteen EU nations between 1996 and 2004. The longitudinal data or cross-sectional time series data panel data technique was applied. Growth, openness, price level, investment, and the government's portion of RGDP were the factors used. The findings showed that openness had a minimally negative effect on economic growth, which meant that openness actually slowed growth during that time. The findings indicated that trade openness had a detrimental impact on economic growth. This may be because these countries are leaders in technology and innovation, which helps less developed countries.

Adhikary (2011) used time series analysis to examine the relationship between FDI, trade openness, capital formation, and economic growth rates in Bangladesh from 1986 to 2008. Following the application of the Johansen process to assess the cointegrating relationship between variables, a vector error correction model was used. The empirical findings demonstrated a bad long-term link between GDP growth rates and openness. The extent of trade openness has a detrimental but waning impact on GDP growth rates. The devaluation of the exchange rate, the significant amount of imported goods, and the unfavourable trade balance position may have contributed to the negative correlation between trade openness and economic growth rates.

In Turkey, both the short- and long-term effects of trade liberalization on economic growth were determined to be unfavourable by Ulasan (2012) using the Ordinary Least Squares approach. Data from 1960 to 2000 were used by Ulasan (2012) to study Turkey. The study did

not support the idea that openness has a long-term, direct, substantial link with economic growth, in contrast to many other cross-country growth studies. Data evidence led to the conclusion that trade openness had little bearing on economic growth. Ulasan (2012) hinted at the fact that improved institutions, solid and stable fiscal and monetary policies are necessary for economic growth to be guaranteed.

Furthermore, Abbas (2014) came to the conclusion that the economic growth of four emerging and four least developed countries is negatively impacted by increased trade liberalization. The panel fixed effect model was employed to assess the effects of macroeconomic variables on economic growth using eight nations from across the world as an addition to the standard production function. Using a panel fixed effect model, a separate regression model was constructed for each developing and least developed economy.

The results indicated that trade liberalization had a considerable negative influence on economic growth, with imports accounting for a larger share than exports. To achieve sustainable growth, developing countries should expand their production capabilities and use export promotion strategies in addition to controlling imports. In their 2015 study, Ali and Abdullah looked at the relationship and effects of trade openness on Pakistan's economic development between 1980 and 2010. The multivariate VECM and Johanson technique was used to determine the short and long run estimations. The study's findings indicated a short-term favourable association between trade openness and national GDP growth. The long-term data show that trade liberalization has a detrimental effect on Pakistan's economic expansion. This might be brought on by the lack of strong institutions and inadequate conflict management mechanisms in the nation. The adverse effect could be a result of Pakistan exporting raw materials rather than finished commodities.

In India, Hye and Lau (2015) used annual time series data from 1971 to 2009 to analyze the r elationship between trade openness and economic growth.The study used a new endogenous growth model, an autoregressive distributive lag model, and the rolling window regression ap proach to analyze the theoretical relationship between trade openness and economic growth o ver both the long and short terms.Granger causality test is also used to identify the long- and s hort-term causal axes. The research revealed that the trade openness index has a long-term negative impact on economic expansion.

The fresh evidence, indicating the impact of the trade openness index on economic development is not constant across the sample, is supplied by the rolling window regression

results. This demonstrates that while Indian policymakers first managed the trade sector policies well, they ultimately failed. Kojo, Saban, and Yemane (2014) examined the relationship between financial development, trade openness, and economic growth for twenty-one African countries.

The creation of the financial development index was based on the trade openness index and four other financial development indicators. The study used the panel bootstrapped Granger causality technique. The empirical findings provided only weak support for the trade- and finance-led growth hypotheses. According to the findings, recent efforts at trade liberalization do not appear to have had a major effect on growth in developing nations. Due to Zimbabwe's turbulent macroeconomic history, the topic of trade liberalization and economic growth has not been thoroughly examined with formal modelling and adequate econometric procedures. In Zimbabwe, studies on the export-led development hypothesis predominated, whereas those on trade openness employed dated cointegration methods such as the Eagle Granger and Johansen test. The hyperinflationary period in Zimbabwe between 2006 and 2009 was not included in the statistics used in some analyses. According to Gwaendepi et al. (2014), the economic catastrophe made it difficult, if not impossible, to gather trustworthy and credible data for the Zimbabwean economy from 2006 to 2009.

Utilizing time series data from 1985 to 2021—including the hyperinflationary era from 2005 to 2009—the current study attempts to close these gaps. The study will make use of data estimations taken from the World Development Indicators (WDI) and United Nations Statistics Division (UNSD) databases. Additionally, this study will make use of the Ordinary Least Square method. The method was chosen because it is straightforward, provides accurate and effective estimates, and performs substantially better in small sample numbers. Last but not least, the analysis will include historical to contemporary time series data for Zimbabwe from 1985 to 2021 to account for all economic cycles experienced by the nation since independence. The dissertation also aims to investigate the relationship between NIK and economic growth in Zimbabwe, considering the impact of trade openness on capital investment decisions and the overall economic performance of the country.

2.4 Conclusion

Finding the theoretical underpinnings and links between trade liberalization and economic growth was the main objective of this chapter adding on the effects of investment in capital goods to the GDP Growth. This led to the conclusion that a variety of theories would be useful in explaining the complex web of important connections that characterizes the topic of this study. Some of the theories that are explored include those that explain growth and international trade, such as Solow's growth model and endogenous growth theories. The absolute advantage theory, the Huckster-Ohlin theory of commerce, the mercantilist view of trade, and new trade theories are further theories. We identified a lot of research that acknowledged, based on empirical evidence, a long-term, positive link between trade liberalization and economic growth and others provide evidence of an inverse relationship between these two. The literature has reported a number of conclusions, with some studies demonstrating a poor association between trade liberalization and growth and others failing to establish any genuine connection. The differences in results are attributable to different econometric modelling techniques, the study nations included, variable specifications, and different study time frames. The study's methodology and data sources will be the main topics of the following chapter.

CHAPTER 3

METHODOLOGY FRAMEWORKAND DATA SOURCES

3.1 Introduction

This study intends to investigate the relationship between trade liberalization and economic growth in Zimbabwe and adding on the efficient of investment on capital goods. This chapter, which is divided into five sections, goes into considerable detail about the procedure. The model is explained in the first section. Following are definitions for the variables and data sources, along with the estimation technique and conclusion.

3.2 Model specification

To undertake an econometric analysis investigating the relationship between economic growth and trade liberalization, a growth equation is formulated. As indicated by equation (3.1), trade openness serves as an independent variable while gross domestic product growth (GDP/G) functions as the dependent variable.

The following is an explicit specification of the multivariate regression equation:

$GDP/\mathrm{G} = F\ (OPEN, FDI, GVT, INF, IKG, LF)$ **(3.1)**

Where:

Gross Domestic Product Growth= GDP/G

((Exports plus Imports)/GDP)) = OPEN

Foreign direct investment =FDI

Government Spending =GVT

Inflation rate =INF

National Investment in Capital Goods = IKG

Labor Force =LF.

Trade openness leads to increased competition and specialization, which results in higher productivity and greater efficiency in production. Increased competition and specialization lead to lower prices for goods and services, which boosts consumer purchasing power and stimulates demand. Increased demand and productivity lead to increased investment, which in turn leads to further economic growth. Lower trade barriers lead to increased international trade, which in turn leads to greater access to foreign capital, technology, and expertise. Greater access to foreign

capital, technology, and expertise leads to increased innovation and the adoption of new technologies, which can drive economic growth.

Economic growth is anticipated to be positively influenced by trade openness, which serves as an indicator of trade liberalization. It is expected that trade openness, investment in capital goods, foreign direct investments and the total labor force will have a favourable impact on economic growth. Conversely, government spending and inflation are expected to exert a negative influence. The reason behind the negative expectation for GVT is the prevailing situation in Zimbabwe, where most expenditure are done in social activities which do not contribute to GDP. This implies a limited amount of domestic production, consequently leading to reduced economic growth.

The above model can be expressed in a linearized form as:

$GDP/\mathrm{G}t = \beta 0 + \beta 1 OPENt + \beta 2 FDIt - \beta 3 GVTt - \beta 4\mathrm{INF}t + \beta 5\mathrm{IKG}t + \beta 6 LFt\ \beta 7(\mathrm{IKG}, \mathrm{OPEN})t + \mu t$. (3.2)

Where:

GDP/Gt: Gross domestic product at time t. This is the dependent variable that measures the economic growth of Zimbabwe.

$OPENt$**:** Trade openness at time t. This is an independent variable that measures the degree of integration of Zimbabwe into the world economy. It can be calculated as the ratio of total trade (exports plus imports) to GDP.

$FDIt$: Foreign direct investment inflows at time t. This is an independent variable that measures the amount of capital invested by foreign entities in Zimbabwe. It can be expressed as a percentage of GDP.

$GVTt$: Government expenditure at time t. This is an independent variable that measures the size of the public sector in Zimbabwe. It can be expressed as a percentage of GDP.

INFt: Inflation rate at time t. This is an independent variable that measures the change in the general price level in Zimbabwe. It can be expressed as a percentage change in the consumer price index.

(IKGt: National Investment in Capital Goods at time t refers to the amount of capital investment made by the government, businesses, and individuals in Zimbabwe to purchase physical assets such as machinery, equipment, and infrastructure, which are used in the production of goods and services within the country. This variable is used to measure the level of investment in the country's productive capacity, which is essential for sustainable

economic growth.

LTFt: Total labour for at time t. This is an independent variable that measures the number of people who are willing and able to work in Zimbabwe. It can be expressed as a percentage per annum.

μt: Error term at time t. This captures the random shocks and other factors that are not included in the model.

The coefficients $\beta 0$, $\beta 1$, $\beta 2$, $\beta 3$, $\beta 4$, $\beta 5$, $\beta 6$ and $\beta 7$ represent the effects of each independent variable on economic growth. For example, $\beta 1$ shows how a one-unit increase in trade openness affects GDP, holding other variables constant. $\beta 7$ represents the effects of the interaction term (NIKOPEN).

Where β's are parameters of the model and μ_t is the residual term.

There is a need to interact variables in an econometric model because it can help capture the complex relationship and interdependencies that exist between different variables. By interacting variables, we can account for the fact that the impact of one variable on the outcome of interest may depend on the level or values of other variables in the model. In the case of our study of trade openness and economic growth model, there may be an interaction effect between trade openness and national investment in capital goods. This means that the effect of trade openness on economic growth may be different when the level of national investment in capital goods is high or low. By including an interaction term in the model, we can accurately estimate the impact of each variable on the outcome of interest, while also considering the moderating effect of other variables in the model. Therefore, interaction terms allow us to better understand the relationships between variables, and can lead to more accurate and robust estimates of the effects of different factors on economic outcomes.

If the coefficient of the interaction term is statistically significant, it would imply that the relationship between trade openness and economic growth is influenced by the level of IK. In such a scenario, the effect of trade openness on economic growth is likely to depend on the level of investment in capital goods, and this would be important for policymakers to note when considering measures to promote economic growth.

The independent variables of the model include the labor force, government spending, foreign direct investment, investment in capital goods, trade openness (which serves as a

proxy for trade liberalization), inflation, and foreign direct investment. The dependent variable, GDP growth, is the measure of interest in the model. These variables have been widely utilized in various studies within the literature, making them well-suited for investigating the relationship between trade openness and economic growth in the context of Zimbabwe.

3.3 Variable descriptions and Data sources

The extensive body of empirical research, examined by various scholars such as Coe and Helpman (1995) and Bernstein (1996), provides valuable insights into variable selection, measurement techniques, data sources, and estimation methodologies. This literature plays a significant role in defining the variables and identifying appropriate data sources. In the subsequent discussion, we delve into the selection of independent variables, the sources of data, and the choice of the dependent variable.

3.3.1 Data source

The dataset used in this analysis consists of thirty seven annual time series data points for Zimbabwe, covering the period from 1985 to 2021. This duration is deemed sufficient to capture any existing relationship among the variables under investigation. To examine the connection between trade liberalization and economic growth, the study will employ the Ordinary Least Square analysis, utilizing certain variables identified by Renelt and Levine (1992), Levine and Zervos (1993), and Gwaendepi et al. (2014). Additionally, the availability of dependable secondary data for the Zimbabwean economy played a significant role in selecting these variables.

Most of the data used in this study is readily available and requires minimal explanation. The data sources include prominent databases such as the International Labour Organization (ILO), World Development Indicators (WDI), World Integrated Trade Solutions (WITS), Zimbabwe National Statistical Agency (ZIMSTAT), and United Nations Statistics Division (UNSD). These are the variables that were used in this study and their sources, as presented in Table 3.1.

Table 3.1: Variables and data sources

Variable	Variable Measurement	Sources

Gross domestic Product Growth, GDP/G	Total Gross Domestic product Growth (% annual growth)	UNSD/ZIMSTAT
Trade Openness, OPEN	Total Imports and Exports (in $US as a % of GDP). The proxy for trade Liberalization.	WITS/ UNSD
Foreign direct investment, FDI	Total FDI (in $US measured as a % of GDP)	WDI/ ZIMSTAT
Government expenditure, GVT	Total Government expenditure (in $US measured as a % of GDP)	UNSD
Labour force, LF	Total number of the employed plus unemployed	UNSD/ZIMSTAT
Investment in Capital Goods, IKG	Total investment measured as a percentage of total investment (% of total investments)	WDI/ IMF
Inflation Rate, INF	Inflation rate derived from the CPI (2010) prices	UNSD

The acronyms for the United Nations Statistics Division are World Development Indicators (WDI), International Labour Organization (ILO), Zimbabwe National Statistical Agency (ZIMSTAT), and World Integrated Trade Solutions (WITS).

The World Bank and the United Nations (UN) prioritize the utmost quality in their data work and products, adhering to globally recognized standards, processes, sources, definitions, and classifications. They utilize frameworks such as the General Data Dissemination System (GDDS) and the Data Quality Assessment Framework (DQAF) to evaluate national statistical systems and encourage nations to enhance the quality of their official data. These frameworks provide a comprehensive perspective on data quality, taking into account the interconnectedness and trade-offs among various quality components, while also addressing the diverse needs of different data types and users (World Bank, 2017).

3.4 Variable descriptions.

The analysis of economic growth and trade considers multiple explanatory variables. Based on previous empirical studies and the availability of reliable data for the study's time period, relevant factors were selected. The aim was to include variables that have shown

significance in previous research and are pertinent to Zimbabwe, while avoiding the inclusion of irrelevant variables. This section provides a description of each variable and explains how it is measured.

The change in the value of all goods and services generated within an economy during a certain time period is represented by the Gross Domestic product growth (GDP/G) (Samuelson & Nordhaus, 2010:370). In this study, GDP Growth is reported in constant prices to reflect inflation-adjusted GDP. Constant price estimates of GDP/G can be established by measuring the values of the products and services produced in a given year in comparison to a base period. The analysis makes use of GDP Growth data from the nation's national accounts, including percentage values and growth rates.

Trade openness, widely recognized to contribute to faster economic growth, refers to the degree of openness in a country's trading system. A more open trading system creates a conducive environment for investment and supports economic expansion. It also expands market access, exposing the economy to a wider range of concepts and technologies, thereby capturing external technical influences on economic growth (Winters, 2004). The impact of trade openness on economic growth is an empirical question, as highlighted by Balassa (1982) and Edwards (1997). Various measures of openness have been employed in previous research. In this study, trade openness is measured as the ratio of exports plus imports to GDP, serving as an indicator of the trade liberalization index. It is expected that trade openness will exhibit a positive relationship with economic growth.

Foreign direct investment (FDI), broadly defined by Danziger (1997), refers to investments made by foreign investors to acquire a lasting stake in businesses operating outside their home country. FDI flows consist of both financial and inward flows, both of which contribute to increased investment in the host economy (OECD, 2008). FDI can be measured as a stock or a flow variable. Sala-i-Martin et al. (2004) highlight that FDI stocks display less variability over time compared to FDI flows. However, for this study, only FDI inflows as a percentage of GDP are readily available. Given that FDI establishes stable and enduring connections between economies, it is expected to have a positive impact on economic growth.

According to the Keynesian model, increased government spending, particularly on infrastructure, is believed to stimulate economic growth. However, neo-classical growth models, as argued by Barro (1990), Abdullah (2000), and Folster & Henrekson (2001), suggest that government fiscal policy has no impact on national output expansion. This has

led to a disagreement among policymakers regarding whether government expansion promotes or hinders economic progress. Proponents of increased government spending, such as Nurudeen & Usman (2010), argue that government programs provide crucial public goods, including infrastructure and education. On the other hand, advocates for smaller government contend that higher government spending diverts resources away from the productive sector, resulting in less efficient resource allocation (Samuelson & Nordhaus, 2010:310–312). In this study, total government spending as a proportion of GDP is used, and a negative relationship between government spending and economic growth is predicted.

The labor force, also referred to as the currently active population, comprises all individuals who meet the criteria for being employed or unemployed (OECD, 2017). In Zimbabwe, the labor force consists of both employed and jobless individuals. As the labor supply increases, economic growth is expected to rise. Therefore, there is a positive correlation anticipated between economic growth and the labor force.

Numerous examples in the literature demonstrate how inflation hampers growth (Fisher, 1993). Inflation disrupts efficient resource allocation by distorting the signaling function of relative price changes and introducing uncertainty. Thus, Temple (2000) justifies its inclusion as an explanatory component in the growth equation. Inflation serves as an indicator of fiscal and monetary restrictions, as well as macroeconomic instability. Increasing inflation rates are projected to have a detrimental effect on economic growth. The variable inflation, reported as a yearly percentage, is derived from the consumer price index (CPI).

Investment in capital goods refers to the direct expenditure made by firms, businesses, and governments on capital, which are goods that are used to produce goods and services, rather than directly providing utility to consumers by Danziger (1997). Capital goods include machinery, equipment, buildings, and other physical assets used to produce goods and services. Investment in capital goods can come from a variety of sources, including the public sector, private businesses, and foreign direct investment (FDI). Investment in capital goods is crucial for improving production efficiency, enhancing productivity, and promoting economic growth. A high level of investment in capital goods can indicate confidence in the future growth prospects of an economy as businesses and governments seek to expand their production capacity.

3.5 Estimation Methodology

To determine the impact of trade openness on economic growth, the study will employ the Ordinary Least Squares (OLS) method, which has been successfully used in similar studies. The OLS model accounts for an error term with a sum of zero to ensure that the positives and negatives cancel each other out, and the parameters are estimated through this model. Additionally, the model shows that there is no multicollinearity or covariance between the error term and the dependent variable, ensuring a reliable estimation. The model also assumes that the error term $\mu=\Sigma=0$ follows a normal distribution where the variance is zero. Furthermore, the parameters in the model are linear, while the variables are non-linear. Overall, the OLS method will provide a robust approach to estimate the impact of trade openness on economic growth that adheres to these various assumptions.

3.5.1 Tests for stationary

The time series data must be stationary in order to estimate time series using ordinary least squares. If the mean, variance, and auto-covariance of a time series do not change over time, the time series is said to be stationary (Gujarati, 2003:812–816).

Therefore, in order to attain stationarity, every stochastic time-series with changing means (μt) and variances ($\sigma t2$) must be differentiated. The stochastic process is said to be integrated of order d, denoted as I (d), if a time series is divided by d and the outcome is stationary. Because the stochastic time-series is stationary after being differenced, the unit root is also known as a difference-stationary model (Wei, 2006).

3.5 1.1 Augmented Dickey Fuller test

The ADF test, also known as the Augmented Dickey-Fuller test, is utilized to assess whether a time series contains a unit root. It addresses situations where the error terms may be correlated with prior terms by incorporating lagged difference values of the dependent variable in the regression (Gujarati, 2003: 817-818). The ADF unit root test for non-stationarity involves regressing the current value of the variable (Yt) on its lagged value (Yt-1) and examining whether the estimated coefficient is

statistically different from 1

Dickey and Fuller developed the Augmented Dickey-Fuller (ADF) test as an improvement over the DF test to tackle the problem of serial correlation (Wei, 2006). In the ADF test, the regression equation is modified by including lags of the first difference of the variable in order to ensure that the error term is white noise.

3.5.1.*2* Phillips Perron test

The Phillips-Perron (PP) test employs non-parametric statistical techniques that do not include lag difference terms to handle the problem of serial correlation in the errors. Instead, the PP test utilizes a correction factor that calculates the long-run discrepancy of the error process, incorporating a modified version of the Newey-West formula to address the issue of serial correlation among the error terms. Unlike the ADF test, the PP test does not require the disturbance term to be serially uncorrelated or homogenous in order to yield valid results. Similar to the ADF test, the Phillips-Perron (PP) test examines whether a time series contains a unit root. The test equation is stated as:

$$\Delta Y_t + \beta_0 + \beta_1 t + \beta_2 Y_{t-1} + \varepsilon_t \sim 1(0) \qquad (3.2)$$

3.6 Diagnostic tests

Since the ordinary least squares test seeks to identify the best linear unbiased estimator (BLUE), diagnostic tests must be carried out. By using tests for serial correlation, heteroscedasticity, multi collinearity, and normality in the residuals, the tests will guarantee that the results are statistically valid.

3.6.1 Normality test

There are multiple approaches to assessing the normality of data, which can be categorized into graphical and statistical methods. Common statistical tests for normality include the Anderson-Darling, Jarque-Bera, Shapiro-Wilks, and Kolmogorov-Smirnov tests. Graphical methods include examining histograms, normal probability plots of residuals, and cumulative frequency plots. In this study, the Graphical methods include examining histograms is used to assess normality. If

the histogram resembles a bell curve and there are no significant deviations from normality, we can conclude that the data is approximately normally distributed. This is a desirable outcome as it indicates that certain statistical methods, such as parametric tests, can be used on the data.

3.6.2 Heteroscedasticity test

Heteroscedasticity occurs when a series of random variables exhibits varying variances, leading to inconsistent variance during regression analysis. To assess heteroscedasticity, the Breusch-Pagan test is commonly employed. This test utilizes the F-statistic to determine the significance of the regression. If the computed F-statistic exceeds the critical value of 0, we accept the null hypothesis, indicating the presence of heteroscedasticity. The following outlines the steps involved in conducting the test:

$H0$: There is no heteroscedasticity.

$H1$: There is heteroscedasticity.

3.6.3 Serial correlation

Serial correlation refers to the presence of correlation among error terms in a time-arranged series. Wooldridge (2009) suggests that it can arise due to various factors such as incorrect functional forms, autocorrelations, data manipulation, data transformation, and non-stationarity of the data. Autocorrelation can have multiple causes, including omitted explanatory variables, incorrect model specifications, interpolation in statistical observations, and inaccurate definition of the true error term.

To detect and address the issue of serial correlation, various tests can be employed, including the Durbin-Watson (DW) test and the Breush-Godfrey (BG) test. In this study, we hypothesize the absence of first-order autocorrelation in the disturbance term and choose to test it using the BG test. Unlike the DW test, the BG test overcomes its limitations and provides definitive results, particularly when a lagged dependent variable is involved. Additionally, the BG test can account for higher-order autocorrelation if present, making it a suitable choice for our analysis.

3.6.4 Multicollinearity Test

Multicollinearity is a test used to test for correlation between independent variable. If the coefficient take the value greater than 0.8 we can conclude that there is the presence of multicollinearity and hence those variables must be left out. Multicollinearity may leads to an insignificant t-statistics and F-statistics.

3.7 Conclusion

The ADF and PP unit root tests is going to be employed to evaluate the stationarity of the variables under study. The main objective of this chapter was to establish the economic growth model as well as the independent variables. Finally, the diagnostic tests that should be used are discussed, including serial correlation, multicollinearity and heteroscedasticity. The stated models are examined in the next chapter.

CHAPTER 4

4.1 Introduction

In this chapter, the study presents its findings from the empirical analysis of the trade model developed in the previous chapter. The study uses an Ordinary Least Squares (OLS) approach to quantitatively evaluate the dynamic effects of trade liberalization on Zimbabwe's economic growth. The chapter begins with a descriptive study of the variables that are used in the trade model. The subsequent section provides a summary of the preliminary findings. The empirical results are then presented using F-statistics and p-values to provide insights into the significance of the findings.

4.2 Descriptive Analysis

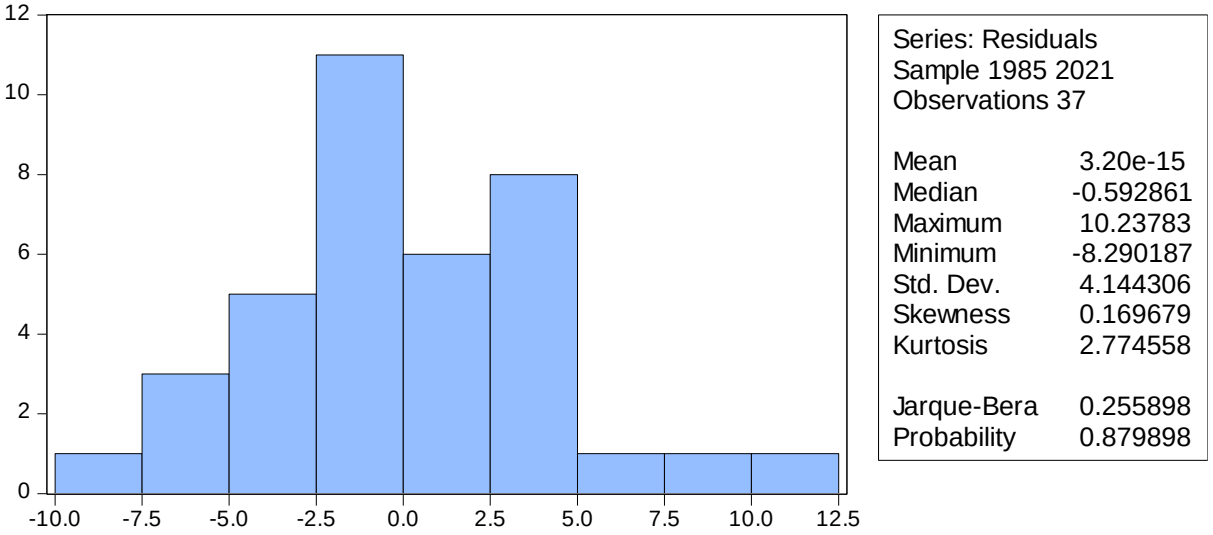
The descriptive analysis was conducted to examine the variables used in the study. The analysis includes gross domestic product growth (GDP/G), trade openness (OPEN), foreign direct investment (FDI), investment in capital goods (IKG), government spending (GVT), inflation (INF), labour force (LF) and a generated variable IKGOPEN (interaction of OPEN and IKG). The study uses annual data from 1985 to 2021. Table 4.1 presents the means, medians, maximum and minimum values, standard deviations, skewness, and kurtosis of the variables, providing a comprehensive overview of the data.

The average trade openness through time is 65.34317 ranging from a minimum of 44.10035 to a maximum of 109.5216. The average rate of economic growth (GDP/G) is 1.703911; the maximum rate is 21.45206; and the minimum rate is -17.66895. The average of the variable investment on capital goods is 13.92967 with a maximum value of 23.72906 and a minimum value of 1.525177. The variables GDP/G and FDI have kurtosis values above 3, indicating a long- or slim-tailed distribution, while other variables have values below 3 indicating that the observations have a fat or short-tailed distribution.

Table 4.1: Descriptive Statistics

	GDP_G	OPEN	FDI	GVT	INF	IKG	TLF	IKGOPEN
Mean	1.703911	65.34317	0.602573	16.36271	12.32167	13.92967	3.403767	881.3918
Median	2.023650	63.71249	0.120000	17.91626	12.79544	14.14831	0.016956	793.4182
Maximum	21.45206	109.5216	6.940000	27.48708	23.67628	23.72906	13.61145	1836.707
Minimum	-17.66895	44.10035	-0.453000	2.047121	2.234169	1.525177	0.000000	115.9801
Std. Dev.	8.304625	15.72515	1.270003	5.897074	5.653902	6.188319	4.889503	436.8627
Skewness	-0.152978	0.541938	3.540575	-0.777358	0.114393	-0.301948	0.888706	0.460493
Kurtosis	3.324617	2.879878	17.90711	3.140643	1.969229	2.111572	2.060146	2.459529
Jarque-Bera	0.306769	1.833378	419.8952	3.756925	1.718700	1.779074	6.232216	1.757998
Probability	0.857800	0.399841	0.000000	0.152825	0.423437	0.410846	0.044329	0.415198
Sum	63.04470	2417.697	22.29521	605.4204	455.9017	515.3977	125.9394	32611.50
Sum Sq. Dev.	2482.805	8902.088	58.06468	1251.917	1150.798	1378.630	860.6605	6870565.
Observations	37	37	37	37	37	37	37	37

Table 4.2 Normality Results



The above diagram provide an evidence of normal distribution since the bars are bell sharped.

4.3 Diagnostic Test

4.3.1 Multicollinearity test

According to the pairwise matrix results in Table 4.2, Gujarati's (2003:341) "classic" method offers minimal evidence of multicollinearity. According to Gujarati (2003:341), the absence of strong multicollinearity is shown by the presence of low pairwise coefficients that are not greater than 0.8. Therefore, as seen in Table 4.2, there is no multicollinearity issue.

Table 4.3: Multicollinearity

	GDP_G	OPEN	FDI	GVT	INF	IKG	TLF	IKGOPEN
GDP_G	**1.000000**	-0.185301	-0.463367	0.216214	-0.276898	0.483383	0.461289	0.448931
OPEN	-0.185301	**1.000000**	0.381057	-0.393152	0.260577	-0.304353	-0.077254	0.205329
FDI	-0.463367	0.381057	**1.000000**	-0.634301	0.410102	-0.486204	0.105732	-0.385620
GVT	0.216214	-0.393152	-0.634301	**1.000000**	-0.224280	0.327625	-0.084808	0.175116
INF	-0.276898	0.260577	0.410102	-0.224280	**1.000000**	-0.589259	0.424735	-0.447176
IKG	0.483383	-0.304353	-0.486204	0.327625	-0.589259	**1.000000**	-0.147738	0.644890
TLF	0.461289	-0.077254	0.105732	-0.084808	0.424735	-0.147738	**1.000000**	-0.075530
IKGOPEN	0.448931	0.205329	-0.385620	0.175116	-0.447176	0.644890	-0.075530	**1.000000**

4.3.2 Autocorrelation

Autocorrelation is tested using Durbin Watson statistics. Gujarati (2004) asserts that the Durbin Watson statistics utilized should be in the range of 2, which indicates the absence of autocorrelation. The Durbin Watson in this study is 2.243874, which is in the range, indicating that there was no autocorrelation in the data. Due to the shortcoming of Durbin Watson (area of indecision), a Breush-Godfrey Serial Correlation LM test is also performed to check for autocorrelation. Since we were unable to rule out the null hypothesis of no autocorrelation, the data showed that there is no autocorrelation.

Table 4.4 LM Test
Breush-Godfrey serial correlation LM Test

F-statistic	0.544769	Prob. F(2,27)	0.5862
Obs*R-squared	1.435157	Prob. Chi-Square(2)	0.4879

Table 4. 5 Heteroscedasticity

F-statistic	0.732791	Prob. F(7,29)	0.6459
Obs*R-squared	5.560959	Prob. Chi-Square(7)	0.5918
Scaled explained SS	3.031115	Prob. Chi-Square(7)	0.8821

In the above Table, F-statistics give evidence of no heteroscedasticity. In addition, the p-value is greater than 0.1 which also means that our model is not suffering from heteroscedasticity.

4.3.3 Coefficient of determination (R-Squared)

R-squared calculates how well independent variables account for the dependent variable. R-Squared for this study is 0.750963, indicating that the model is effective at illuminating the variation between the dependent variable and the independent variables.

4.4 Regression results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-44.81439	14.13616	-3.170196	0.0036
OPEN	2.576382	0.195560	3.441836	0.0018
FDI	4.194390	1.034928	4.052834	0.0003
GVT	-0.080662	0.174361	-0.462613	0.6471
INF	-0.536531	0.195387	-2.745997	0.0103
IKG	2.921528	0.809724	3.608052	0.0011
TLF	1.613303	0.233107	6.920874	0.0000
IKGOPEN	0.370659	0.101856	3.176459	0.0035

R-squared	0.750963	F-statistic	12.49266
Adjusted R-squared	0.690851	Prob (F-stat)	0.000000
Durbin-Watson stat	2.243874		

4.5 Interpretation of the results

4.5.1 Trade Openness (OPEN, IKG and IKGOPEN)

We reject the null hypothesis that the coefficient of this variable (β_2) is not statistically different from zero since the variable OPEN has a probability value of 0.0018, which indicates that it is statistically significant at the 1% level of significance. This indicates that the variable OPEN is more crucial in interpreting changes in GDP/G. The coefficient for the variable OPEN in the table above is 2.576382, which indicates that there is a positive relationship between trade

openness and economic growth. Also, the variable IKG and the interacted variable has the probabilities of 0.0011and 0.0035 respectively, which also shows that these variables are statistically significance at 1% level. The coefficients of these two variables are 2.921528 and 0.37659 respectively which also indicates a positive relationship towards GDP Growth.

Foreign direct investment and total labour force also have positive signs indicating positive relationship towards GDP growth while inflation and government expenditure has a negative signs indicating inverse relationship of these variables to growth. The reason of the inverse relationship is the expenditure done by the government are mainly focused on social activities which adds nothing to GDP Growth in Zimbabwe.

4.6 Conclusion

This chapter discussed the study's empirical results and commented on the econometric estimation that was done. The estimated results were derived by estimating the links between economic growth, trade liberalization, and other variables using the Ordinary Least Squares (OLS). The variables, INF and GVT were found to have a negative relationship that was significant. Trade Openness, Foreign direct investment, investment in capital goods, Total Labour Force IKGOPEN, were discovered to be important when long term coefficients were taken into account. The analysis is expanded upon in the following chapter in order to draw conclusions, suggest economic measures, and identify topics for additional study. This chapter confirms the findings.

CHAPTER V

CONCLUSION AND POLICY IMPLICATIONS

5.1 Introduction

The study's summary, policy implications, and suggestions are presented in this ch apter. The report offers ideas for additional research as well.

5.2 Summary

Using time series data from 1985 to 2021, this study investigated whether there was a positive correlation between trade liberalization and economic growth in Zimbabwe and investment in capital goods is essential when assessing the relationship between these two variables. The study used the labor force (TLF), government spending (GVT), Inflation (INF), investment in capital goods (IKG) and foreign direct investment (FDI) as control variables to examine the connection between trade liberalization and economic growth in the Zimbabwean economy. The results of the regression, which used the Ordinary Least Squares methodology, show that there is a positive association between these two variables. The outcome is consistent with other research, including that of Adhikary (2011), who established the research in Bangladesh from 1986 to 2008 and find a long-term link between GDP growth rates and openness

The results show that trade liberalization has a positive coefficient of 2.576382 and is the variable that promote economic growth in Zimbabwe. As an economy like Zimbabwe opens up, local output rises and exports begin to outpace imports. This implies that economic growth rises as a nation becomes more open to free trade.

Additionally, the findings demonstrate a negative correlation between Zimbabwe's government expenditure and inflation rate towards economic development, with a negative coefficients of -0.080662 and -0.536531respectively. Thus, a rise in the government expenditure and inflation as a whole slows down economic growth and vice versa. FDI, TLF, IKG and IKGOPEN with positive coefficients of 4.194390, 1.613303, 2.921528 and 0.37659 respectively, have a favorable effect on economic growth in Zimbabwe. According to the study's findings, it is difficult for

policymakers and government negotiators in Zimbabwe to create policies that encourage exports through measures that support local manufacturing, such as Import Substitution Firms (ISF), and to do so, encourage more exports than imports.

5.3 Policy Implications.

The research's findings served as the foundation for the discussion of this study's policy implications. The effects of trade liberalization on Zimbabwe's economic growth have been highlighted, and the government should support and strengthen policies like import substitution enterprises to raise local production and increase exports while reducing imports. The nation will benefit from foreign trade as a result. If the scenario is similar to Zimbabwe's, where imports outnumber exports, then international commerce may restrict markets for both services and goods.

In a similar spirit, the government should promote an advantageous business climate in order to attract FDI in order to ensure sustainable economic growth. This is achieved through controlling important problems like inflation, which have a significant impact on boosting investment and, eventually, economic growth.

As a result, this study draws the conclusion that national development policies for Zimbabwe must include consideration of international trade policy. They must therefore be connected to monetary policy, tax policy, industrial policy, foreign policy, and education policy. The development of human capital, knowledge spillovers, technical advancement, and foreign direct investment (FDI) all play important roles in fostering international trade and economic growth in emerging nations like Zimbabwe.

5.4 Recommendations

- The researcher recommends the policies makers to use Import Substitution Firms to boost exports and reduce imports.
- The researcher also recommends the policy makers to use fiscal policy by increasing its expenditure through subsides and this will boost GDP.
- Policy makers is also recommended by the researcher to use policies that attract investors from the countries to boost FDI.

5.5 Areas of Further Research

There is a need to examine other variables that affect economic growth other than those use in this study.

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APPENDIX

APPENDIX 1: REGRESSION RESULTS

Dependent Variable: GDP_G
Method: Least Squares
Date: 06/09/23 Time: 01:52
Sample: 1985 2021
Included observations: 37

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-44.81439	14.13616	-3.170196	0.0036
OPEN	2.576382	0.195560	3.441836	0.0018
FDI	4.194390	1.034928	4.052834	0.0003
GVT	-0.080662	0.174361	-0.462613	0.6471
INF	-0.536531	0.195387	-2.745997	0.0103
IKG	2.921528	0.809724	3.608052	0.0011
TLF	1.613303	0.233107	6.920874	0.0000
IKGOPEN	0.370659	0.011856	3.176459	0.0035

R-squared	0.750963	Mean dependent var	1.703911
Adjusted R-squared	0.690851	S.D. dependent var	8.304625
S.E. of regression	4.617470	Akaike info criterion	6.086381
Sum squared resid	618.3098	Schwarz criterion	6.434688
Log likelihood	-104.5981	Hannan-Quinn criter.	6.209176
F-statistic	12.49266	Durbin-Watson stat	2.243874
Prob(F-statistic)	0.000000		

APPENDIX 2: DESCRIPTIVE ANALYSIS

	GDP_G	OPEN	FDI	GVT	INF	IKG	TLF	IKGOPEN
Mean	1.703911	65.34317	0.602573	16.36271	12.32167	13.92967	3.403767	881.3918
Median	2.023650	63.71249	0.120000	17.91626	12.79544	14.14831	0.016956	793.4182
Maximum	21.45206	109.5216	6.940000	27.48708	23.67628	23.72906	13.61145	1836.707
Minimum	-17.66895	44.10035	-0.453000	2.047121	2.234169	1.525177	0.000000	115.9801
Std. Dev.	8.304625	15.72515	1.270003	5.897074	5.653902	6.188319	4.889503	436.8627
Skewness	-0.152978	0.541938	3.540575	-0.777358	0.114393	-0.301948	0.888706	0.460493
Kurtosis	3.324617	2.879878	17.90711	3.140643	1.969229	2.111572	2.060146	2.459529
Jarque-Bera	0.306769	1.833378	419.8952	3.756925	1.718700	1.779074	6.232216	1.757998
Probability	0.857800	0.399841	0.000000	0.152825	0.423437	0.410846	0.044329	0.415198
Sum	63.04470	2417.697	22.29521	605.4204	455.9017	515.3977	125.9394	32611.50
Sum Sq. Dev.	2482.805	8902.088	58.06468	1251.917	1150.798	1378.630	860.6605	6870565.
Observations	37	37	37	37	37	37	37	37

APPENDIX 3: MULTICOLLINEARITY TEST

	GDP_G	OPEN	FDI	GVT	INF	IKG	TLF	IKGOPEN
GDP_G	1.000000	-0.185301	-0.463367	0.216214	-0.276898	0.483383	0.461289	0.448931
OPEN	-0.185301	1.000000	0.381057	-0.393152	0.260577	-0.304353	-0.077254	0.205329
FDI	-0.463367	0.381057	1.000000	-0.634301	0.410102	-0.486204	0.105732	-0.385620
GVT	0.216214	-0.393152	-0.634301	1.000000	-0.224280	0.327625	-0.084808	0.175116
INF	-0.276898	0.260577	0.410102	-0.224280	1.000000	-0.589259	0.424735	-0.447176
IKG	0.483383	-0.304353	-0.486204	0.327625	-0.589259	1.000000	-0.147738	0.644890
TLF	0.461289	-0.077254	0.105732	-0.084808	0.424735	-0.147738	1.000000	-0.075530
IKGOPEN	0.448931	0.205329	-0.385620	0.175116	-0.447176	0.644890	-0.075530	1.000000

APPENDIX 4 Serial Correlation LM Test:

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.544769	Prob. F(2,27)	0.5862
Obs*R-squared	1.435157	Prob. Chi-Square(2)	0.4879

Test Equation:
Dependent Variable: RESID
Method: Least Squares
Date: 06/09/23 Time: 02:52
Sample: 1985 2021
Included observations: 37
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.098773	14.36566	0.006876	0.9946
OPEN	0.014838	0.199655	0.074318	0.9413
FDI	0.047923	1.061272	0.045156	0.9643
GVT	-0.028573	0.179385	-0.159285	0.8746
INF	-0.053078	0.210301	-0.252389	0.8027
IKG	0.014934	0.823116	0.018143	0.9857
TLF	0.023067	0.239010	0.096511	0.9238
IKGOPEN	0.000245	0.012075	0.020261	0.9840
RESID(-1)	-0.180363	0.208461	-0.865210	0.3945
RESID(-2)	-0.138356	0.199994	-0.691800	0.4950

R-squared	0.038788	Mean dependent var	3.20E-15
Adjusted R-squared	-0.281616	S.D. dependent var	4.144306
S.E. of regression	4.691706	Akaike info criterion	6.154929
Sum squared resid	594.3268	Schwarz criterion	6.590312
Log likelihood	-103.8662	Hannan-Quinn criter.	6.308422
F-statistic	0.121060	Durbin-Watson stat	2.012689
Prob(F-statistic)	0.998813		

APPENDIX 5 Heteroskedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

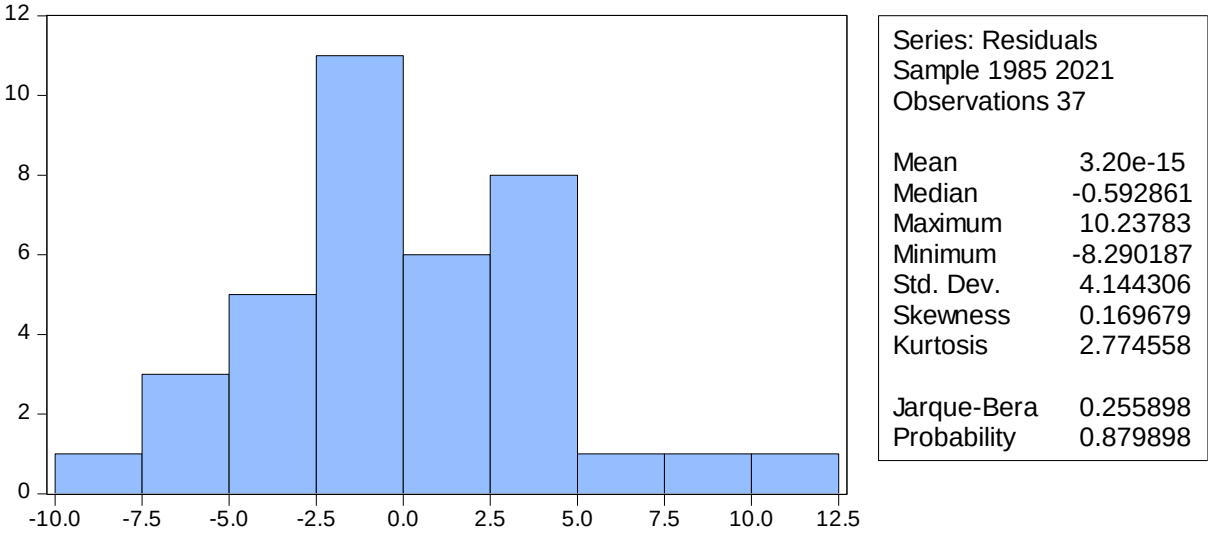
F-statistic	0.732791	Prob. F(7,29)	0.6459
Obs*R-squared	5.560959	Prob. Chi-Square(7)	0.5918
Scaled explained SS	3.031115	Prob. Chi-Square(7)	0.8821

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 06/09/23 Time: 02:54
Sample: 1985 2021
Included observations: 37

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	83.30480	70.95982	1.173971	0.2500
OPEN	-1.392481	0.981658	-1.418500	0.1667
FDI	3.373575	5.195066	0.649381	0.5212
GVT	-0.107357	0.875249	-0.122659	0.9032
INF	1.406215	0.980789	1.433758	0.1623
IKG	-5.075037	4.064605	-1.248593	0.2218
TLF	-0.826816	1.170135	-0.706599	0.4855
IKGOPEN	0.091106	0.059512	1.530890	0.1366

R-squared	0.150296	Mean dependent var	16.71107
Adjusted R-squared	-0.054805	S.D. dependent var	22.56831
S.E. of regression	23.17849	Akaike info criterion	9.313137
Sum squared resid	15580.03	Schwarz criterion	9.661443
Log likelihood	-164.2930	Hannan-Quinn criter.	9.435931
F-statistic	0.732791	Durbin-Watson stat	2.195529
Prob(F-statistic)	0.645921		

APPENDIX 6: Normality test



Series: Residuals
Sample 1985 2021
Observations 37

Mean	3.20e-15
Median	-0.592861
Maximum	10.23783
Minimum	-8.290187
Std. Dev.	4.144306
Skewness	0.169679
Kurtosis	2.774558
Jarque-Bera	0.255898
Probability	0.879898

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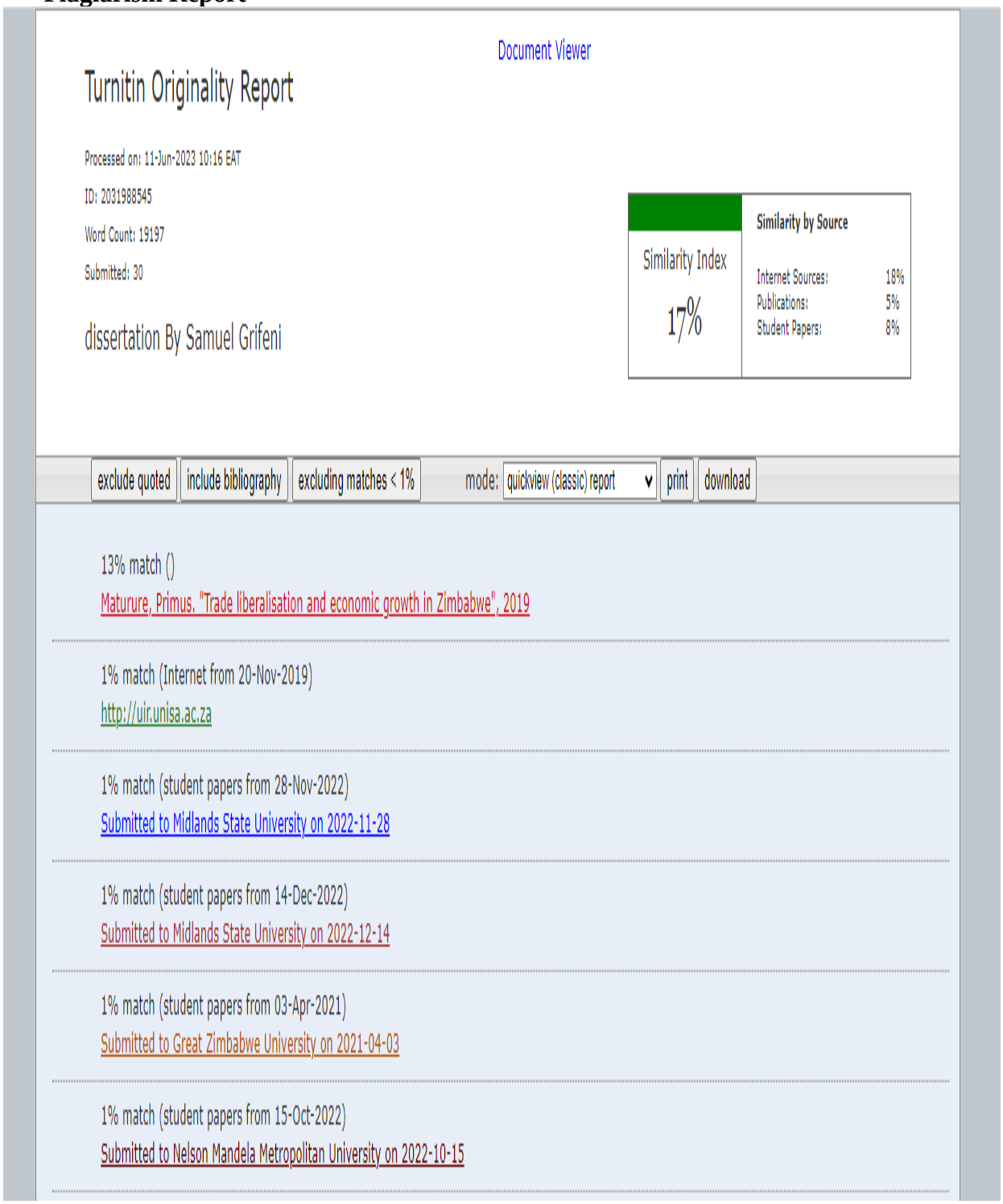

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BINDURA UNIVERSITY OF SCIENCE EDUCATION. FACULTY OF COMMERCE DEPARTMENT OF ECONOMICS. TRADE OPENNESS AND ECONOMIC GROWTH IN ZIMBABWE. Is investment in capital goods essential? (1985 TO 2021) RESEARCH BY SAMUEL GRIFENI B192755B A DISSERTATION SUBMITTED TO THE BINDURA UNIVERSITY OF SCIENCE E DUCATION IN PARTIAL COMPLETION OF THE REQUIREMENTS FOR THE BA CHELOR OF COMMERCE (HONOURS) DEGREE IN ECONOMICS 2023 RELEASE FORM AUTHOR'S NAME: GRIFENI SAMUEL REG NUMBER: B192755B TOPIC OF RESEARCH: TRADE OPENESS AND ECONOMIC GROWTH IN ZIMBABWE. Is investment in capital goods essential? (1985 TO 2021) PROGRAME: BACHELOR OF COMMERCE (HONOURS) DEGREE IN ECONMICS. 2023 SIGNED..... ADDRESS : 4955 KUWADZANA 6, HARARE, ZIMBABWE DATE..... ii APPROVAL FORM The undersigned attests that they have read the project titled "Trade Openness and Economic Growth in Zimbabwe. Is investment in capital goods essential?" that was submitted by SAMUEL GRIFENI as part of the requirements for the Bachelor of Commerce (Honours) Degree in Economics and have recommended it to Bindura University of Science Education for

acceptance. …… Student's Signature ……..../……/…… Date …….. ……/……/…… Supervisor's Signature Date ……..... ……/……../…….. Chairman's Signature Date iii DECLARATION I, Samuel Grifeni, confirm that I am the sole author of this research project and that I have provided complete references for all sources used or quoted. The project does not contain any extracted or replicated content from previous sources without proper attribution. Name of student SAMUEL GRIFENI signature ……. date …….. iv DEDICATION This Research project is dedicated to my Aunty C. Mugoro, uncle Charming, baba Takudzwa' family, baba Atipa's family, uncle Tinaye and all the members of the family for the endless support and contributions towards my academic life. To my parents for the contributions. Love you all! v ACKNOWLEDGEMENTS Above all, I want to thank God for the gift of life and everything he did in my life and he has done towards this dissertation to be completed. I would like to extent my heartfelt gratitude to Mr. Chigusiwa my supervisor, for being committed and an excellent mentor. His guidance, assistance, advice and encouragement through the completion of this research project. I am also thankful to my family for their support and prayers during this research study. vi ABSTRACT The purpose of this study is to assess the impact of trade liberalisation on economic growth in Zimbabwe and how the interaction of trade openness and investment in capital goods contribute towards GDP Growth, using annual data collected between 1985 and 2021. While other theories suggest that international trade can be a problem to a country's revenue and technology transfer, the study aims to provide more insight into the impact of trade liberalisation on Zimbabwe's economy. The study uses the Ordinary Least Squares approach to analyse the data and determine the relationship between trade liberalisation and economic growth. The results of the study show a positive relationship between trade liberalisation and economic growth in Zimbabwe which indicates that open trade policies are useful towards economic growth. In addition, the results prove that the interaction of trade openness and investment in capital have positive relationship with economic growth. As a result, the study recommends that policy makers and government negotiators in Zimbabwe introduce measures that encourage exports through development of local production capabilities and fostering growth in efficiency and competitiveness. Additionally, the study suggests that fiscal policies aimed at boosting government expenditure could be put in place to promote economic growth in Zimbabwe. In summary, the study provides insights that could guide policy makers in Zimbabwe to adopt more effective measures to grow the country's economy. vii Contents

ABBREVIATIONS AND ACRONYMS ADF Augmented Dickey Fuller AEC African Economic Community BG Breusch Godfrey BLUE Blue Linear Unbiased Estimator CEE Central and Eastern Europe COMESA Common Market for Eastern and Southern Africa CPI Consumer Price Index DF Dickey Fuller DQAF Data Quality Assessment Framework DSGE Dynamic Stochastic General Equilibrium EAC East African Communities ETS Export Retention Schemes FDI Foreign Direct Investment FTA Free Trade Area GATT General Agreement on Tariffs and Trade GDDS General Data Dissemination System GDP/G Gross Domestic Product Growth GNU Government of National Unity GoZ Government of Zimbabwe HO Hecksher-Ohlin ILO International Labour Organisation NIC Newly Industrialized Countries OECD Organization for Economic Cooperation and Development OLS Ordinary Least Square PP Phillips Peron R&D Research and Development RBZ Reserve Bank of Zimbabwe RGDP Real Gross Domestic Product SADC Southern African Development Community SAL Structural Adjustment Loan xi SEE South East Europe SSA Sub Saharan Africa TFTA Tripartite Free Trade Area UDI Unilateral Declaration of Independence UN United Nation UNSD United Nations Statistics Division USA United States of America VAT Value Added Tax WDI World Bank Indicators WITS World Integrated Trade Solutions WTO World Trade Organisation ZIMPREST Zimbabwe Programme of Economic and Social Transformation ZIMSTAT Zimbabwe National Statistical Agency xii CHAPTER 1

1.1 Introduction International trade is regarded as a key driver towards national development through increasing access to the international market and the improvement in local production capabilities necessitated by international competition and access to improved technologies (Nyarota et al., 2015). Its positive impact on social welfare and human development cannot be overlooked, as it offers a diverse range of standards and preferences to individuals (Nyarota et al., 2015). The correlation between trade openness and economic growth has sparked intense debates among policymakers and economists worldwide (Nyarota et al., 2015). The scholarly discourse on the trade policies necessary to foster long-term economic growth holds particular significance for developing countries and those undergoing transitions (Nyarota et al., 2015).Experts and policymakers firmly believe that globalization and trade, driven by trade openness, serve as the primary drivers of growth and development for many developing nations (Dritsakis and Stamatiou, 2016). Furthermore, trade liberalization fosters healthy competition among countries, leading to enhanced productivity. Gries and Redlin (2012) put forth the idea that trade activities, coupled with a country's competitive advantage, facilitate the efficient and effective utilization of resources. By promoting the free movement of capital and trade among nations, trade liberalization introduces fresh ideas, advanced technologies, and encourages innovation. It also attracts foreign direct investment, bolstering economic prospects (Gries and Redlin, 2012). 1.2 Background of the study Looking back to the 1960s, the Zimbabwean economy has been significantly impacted by sanctions imposed in response to the Unilateral Declaration of Independence (UDI) (Renwick, 1981). From 1965 to 1980, under the leadership of Ian Smith, the British government implemented institutional policies aimed at promoting self-sufficiency and economic independence (Renwick, 1981; Hatendi, 1987). During the period between 1965 and 1974, the Gross Domestic Product growth (GDP/G) experienced an average growth rate of 7 percent. However, the war of independence disrupted economic activities and led to a decline in growth (Davies and Rattso, 1999). Following independence in 1980, the Zimbabwean government implemented measures to address the relationship between economic growth and import capacity. These measures focused on export

promotion, resulting in trade growing as a percentage of GDP by an average of 38 percent, while GDP itself grew at an average rate of 4.5 percent annually from 1980 to 1986 (Nyarota et al., 2015; Davies and Rattso, 1999). In order to improve economic conditions, the government of Zimbabwe, with the assistance of Bretton Woods Institutions, adopted Economic Structural Adjustment Program (ESAP) in 1990 and the Zimbabwe Programme of Economic and Social Transformation (ZIMPREST) in 1997. These programs placed a strong emphasis on trade liberalization and reduction of government expenditure (GoZ, 1991; Davies and Rattso, 1999). The government implemented trade and economic reforms such as Export Retention Schemes (ETS) and relaxed exchange controls. These actions, among others, led to a decline in GDP growth from 6.98 percent in 1990 to 0.20 percent in 1995. However, between 1996 and 2001, the government reduced expenditure and increased exports, resulting in an average GDP growth rate of 2.25 percent. According to data from the World Bank in 2016, total trade as a percentage of GDP increased from 35 percent in 1990 to 68 percent in 2001. During this period, Zimbabwe's economy was open to trade, allowing domestic individuals and corporations to open foreign accounts, engage in free trading of ETS entitlements, borrow externally, and unify exchange rates. From 2002 to 2008, the Zimbabwean economy faced hyperinflation, with the most severe period occurring in 2008. Total trade as a percentage of GDP increased significantly during this time, rising from 66.8 percent in 2002 to 109.2 percent in 2008 (ZIMATAT, 2016). In 2008, the GDP growth rate sharply declined to a negative 17.7 percent. However, in 2009, the economy began to recover following the introduction of a multicurrency system, with the United States dollar as the main currency, and the formation of the unity government (Government of National Unity). From 2009 to 2016, the country experienced a GDP growth rate of 6 percent, although imports continued to exceed exports (ZIMSTAT, 2016). The economy saw a small increase in GDP in 2018, primarily due to resources being directed toward election preparations. GDP started to grow again in 2019 and 2020, albeit at a modest rate (ZIMSTAT, 2016). The economy of Zimbabwe faced a hyperinflation during the period from 2002 to 2008 and it was severe in 2008. During that period, the economy experienced a high increase in total trade as a percentage of GDP from 66.8 percent in 2002 to 109.2 percent in 2008 (ZIMATAT, 20016). In the same year (2008), GDP growth rate decreases sharply to a negative 17.7. After the completion of the year 2008, in 2009 the economy recovered due to the introduction of multicurrency system with the United States dollar being the main currency and also by the formation of the unity government (Government of National Unity) (GNU). GDP growth rate of 6 percent was recorded during the period from 2009 to 2016 although imports remained above exports (ZIMSTAT; 2016). The economy experienced a small increase in GDP in the year 2018 and was due to the reason that the resources that must be used for growth were used in the election preparations because that was the election year. GPD started to grow in 2019 to 2020 and the increase was not too much (ZIMSTAT; 2016). The economy of Zimbabwe faced a reduced GDP Growth rates from the years 2019 up to 2021 of 8 percent on average. This was followed the corona virus pandemic lockdowns. The pandemic was severe to the extent that all economic activities was affected and this cause the GDP growth of the country to fall extremely (ZIMSTAT; 2021). Since 1948, Zimbabwe has been a member of the General Agreement on Tariffs and Trade (GATT), and in 1995, it became a member of the World Trade Organization (WTO), which replaced GATT. The WTO's role is to facilitate trade negotiations, enforce agreements, and resolve disputes among its members (Bacchetta and Janse, 2003). Zimbabwe is also a member of the Southern African Development Community (SADC) and the Common Market for Eastern and Southern Africa (COMESA), regional organizations that promote free trade. As part of these regional arrangements, Zimbabwe has signed bilateral trade agreements with neighbouring countries such as Botswana, South Africa, Mozambique, Namibia, and even non- neighbouring Malawi, with the aim of encouraging trade openness and reducing trade barriers, particularly tariffs (SADC, 2012). Despite the push towards trade openness, recent evidence suggests that

trade reforms may not have yielded the expected results (Nyarota et al., 2015). Zimbabwe's economic history serves as a case in point to further explore the relationship between trade openness and economic growth. Therefore, this study aims to establish a long-term relationship between trade openness and economic growth in Zimbabwe, employing co-integration methods. Given the country's history of declining economic growth, decreasing exports, increasing imports, and inconsistent trade policies, understanding the impact of trade openness and GDP growth becomes crucial for Zimbabwe. While it is commonly recognized that both exports and imports play essential roles in promoting economic growth, previous research has predominantly focused on exports alone, often perceiving imports as a leakage that drains money from the country and leads to 3 unemployment rather than economic growth (Jonsson and Subramanian, 2001; Sinha and Simha, 2003; Chen, 2009). However, in a developing country like Zimbabwe, which relies heavily on imports, disregarding the effects of imports on economic growth would be short- sighted, as imports can have significant implications for growth. This study aims to contribute to existing literature by taking into account the impact of imports on growth and incorporating time series data spanning from 1985 to 2021. Previous studies conducted in Zimbabwe have already neglected the effects of imports on economic growth, despite their importance. Furthermore, this study will utilize time series data on trade openness, Gross Domestic Product Growth (GDP/G), Investment in Capital Goods (IKG), Foreign Direct Investment (FDI), Government Expenditure (GVT), Total Labour (TLF), and inflation rates (INF) to examine the relationship between trade liberalization and economic growth. FIGURE 1.1: GDP/G PROGRESSION 30 20 10 0 -10 -20 1985 1990 ESAP 1995 2000 2005 (ETS) ETS Entitlements 2010 2015 2020 Multicurrency system The figure above shows the progression of GDP Growth over the period from 1985 to 2021 and below the years on the horizontal axes are policies introduced by that time in order to recover the GDP growth position. 1.3 Problem Statement Trade openness is one of the key factors that have been identified to contribute to economic growth in many countries. Zimbabwe is an important case study for evaluating the relationship 4 between trade openness and economic growth due to the numerous economic and political challenges that the country has faced over the past few decades. The country has experienced a decline in economic growth over the past three decades, with some analysts attributing this to a lack of investment in capital goods. The question arises as to whether investment in capital goods is indeed essential for economic growth in Zimbabwe, and whether there is an interaction between trade openness and investment in capital goods in driving economic growth. Despite Zimbabwe's efforts to promote trade openness as a means of achieving economic growth, the country has experienced a lacklustre performance in terms of its economy. This raises the question of whether investment in capital goods is an essential factor for achieving sustainable economic growth, and if so, how trade openness can be leveraged to attract investment in such goods in Zimbabwe. Therefore, the problem statement of this dissertation is to investigate the relationship between trade openness, investment in capital goods, and economic growth in Zimbabwe over the period 1985 to 2021, with the aim of identifying policy recommendations that can promote greater investment in capital goods and drive economic growth. Specifically, the study seeks to determine whether investment in capital goods is a necessary precondition for trade openness to promote economic growth and the role of financial development in the relationship between trade openness, investment in capital goods, and economic growth. 1.4 Objectives of the study The study is carried out paying more attention to the objective of empirically examining the relationship between trade liberalisation and economic growth (GDP/G) in the economy of Zimbabwe. Because of this reason, the study have been carried out in regard with the following sub objective; ? To assess the impacts of trade liberalisation and economic growth in the country of Zimbabwe. ? To assess the effects of investment on capital goods on economic growth using Zimbabwean experience. ? To explain the impacts of foreign direct investment towards economic growth. ? To evaluate government expenditure affects the growth of

the economy. ? To explore the impacts of inflation on the GDP growth. ? To explain to effects of labour force towards economic growth (GDP Growth) ? To assess how the interaction of trade openness and investment in capital goods affects the growth of the economy. ? To give recommendation on international trade policies, based on the findings of the study 1.5 Hypothesis The study was carried on the null hypothesis that: H0: trade liberalisation increases economic growth. 1.6 Significance of the study Despite the abundance of empirical studies and theoretical advancements examining the impact of trade liberalization on economic growth, there remains a need to explore this relationship further, particularly in developing countries. While numerous studies have been conducted in developed countries, research focusing on the effects of trade on growth in developing nations, such as Zimbabwe, has been limited. Few studies have specifically investigated the relationship between trade liberalization and economic growth in Zimbabwe. Previous research conducted by Mandishekwa (2016), Gwaendepi, Musara, and Dhoro (2014), and Babatude (2001) has explored the linkages between trade openness and growth, but these studies were primarily based on historical and cross-sectional data. This approach fails to address the current dynamics and challenges faced by the country, as cross-sectional data grouping countries at different stages of economic development may not capture the specific issues related to trade openness and economic growth. Another challenge arises from the lack of up-to-date information and studies on the impacts of trade activities on growth in Zimbabwe. This knowledge gap has led to the formulation and implementation of trade policies that may have unintended negative effects on trading partners, investors, manufacturers, the population, and the overall economy. To address these challenges, there is a pressing need for an empirical study that examines the relationship between trade liberalization and economic growth, taking into account the current context. This study aims to fill these gaps by empirically investigating the true nature of the relationship between trade activities and economic growth in Zimbabwe, utilizing time series data spanning from 1985 to 2021. The findings of this study will contribute to the existing body of research, providing valuable insights for government negotiators, policymakers, and decision-makers in formulating and implementing effective trade policies. Additionally, this study aims to provide a foundation for future research on trade and economic growth, offering guidance to upcoming economists and scholars in tackling trade-related challenges in the future. The reason behind all these being that there little understanding of how trade practices affect economic growth since a few work was done to examine the link between trade and growth in Zimbabwe. 1.7 Assumptions This study was carried out based on the main assumption that there is a positive relationship between trade liberalisation and economic growth in Zimbabwe. In other words, the study assume that trade openness contribute more towards economic growth in Zimbabwe. The study also assumes that economic growth is being affected by other variables or factors that were used in this study which are Investment in Capital goods, Government Expenditure, Foreign Direct Investment, Inflation and Total Labour Force. 1.8 Delimitations This study aims to investigate the relationship between trade liberalization and economic growth in Zimbabwe from 1985 to 2021, focusing on a country-level analysis. In order to gain a comprehensive understanding of this relationship, the study also examines the contributions of other variables, including total labour, inflation, foreign direct investment, investment in capital goods, government expenditure and the interaction of trade openness and investment in capital goods, to economic growth. However, the primary focus of this research is to quantitatively analyse the impact of exports and imports on the country's growth, as measured by GDP growth (GDP/G) The choice of Zimbabwe as the main subject of this study is based on its historical significance in implementing trade-led economic growth and development policies. The researcher's in- depth knowledge of the Zimbabwean economy, its economic development trajectory, and trade policies, as well as familiarity with the socio-economic structure, have played a crucial role in selecting this geographical area for the study. Furthermore, Zimbabwe is a small agro-based economy situated in Southern Africa, heavily reliant on the import and

export of primary products with its trading partners. By focusing on Zimbabwe, this study aims to shed light on the specific dynamics and challenges faced by this particular economy in relation to trade liberalization and economic growth. Through a rigorous analysis of the data, the study seeks to provide valuable insights that can inform policymakers, economists, and stakeholders in formulating effective trade policies and promoting sustainable economic development. 1.9 Limitations Studying the relationship between trade liberalization and economic growth is an ongoing process, requiring continuous observation and analysis of the dynamic linkages between these macroeconomic variables. It is essential to predict the future trajectory of these variables in the long run, enabling proactive measures to be taken to correct any potential shocks. Furthermore, future studies should consider incorporating additional variables that are relevant to studying the link between trade openness and economic growth. This study primarily focuses on examining the relationship between trade openness and economic growth within the context of Zimbabwe. It is important to note that the findings of this study may not be directly applicable to other countries at a similar level of development, as each country has its unique characteristics and circumstances. Therefore, conducting a broader study encompassing multiple countries, particularly within the Southern African or Sub-Saharan region, would provide a more comprehensive understanding and enable more accurate generalizations about developing countries. The selection of variables in this study is limited by the availability of reliable data sources. Due to data constraints in Zimbabwe, the study had to rely on a limited set of variables, using data obtained from sources such as the World Development Indicators (WDI) and ZIMSTAT statistics. However, it is important to acknowledge that the data obtained may not be 100 percent accurate or representative of the real situation on the ground. For instance, some figures, particularly those related to inflation from 2006 to 2008, are estimates and may not reflect the true state of affairs. It is crucial to be aware of these limitations and exercise caution when interpreting the findings of this study. Efforts should be made to improve data collection and accuracy in future research, ensuring a more robust foundation for analysing the relationship between trade openness and economic growth. 1.10 Definition of terms Gross Domestic Product: It is the market value of all the final goods and services produced within a country in a given time period (Samuelson & Nordhaus, 2010:370). Foreign direct investment: Foreign direct investment (FDI) is broadly defined by Danziger (1997) as an investment made by a foreign investor to acquire a continuing stake in a business that operates outside of the investor's home country. Trade liberalisation: The act of eliminating or lessening limitations and obstructions on exchanging goods and services without restraint across different countries is commonly referred to as free trade. This is an essential aspect of economic globalization and is believed to be an effective means of fostering economic progress and advancement. Ordinary Least Squares: One approach utilized for approximating the coefficients of a linear regression formula that depicts the connection between a dependent variable and one or several independent quantitative variables is known as a common technique (referred to as Ordinary Least Squares). This technique is used for both simple and multiple linear regression models. (Source: Gujarati, 2003) Investment in capital goods (IKG): Danziger (1997) defines IKG as the amount of capital investment made by the government, businesses, and individuals in the country to purchase physical assets such as machinery, equipment, and infrastructure, which are used in the production of goods and services within the country 1.11 Summary This chapter put more attention on the introduction of the study area in which a bit explanation of the main study. This chapter also covers other sections which are the background of the study, problem statement, and research objectives, hypothesis, significance of the study, assumptions of the study, delimitation, limitations and definitions of the terms. CHAPTER 2 2.1 Introduction More theories that offer different justifications, arguments, and conclusions about the link between trade openness and economic growth are also accessible. While some of the hypotheses revealed a favourable relationship between these two, others suggested a negative relationship between trade and

economic growth. According to some theories, there is zero correlation between these two. This section will look at how classical and neoclassical theories, modern trade theories, and endogenous growth models have conceptualized the relationship between global trade and economic growth. Reforms to trade law and practice in developing countries will also be covered. 2.2 Theoretical review There are more ideas available that provide various justifications, arguments, and conclusions regarding the connection between trade openness and economic expansion. Some of the hypotheses put out a positive association between these two, while others suggested a negative connection between commerce and economic expansion. Some ideas claim that there is absolutely no connection between these two. This part will examine the theoretical perspective of international trade and economic growth as it was represented by classical and neoclassical theories, new trade theories, and endogenous growth models. It will also discuss trade policy reforms in developing nations. 2.2.1 Mercantilist view of trade According to Blaug (1978), the mercantilist philosophy had a strongly patriotic viewpoint and supported state regulation and centralization of economic activities, including foreign trade. The mercantilist held that a country's holdings of gold and silver were a good indicator of its richness and prosperity. In other words, according to the argument, a nation should have more gold and silver on hand in order to boost exports and cut back on imports. This notion is supported by regulations that limit imports, encourage the storage of gold and silver, and safeguard regional businesses. A country might amass gold and silver at that time by exporting more and importing less since gold and silver served as the medium of exchange for international trade (Blaug, 1978; Pentecost, 2000:4). Greater the gold and silver a nation had the richer and more powerful it was. Government should do every effort to maximize exports and decrease imports, according to the mercantilist school of thought (Pentecost, 2000:4-5). Imports were thus discouraged in order to have an export surplus, while exports were promoted in order to ensure economic growth. One nation could only benefit at the expense of other nations because no two countries could simultaneously have an export surplus and because the amount of gold and silver available at any given moment was finite (Pentecost 2000:5–6). Mercantilists believed that commerce should result in a surplus in the balance of payments. In order to achieve a high trade surplus, which the mercantilists defined as an excess of exports— both visible and invisible—over imports, they pushed for the importation of gold, the extension of credit to other nations, or capital exports (Blaug, 1978; Pentecost, 2000:5-7). By pushing producers to focus on items and services that do not benefit from comparative advantage and by encouraging the overproduction of goods and services with high opportunity costs, mercantilism impeded economic growth. 2. 2.2 Trade and growth in the traditional theories of growth Adam Smith, who developed the idea of the absolute advantage, contributed to the development of classical conceptions. Smith claims that the idea of absolute advantage is the foundation of mutually beneficial commerce (Pentecost; 2000:7). According to the theory of absolute advantage, free trade is the best option for enabling businesses to specialize and devote more resources to the production of the items they can produce most effectively. Companies benefit from economies of scale as a result of this specialized output, which in turn boosts productivity and, ultimately, economic growth (Samuelson & Nordhaus, 2010:342). A free trade system encourages more businesses to innovate since it gives them an incentive to do so. Businesses are able to develop more beneficial products, superior production and delivery methods, and more effective business practices. Businesses can succeed and expand, which will increase national output (Alfonso, 2001). By broadening the market, free trade enabled the division of labour and promoted technical innovation, so facilitating the increase of productivity and total economic growth. Free trade also makes it simple for a country to overcome the limitations of internal trade and the internal market. 2.2.3 Trade and Growth in the Neo Classical theories This thesis was created by Heckscher-Ohlin, who thought that a nation needed to specialize and pay greater attention to producing and exporting items that matched its factor endowment. The static analytical

framework is utilised by this theory, just as it is by the conventional 11 comparative cost theory (Heckscher, 1919; Ohlin, 1933). By assuming that factor endowment is fixed, this theory differs from other theories in that it predicts that trade patterns and composition will remain constant. According to Neo Classical Theory, all forces of production, including labour, capital, and land, are mobile inside a nation but stationary internationally (Feenstra, 2004: 4-5). Additionally, it is generally expected that things are completely transportable both within and between country and between countries (Heckscher, 1919; Ohlin, 1933. The assumption implies that relative supply of labour and capital cannot be altered by imports and exports of these factors and also rules out the growth pattern in order to alter factor endowment of the nation. According to the Heckscher-Ohlin model, trade would raise the demand for commodities made possible by the nation's plentiful resources (Feenstra, 2004:36). The majority of developing nations have an abundance of labour, and it is predicted that demand for labour-intensive goods would rise. Free trade was created for developing nations as a platform for learning cutting- edge technologies from developed nations (Feenstra, 2004: 48–56). The Heckscher-Ohlin model also illustrates how free trade will lead to increased aggregate efficiency and, ultimately, economic growth in a country. Production of both items in both nations will alter as a result of the price adjustment (Feenstra, 2004:37–40). Each nation will produce more exports and less imports, which raises the nation's overall productivity. On the other hand, technological advancement will increase labour and capital productivity , removing diminishing returns and speeding up economic expansion (Solow, 1956). Technological innovation leads to higher output when there is a certain amount of labour and capital available (Solow, 1956). Prices are taken to be constant throughout Solow's theory on growth, and actual output determines the need for money. According to this supposition, the real rewards of capital have an impact on the decision to hold capital stock vs liquid money (Solow, 1956). Free trade also makes it possible for affluent nations to transfer technology and highly qualified personnel to less developed nations (LEDC), which will boost output and spur economic growth. 2.2.4 The Trade and Growth in the endogenous growth theories. Romer (1986) and Lucas (1988) made bigger contributions to the development of the endogenous growth model, which emphasized the role that capital accumulation plays in long-term economic growth. In contrast to the neo-classical theories of growth, these theories placed more focus on broadly defining capital, which encompassed ideas or information, learning via 12 experience, and human capital. According to endogenous growth theories, government policies, rather than the capital's falling marginal productivity, determine economic growth over the long term (Romer, 1986; Lucas, 1988). 2.2.5 Trade and growth with Human Capital Accumulation This idea was developed by Lucas (1988), who proposed a two-sector model of incidental learning through practice. He examined how human capital contributes to growth through international trade in his two sector model. This approach makes the assumption that knowledge is acquired by employees through experience gained at work. Simply put, employees do not choose companies in order to learn or build up their human capital; rather, Lucas (1988) found that employees build up their human capital through unintentional learning. Human capital is considered endogenous since decisions about its accumulation are largely influenced by the dynamic dynamics of the economy (Lucas 1988, Kebede; 2002). Since the development of human capital plays a central role towards growth, this makes growth itself to be endogenous as well. Free trade increases on the job human capital accumulation thereby boosting institutional quality, overall economic growth. Young (1991) adds to this learning-by-doing strategy and investigates the dynamic impact of global trade on growth. According to Young (Young 1991), less economically developed nations exhibit lower growth rates under free trade than they do under anarchy. According to the concept, short-term government spending on high technology firm subsidies gives the economy a competitive edge over its rival and, as a result, a long-term and growing technical advantage (Kebede, 2002). The quality of consumption items and human capital both rise at the same pace in a stationary growth path, according to Stockey (1991). The

model suggests that enacting free trade policies may delay the rate at which human capital is accumulated due to its effects on investment in human capital accumulation when the country is developing at a sluggish rate under restricted commerce or the autarky (Stockey; 1991). High skilled labour is in high supply everywhere in a free trade economy, which lowers the cost of items produced by high skilled labour and, in turn, reduces the motivation to engage in the building of human capital (Stockey; 1991). The developing nations will eventually lag behind the rest of the world in terms of human capital. This does not mean that free trade is dangerous in developing countries since on one time the static gains from trade exceeds the cost caused by the slower growth rate of human capital. 2.2.6 Trade and growth with technological progress 13 According to knowledge-driven models developed by Grossman and Helpman (1991) and Rivera-Batiz and Romer (1991), the economy's growth is determined by the rate at which new products are innovated. The growth rate of innovation in the research and development (R&D) sector is dependent on the level of employment and the current body of knowledge. Therefore, the amount of information already present or the number of workers employed in the R&D sector determines how quickly the economy grows. The foundation of knowledge in every country is the same and stays so in the absence of free exchange of ideas (no knowledge spill over). Thus, the growth in the amount of employment in the research and development sector might lead to increased economic growth (Rivera- Batiz & Romer, 1991). According to models created by Grossman and Helpman (1991), a higher degree of liberalization enables LEDCs to quickly adapt to the technologies being produced in advanced countries and, as a result, to expand in equilibrium more quickly than with a lesser degree of openness. Grossman and Helpman (1991) assert that when a nation engages in free trade, the amount of capital goods employed will approach twice that used prior to the introduction of free trade, and concurrently, the market size for the new products increases twice that of prior to the introduction of free trade. Additionally, it is suggested by Grossman, Helpman, Rivera-Batiz, and Romer (1991a) that trade liberalization will have an impact on how resources are allocated. Because the country is open to commerce in general, comparative advantage is the factor that determines the migration of resources from one sector to another. The model suggests that rather than importing, the R&D sector's activities is entirely linked to the exporting industry. Free trade also aids a nation in avoiding bad product reputation (Grossman and Helpman; 1991). Additionally, a larger market allows for the availability of intermediate goods at extremely low prices, which in turn promotes R&D initiatives and economic expansion. When there is learning, large market sizes accelerate learning by doing operations (Davies; 1991). The issue of new product creation and production in high income countries with lower wage rates is well analysed by the product cycle theory (Vernon; 1966; Wells, 1968).In addition, it places more attention on how a product could start out as an export before changing to import at the end of its life cycle. Posner (1961) was the first to analyse the role of processes of imitation and invention in determining the pattern of international trade. Vernon (1966); Wells (1968); and. According to the international product life cycle, the most important factor in determining trade patterns is a rise in market size and technological innovation. 14 The model highlighted foreign direct investment and claimed that it was the primary channel for technology transfer. Wells (1968) argues that free trade will result in the transfer of technology from highly industrialized to emerging nations, resulting in more efficient production techniques, higher output, and faster economic growth in the recipient nation. This model is useful for policymakers because it allows them to develop advanced policies that will promote exports and decrease import competition, both of which will contribute to total growth. 2.2.7 The New Trade Theories According to economists Helpman and Krugman's (1985) "new trade theory," trade's effects on economies of scale encourage economic growth. Additionally, by enhancing the best resource distribution amongst the sectors producing materials and knowledge, economic growth is promoted. The major mechanism for explaining the observed increase in trade in relation to

income, according to the model, is changes in the distribution of income among industrialized nations. According to the new trade theory (Helpman and Krugman 1985), trade patterns can be explained in terms of rising returns and uneven competition. This provides a theoretical foundation for the increasingly observed intra-industry trade. Companies continue to merge in order to gain from growth while also time would locate hear the markets where transport cost is low. Long ago, research centred on the micro foundations of global trade, or the factors that influence people to engage in international trade. Melitz's ground-breaking 2003 paper, which models explicitly the export decisions of companies with diverse levels of production efficiency, offered a very significant extension of modern trade theory within a general equilibrium framework. Melitz (2003) also illustrated a fresh source of commercial gain. He explains that when trade barriers are reduced, this stimulates global competition, drives out low-productivity firms that are shielded by barriers, and replaces them with an increase in the output of high-productivity firms. As a result, overall productivity of the country rises. 2.2.8 Trade policies reform in developing countries As capital goods were eventually produced for both local and export markets, trade policies implemented in previous decades were primarily focused on the proportion of finished and intermediate commodities exported (Makochekanwa, Hurungo, and Kambarami; 2012). High foreign exchange revenues from these initiatives are anticipated, which will lower unemployment and balance of payment imbalances. The majority of developing nations offer a variety of incentives to businesses interested in manufacturing exports, including custom duty 15 exemptions, VAT exemptions, manufacturing under loan programs, export processing zones (EPZs), and government export subsidies. 2.3 Empirical literature review Developing countries are now putting trade policies into place to promote their products in the global market, particularly to newly industrialized and wealthy nations (Getz, 2008; Makochenwa et al., 2012). The current goal of trade policies is to quicken industrialisation processes and ease access to international markets (UN, 2007). More regional, bilateral, multilateral, and preferential trade agreements have been strengthened and developed in emerging nations. Among the agreements that have impacted African trade policy are the AEC, SADC, COMESA, the Two WTO, and the East African Communities (EAC). To solidify the reorientation of their economies and complete the shift to outward economies, the majority of developing nations are actively pursuing trade liberalization and structural reforms. According to Saungwene (2013), the metric should make it easier to allocate resources effectively while taking into account the strengths of each economy. The enhancement of multinational pledges, the transparency, application, and enforcement of current law will inspire trust in the reforms and draw FDI. Since 2000, the majority of developing nations have removed trade protection between emerging nations and the rest of the world in terms of trade in commodities and services (OECD, 2008). Today's trade policies are based on globalization and trade liberalization, both of which are fuelled by competition. International commerce and export-led growth plans have been primarily blamed for the industrialization and quick expansion of developed and newly industrialized (NIC) nations. The goal of trade policy is to make nations more open, competitive, and export-driven, but in the majority of developing nations, this transformation is still in progress. One of the most widely referenced studies on the connection between trade openness and growth is the one by Dollar (1992). Based on the two distinct indices of real exchange rate distortion and real exchange rate fluctuation, Dollar (1992) creates a measure of the economy's outward direction. In a sample of 95 developing nations during the years 1976–1985, the indexes all had a negative correlation with growth. The study's outward orientation metric was created using data on relative pricing levels around the globe that Heston and Summers (1988) had prepared. The Summers-Heston data comprised comparative price indices for similar consumer goods in several nations. According to Dollar (1992), trade openness is positively correlated with economic growth. His findings suggested that trade liberalization could substantially improve growth performance in many poor countries. In many ways, Rodrik and Rodriguez's (2000) critique of Dollar's study. First off, even

if the law of one price applies, equal taxes on import and export will have differing effects on the relative price level. Second, there are significant practical issues with the presumption that the law of one price always applies in the context of free commerce. First off, even if the law of one price applies, equal taxes on import and export will have differing effects on the relative price level. Second, there are significant practical issues with the presumption that the law of one price always applies in the context of free commerce. It is conceivable to examine the cross-country disparities in price levels as a function of monetary and exchange rate policies rather than trade restrictions if the dollar's time horizon (1976–1985 period) is not sufficient to exclude departures from the law of one price that are not related to trade barriers. Finally, some significant growth drivers are not included in Dollar's (1992) growth regression. Despite the objections, Dollar's research is still important for developing countries since the real exchange rate is a crucial element in determining the advantages, direction, and degree of trade openness. By putting together data on many facets of trade policy, Sachs and Warner (1995) created an index of openness in an effort to address the issue in the literature. To create a Sachs-Warner openness indicator, factors such as the average tariff rate, non-tariff barrier, and monopoly of main exports were among others. They looked at both closed economies and the subset of open economies for growth performance. In conclusion, the regression results from Sachs and Warner (1995) offered convincing evidence that protectionist trade policies negatively affect overall growth performance directly and indirectly by slowing the pace of accumulation of physical capital. Harrison & Hanson (1999), Rodrik and Rodrguez (2000), and others have harsh criticisms of the Sachs-Warner openness metric. They held that the socialist country dummy and the black market premium, two factors unrelated to trade policy, were responsible for the relevance of the Sachs-Warner openness measure. The developing nations still have the greatest need for the Sachs-Warner openness metric because of the persistence of protectionist trade practices. Certain regulations limit the benefits of commerce and economic progress in certain countries. Another study by Greenaway, Morgan, and Wright (2002) used a sample of twenty-five developing countries to investigate the effect of trade liberalization on economic growth. According to the findings employing a dynamic panel framework and three different liberalization indicators, liberalization may have a favourable effect on real GDP growth. In their study, Greenaway et al. (2002) demonstrated the "J"-shaped link between trade and growth, with trade initially increasing but later declining at specific levels. However, it appears that the impact will be small and delayed. This is because trade liberalization varies when it is put into effect in terms of its depth and intensity. In their 2003 study, Wacziarg and Welch focused on emerging and developing economies to examine the connection between trade openness and economic growth. Wacziarg and Welch (2003) updated and expanded the Sachs-Warner openness dummy across the 1990-2000 era using a first-difference in growth technique. These writers came to the conclusion that in the 1990s, this variable was no longer important. However, they looked at the time courses of growth within nations between 1950 and 1998 and came to the conclusion that, on average, after trade liberalization, nations' annual growth rates increased by 1.5 percentage points compared to the period before liberalization. Wacziarg and Welch (2003) attributed all growth accelerations to trade liberalization without taking into account the possibility that other variables might also spur economic growth, hence the outcome was dubious. Additionally, because macroeconomic policy adjustments like the World Bank's structural adjustment loans (SAL) programs and the IMF's structural reforms are typically implemented following economic downturns, many trade liberalization initiatives are also accompanied by other macroeconomic policy changes. Chen and Gupta (2006) looked into the relationship between trade openness and economic growth in the SADC region from 1990 to 2003. Both generalized method of moment’s estimation and generalized least squares specification were used in the investigation. The findings indicated that trade openness had a significant positive impact on regional economic growth over the study period. The researchers also emphasized how education might

enhance the impact of openness on sustainable growth by enhancing knowledge and technology spill overs from trade liberalization. In another study, Marelli and Signorelli (2011) focused on trade dynamics, degree of openness, FDI flows, and specialization patterns for two countries, China and India, using a panel data model from 1980 to 2007 with an instrumental variable approach. They used two stage ordinary least squares to evaluate the relationships between openness and growth for the two countries in terms of their integration into the global economy. The findings indicated that both nations had high levels of short-term openness while experiencing substantial economic shocks like the global financial crisis of 2008–2009, but they also suggested that opening up and becoming more integrated into the global economy had positive and statistically significant growth consequences. Free trade is therefore the greatest method to restore the world economy to satisfactory growth rates and to maintain the catching-up process of emerging nations. Free trade should be combined with appropriate reforms of the global banking system. Babatunde (2011) examined the relationships between infrastructure, FDI, and economic growth using a panel of 42 SSA countries from the 1980s to 2003. The results of the panel data technique showed that FDI and trade openness together have an impact on GDP per capita. The results reaffirmed that trade liberalization and FDI inflows both promote economic growth. Nduka (2013) investigated the relationship between trade openness and economic growth in Nigeria using time series data from 1970 to 2008. Ordinary Least Squares (OLS) and the Engle Granger two-step cointegration procedure were both used. The study found a correlation between trade openness and economic growth in Nigeria. Using a different methodology, Nduka, Chukwu, and Ugbor (2013) empirically assessed and contrasted the causal relationship between trade openness and economic growth in Nigeria in the pre and after Structural Adjustment Programme (SAP) (1970Q1- 1985Q4 and 1986-2011) eras. The unit root and cointegration were found in the study using the Augmented-Dickey Fuller, Phillips-Perron, and Engle-Granger methods, respectively. The cointegration test's findings suggested that trade openness and economic growth in Nigeria have a long-lasting, beneficial relationship. They emphasized the need for emerging nations like Nigeria to recognize more trade integration as a way to promote economic progress. Additionally, Tahir and Khan (2014) used data from the years 1990–2009 to conduct a study of 22 Asian nations. The two-stage least squares approach and panel econometric methodologies were used to conduct the empirical analysis. The findings demonstrated that trade openness has made a substantial contribution to the progress of developing nations in the Asian region. Trade openness has a favourable impact on regional economic expansion. The poor justifications for protectionism should not frighten developing nations, who are recommended to liberalize trade to boost growth rates. In Tanzania, a study was conducted by Mkubwa, Mtengwa, and Babiker (2014). The scientists employed data across time from 1970 to 2010. A closed economy period (1970-1985) and an open economy phase (1986–2010) were used to separate the periods. Utilizing the OLS method for estimation regression. The empirical results showed that trade openness had a favourable and considerable impact on Tanzania's economic growth. When compared to the open economy period, this effect was, nevertheless, somewhat more pronounced during the closed economy. It has been reported that Tanzania has had ongoing trade deficits in her accounts since the late 1980s. This has played a part in the outcomes that were seen. The policies of emerging nations should be directed toward increased free trade and the removal of trade barriers in order to achieve economic progress. Additionally, Gwaendepi, Musara, and Dhoro (2014) conducted study to look into the long- term relationships for Zimbabwe between trade and other macroeconomic factors for the years 1975 to 2005. The ratio of imports to exports to GDP was utilized in the study as a gauge of trade openness. To prove that there is a long-term correlation between trade variables and economic growth, the authors used the Engle-Granger cointegration technique approach. The study's findings suggested a positive correlation between commerce and economic growth. The relationship is made stronger by macroeconomic policy stability since adverse

macroeconomic factors like rising inflation can stifle economic growth. An important factor in promoting trade openness was the lowering and abolition of trade barriers and ultimately economic growth Using the ratio of industry output to GDP as a measure of trade openness, Tahir and Azid (2015) investigated the relationship between global trade openness and economic growth in fifty developing countries between 1990 and 2009. Two stage least squares, fixed and random effects models, and panel data analysis techniques were all used in the empirical research. The article's key finding was that, for developing nations, there was a statistically significant positive association between trade openness and economic growth. Trade openness could be gradually implemented on developing nations in order to achieve long-term economic success. In the context of the research on endogenous growth, Sakyi et al. (2015) looked at the long- term effects of foreign direct investment and trade openness on economic growth in Ghana (1970–2011). The relationship between foreign direct investment and exports has been crucial in fostering growth, according to the findings of co-integration using the autoregressive distributed lag bounds testing approach. Trade openness has consistently had a positive impact on economic growth. According to the report, long-term development objectives ought to favour export-led growth methods. Mbulawa (2015), in contrast, used time series data for Zimbabwe from 1975 to 2012 to perform an empirical analysis of the relationship between economic development and FDI, trade volume, inflation, and capital accumulation. The study's findings that trade liberalization spurs economic growth were reached using the trade openness index, terms of trade, and the vector error correction method. The study's findings showed that trade openness had a strong positive impact on economic growth in emerging countries. Zimbabwe's admission into the Tripartite Free Trade Area (TFTA) was the subject of a study by Mafudza, Tambudzai, and Kalotay in 2015. In order to quantify the benefits of Zimbabwe joining TFTA, the study examines how responsive Zimbabwe's GDP is to opening trade with TFTA nations who have not been participating in the SADC and COMESA FTAs. The empirical data showed that the nation's total economic growth is increased by the TFTA's more liberalized trade policy. Mandishekwa (2016) used time series data to investigate the relationship between trade openness, terms of trade, and economic growth in Zimbabwe. The sum of exports and imports as a percentage of GDP was used to determine trade openness. The study tested for causation using vector auto-regressive and Granger causality methods. The results of the study showed that, despite the fact that trade openness has been proven to be favourably connected with economic growth, the GDP itself is primarily responsible for most GDP changes. Shocks to trade openness were a reflection of any changes in GDP. The country should put more effort into liberalizing its economy, but this procedure needs to be carefully thought out. Gurgul and Lach (2014) focused on both linear and non-linear causal relationships between foreign trade and economic growth in the Polish economy in a different study. In order to account for the impact of the 2008/2009 financial global crisis, quarterly data for the periods 1996-2008 and 1996-2009 separately were used. A constrained VAR model that included GDP, exports, and imports was estimated by the authors. In both time periods, the results of the linear Granger causality tests showed a positive association between the GDP growth rate and the export growth rate, but no such relationship existed between the GDP growth rate and the import growth rate. Additionally, the results of the impulse response analysis showed that a shock from exports resulted in an increase in GDP during the ensuing three quarters. Were (2015) used cross-country data to experimentally investigate the varying effects of trade on economic growth and investment. The study classifies countries by their levels of economic development in order to account for the varying effects of trade and growth is made up of LDCs, developing, and developed nations. The empirical findings based on several country classifications revealed that while trade has boosted economic growth in wealthy and emerging nations, its effects on LDCs are negligible. To achieve greater growth gains, the structure and pattern of trade in LDCs and emerging nations should be changed. Musila and Yiheyis (2015) examined the connection between trade openness and economic growth in

Kenya using annual data from 1982 to 2009. Both OLS and Johansen Cointegration were used in the study. Measures of aggregate openness and openness induced by trade policy were both utilized good overall trade openness both the volume of investment and the pace of economic expansion. On the other hand, trade policy-induced openness has had a detrimental and significant impact on investment and the rate of economic growth. According to Granger Causality analysis, in the case of Kenya, a change in trade openness combined with an increase in physical capital to alter the nation's long-term rate of economic growth. Liberal trade policies may have a detrimental effect on openness when they increase the cost of intermediate manufacturing inputs, as they did for Kenya during the time of structural adjustment programs. Khobai, Kolisi, and Moyo (2017) studied the long-term association between trade openness and economic growth in Ghana and Nigeria in a study conducted between 1980 and 2016. The Autoregressive Distributed Lag (ARDL) model was used in this study to examine the long- term connection between the variables. The study's conclusions showed that there was a long- term relationship between the variables in both countries. The results also showed that whereas trade openness has a detrimental effect on economic growth in Nigeria, it has a significant positive impact on it in Ghana. The two countries' divergent outcomes may have resulted from different trade and economic policies that were put in place over time. These results suggested that different policy approaches used in developing nations can result in varied outcomes on openness-economic growth relationship. According to Tekere (2001), trade liberalization in Zimbabwe under adjustment resulted in a loss in human development, high rates of inequality, the marginalization of the poor, a high unemployment rate, as well as negative total economic growth. The study confirmed that, if implemented strategically, that is, as part of a specific national development agenda, trade liberalization may be a very successful tool and strategy for fostering growth and enhancing human development. Yanikkaya (2002) identified a tension between expansion and liberalization. The seemingly unrelated regression method published in Barro (1997) was used to estimate the cross-country growth regressions using a panel of data from 100 developed and developing countries from 1970 to 1997. When they calculated the effect for trade volume indicators, they found a strong and positive correlation between trade openness and economic growth. However, when they factored in the effect of trade restrictions and average tariff rates, their findings revealed a favourable and significant correlation between the degree of trade barriers and economic growth. The results were consistent with the theoretical growth literature's predictions that, under some conditions, small and developing economies can actually gain from trade restrictions. Ugurlu (2010) looked at how openness affected economic growth in the fifteen EU nations between 1996 and 2004. The longitudinal data or cross-sectional time series data panel data technique was applied. Growth, openness, price level, investment, and the government's portion of RGDP were the factors used. The findings showed that openness had a minimally negative effect on economic growth, which meant that openness actually slowed growth during that time. The findings indicated that trade openness had a detrimental impact on economic growth. This may be because these countries are leaders in technology and innovation, which helps less developed countries. Adhikary (2011) used time series analysis to examine the relationship between FDI, trade openness, capital formation, and economic growth rates in Bangladesh from 1986 to 2008. Following the application of the Johansen process to assess the cointegrating relationship between variables, a vector error correction model was used. The empirical findings demonstrated a bad long-term link between GDP growth rates and openness. The extent of trade openness has a detrimental but waning impact on GDP growth rates. The devaluation of the exchange rate, the significant amount of imported goods, and the unfavourable trade balance position may have contributed to the negative correlation between trade openness and economic growth rates. In Turkey, both the short- and long-term effects of trade liberalization on economic growth were determined to be unfavourable by Ulasan (2012) using the Ordinary Least Squares approach. Data from

1960 to 2000 were used by Ulasan (2012) to study Turkey. The study did not support the idea that openness has a long-term, direct, substantial link with economic growth, in contrast to many other cross-country growth studies. Data evidence led to the conclusion that trade openness had little bearing on economic growth. Ulasan (2012) hinted at the fact that improved institutions, solid and stable fiscal and monetary policies are necessary for economic growth to be guaranteed. Furthermore, Abbas (2014) came to the conclusion that the economic growth of four emerging and four least developed countries is negatively impacted by increased trade liberalization. The panel fixed effect model was employed to assess the effects of macroeconomic variables on economic growth using eight nations from across the world as an addition to the standard production function. Using a panel fixed effect model, a separate regression model was constructed for each developing and least developed economy. The results indicated that trade liberalization had a considerable negative influence on economic growth, with imports accounting for a larger share than exports. To achieve sustainable growth, developing countries should expand their production capabilities and use export promotion strategies in addition to controlling imports. In their 2015 study, Ali and Abdullah looked at the relationship and effects of trade openness on Pakistan's economic development between 1980 and 2010. The multivariate VECM and Johanson technique was used to determine the short and long run estimations. The study's findings indicated a short- term favourable association between trade openness and national GDP growth. The long-term data show that trade liberalization has a detrimental effect on Pakistan's economic expansion. This might be brought on by the lack of strong institutions and inadequate conflict management mechanisms in the nation. The adverse effect could be a result of Pakistan exporting raw materials rather than finished commodities. In India, Hye and Lau (2015) used annual time series data from 1971 to 2009 to analyze the r elationship between trade openness and economic growth.The study used a new endogenous growth model, an autoregressive distributive lag model, and the rolling window regression ap proach to analyze the theoretical relationship between trade openness and economic growth o ver both the long and short terms. Granger causality test is also used to identify the long- and s hort-term causal axes. The research revealed that the trade openness index has a long-term negative impact on economic expansion. The fresh evidence, indicating the impact of the trade openness index on economic development is not constant across the sample, is supplied by the rolling window regression results. This demonstrates that while Indian policymakers first managed the trade sector policies well, they ultimately failed. Kojo, Saban, and Yemane (2014) examined the relationship between financial development, trade openness, and economic growth for twenty- one African countries. The creation of the financial development index was based on the trade openness index and four other financial development indicators. The study used the panel bootstrapped Granger causality technique. The empirical findings provided only weak support for the trade- and finance-led growth hypotheses. According to the findings, recent efforts at trade liberalization do not appear to have had a major effect on growth in developing nations. Due to Zimbabwe's turbulent macroeconomic history, the topic of trade liberalization and economic growth has not been thoroughly examined with formal modelling and adequate econometric procedures. In Zimbabwe, studies on the export-led development hypothesis predominated, whereas those on trade openness employed dated cointegration methods such as the Eagle Granger and Johansen test. The hyperinflationary period in Zimbabwe between 2006 and 2009 was not included in the statistics used in some analyses. According to Gwaendepi et al. (2014), the economic catastrophe made it difficult, if not impossible, to gather trustworthy and credible data for the Zimbabwean economy from 2006 to 2009. Utilizing time series data from 1985 to 2021—including the hyperinflationary era from 2005 to 2009—the current study attempts to close these gaps. The study will make use of data estimations taken from the World Development Indicators (WDI) and United Nations Statistics Division (UNSD) databases. Additionally, this study will make use of the Ordinary Least Square method. The method was chosen

because it is straightforward, provides accurate and effective estimates, and performs substantially better in small sample numbers. Last but not least, the analysis will include historical to contemporary time series data for Zimbabwe from 1985 to 2021 to account for all economic cycles experienced by the nation since independence. The dissertation also aims to investigate the relationship between NIK and economic growth in Zimbabwe, considering the impact of trade openness on capital investment decisions and the overall economic performance of the country. 2.4 Conclusion Finding the theoretical underpinnings and links between trade liberalization and economic growth was the main objective of this chapter adding on the effects of investment in capital goods to the GDP Growth. This led to the conclusion that a variety of theories would be useful in explaining the complex web of important connections that characterizes the topic of this study. Some of the theories that are explored include those that explain growth and international trade, such as Solow's growth model and endogenous growth theories. The absolute advantage theory, the Huckster-Ohlin theory of commerce, the mercantilist view of trade, and new trade theories are further theories. We identified a lot of research that acknowledged, based on empirical evidence, a long-term, positive link between trade liberalization and economic growth and others provide evidence of an inverse relationship between these two. The literature has reported a number of conclusions, with some studies demonstrating a poor association between trade liberalization and growth and others failing to establish any genuine connection. The differences in results are attributable to different econometric modelling techniques, the study nations included, variable specifications, and different study time frames. The study's methodology and data sources will be the main topics of the following chapter. CHAPTER 3 METHODOLOGY FRAMEWORKAND DATA SOURCES 3.1 Introduction This study intends to investigate the relationship between trade liberalization and economic growth in Zimbabwe and adding on the efficient of investment on capital goods. This chapter, which is divided into five sections, goes into considerable detail about the procedure. The model is explained in the first section. Following are definitions for the variables and data sources, along with the estimation technique and conclusion. 3.2 Model specification To undertake an econometric analysis investigating the relationship between economic growth and trade liberalization, a growth equation is formulated. As indicated by equation (3.1), trade openness serves as an independent variable while gross domestic product growth (GDP/G) functions as the dependent variable. The following is an explicit specification of the multivariate regression equation: DDN/G = D ($NNDN$, DDD, DVT, INF, IKG, LD) (3.1) Where: Gross Domestic Product Growth= GDP/G ((Exports plus Imports)/GDP)) = OPEN Foreign direct investment =FDI Government Spending =GVT Inflation rate =INF National Investment in Capital Goods = IKG Labor Force =LF. Trade openness leads to increased competition and specialization, which results in higher productivity and greater efficiency in production. Increased competition and specialization lead to lower prices for goods and services, which boosts consumer purchasing power and stimulates demand. Increased demand and productivity lead to increased investment, which in turn leads to further economic growth. Lower trade barriers lead to increased international trade, which in turn leads to greater access to foreign capital, technology, and expertise. Greater access to foreign 27 capital, technology, and expertise leads to increased innovation and the adoption of new technologies, which can drive economic growth. Economic growth is anticipated to be positively influenced by trade openness, which serves as an indicator of trade liberalization. It is expected that trade openness, investment in capital goods, foreign direct investments and the total labor force will have a favourable impact on economic growth. Conversely, government spending and inflation are expected to exert a negative influence. The reason behind the negative expectation for GVT is the prevailing situation in Zimbabwe, where most expenditure are done in social activities which do not contribute to GDP. This implies a limited amount of domestic production, consequently leading to reduced economic growth. The above model can be expressed in a linearized form as: DDN/Gt = $\beta 0$ + $\beta 1 NNDNt$ + $\beta 2 DDDt$ -$\beta 3 DVTt$ - β4INFt + β5IKGt +$\beta 6 LDt$ β7(IKG, OPEN)t + μt . (3.2) Where:

DDN/Gt: Gross domestic product at time t. This is the dependent variable that measures the economic growth of Zimbabwe. $NNDNt$: Trade openness at time t. This is an independent variable that measures the degree of integration of Zimbabwe into the world economy. It can be calculated as the ratio of total trade (exports plus imports) to GDP. $DDDt$: Foreign direct investment inflows at time t. This is an independent variable that measures the amount of capital invested by foreign entities in Zimbabwe. It can be expressed as a percentage of GDP. $DVTt$: Government expenditure at time t. This is an independent variable that measures the size of the public sector in Zimbabwe. It can be expressed as a percentage of GDP. INFt: Inflation rate at time t. This is an independent variable that measures the change in the general price level in Zimbabwe. It can be expressed as a percentage change in the consumer price index. (IKGt: National Investment in Capital Goods at time t refers to the amount of capital investment made by the government, businesses, and individuals in Zimbabwe to purchase physical assets such as machinery, equipment, and infrastructure, which are used in the production of goods and services within the country. This variable is used to measure the level of investment in the country's productive capacity, which is essential for sustainable 28 economic growth. LTFt: Total labour for at time t. This is an independent variable that measures the number of people who are willing and able to work in Zimbabwe. It can be expressed as a percentage per annum. μt: Error term at time t. This captures the random shocks and other factors that are not included in the model. The coefficients $\beta 0$, $\beta 1$, $\beta 2$, $\beta 3$, $\beta 4$, $\beta 5$, $\beta 6$ and $\beta 7$ represent the effects of each independent variable on economic growth. For example, $\beta 1$ shows how a one-unit increase in trade openness affects GDP, holding other variables constant. $\beta 7$ represents the effects of the interaction term (NIKOPEN). Where β's are parameters of the model and μt is the residual term. There is a need to interact variables in an econometric model because it can help capture the complex relationship and interdependencies that exist between different variables. By interacting variables, we can account for the fact that the impact of one variable on the outcome of interest may depend on the level or values of other variables in the model. In the case of our study of trade openness and economic growth model, there may be an interaction effect between trade openness and national investment in capital goods. This means that the effect of trade openness on economic growth may be different when the level of national investment in capital goods is high or low. By including an interaction term in the model, we can accurately estimate the impact of each variable on the outcome of interest, while also considering the moderating effect of other variables in the model. Therefore, interaction terms allow us to better understand the relationships between variables, and can lead to more accurate and robust estimates of the effects of different factors on economic outcomes. If the coefficient of the interaction term is statistically significant, it would imply that the relationship between trade openness and economic growth is influenced by the level of IK. In such a scenario, the effect of trade openness on economic growth is likely to depend on the level of investment in capital goods, and this would be important for policymakers to note when considering measures to promote economic growth. The independent variables of the model include the labor force, government spending, foreign direct investment, investment in capital goods, trade openness (which serves as a proxy for trade liberalization), inflation, and foreign direct investment. The dependent variable, GDP growth, is the measure of interest in the model. These variables have been widely utilized in various studies within the literature, making them well-suited for investigating the relationship between trade openness and economic growth in the context of Zimbabwe. 3.3 Variable descriptions and Data sources The extensive body of empirical research, examined by various scholars such as Coe and Helpman (1995) and Bernstein (1996), provides valuable insights into variable selection, measurement techniques, data sources, and estimation methodologies. This literature plays a significant role in defining the variables and identifying appropriate data sources. In the subsequent discussion, we delve into the selection of independent variables, the sources of data, and the choice of the dependent variable. 3.3.1 Data source The dataset used in this analysis

consists of thirty seven annual time series data points for Zimbabwe, covering the period from 1985 to 2021. This duration is deemed sufficient to capture any existing relationship among the variables under investigation. To examine the connection between trade liberalization and economic growth, the study will employ the Ordinary Least Square analysis, utilizing certain variables identified by Renelt and Levine (1992), Levine and Zervos (1993), and Gwaendepi et al. (2014). Additionally, the availability of dependable secondary data for the Zimbabwean economy played a significant role in selecting these variables. Most of the data used in this study is readily available and requires minimal explanation. The data sources include prominent databases such as the International Labour Organization (ILO), World Development Indicators (WDI), World Integrated Trade Solutions (WITS), Zimbabwe National Statistical Agency (ZIMSTAT), and United Nations Statistics Division (UNSD). These are the variables that were used in this study and their sources, as presented in Table 3.1. Table 3.1: Variables and data sources Variable Variable Measurement Sources Gross domestic Product Growth, GDP/G Total Gross Domestic product Growth (% annual growth) UNSD/ZIMSTAT Trade Openness, OPEN Total Imports and Exports (in $US as a % of GDP). The proxy for trade Liberalization. WITS/ UNSD Foreign direct investment, FDI Total FDI (in $US measured as a % of GDP) WDI/ ZIMSTAT Government expenditure, GVT Total Government expenditure (in $US measured as a % of GDP) UNSD Labour force, LF Total number of the employed plus unemployed UNSD/ZIMSTAT Investment in Capital Goods, IKG Total investment measured as a percentage of total investment (% of total investments) WDI/ IMF Inflation Rate, INF Inflation rate derived from the CPI (2010) prices UNSD The acronyms for the United Nations Statistics Division are World Development Indicators (WDI), International Labour Organization (ILO), Zimbabwe National Statistical Agency (ZIMSTAT), and World Integrated Trade Solutions (WITS). The World Bank and the United Nations (UN) prioritize the utmost quality in their data work and products, adhering to globally recognized standards, processes, sources, definitions, and classifications. They utilize frameworks such as the General Data Dissemination System (GDDS) and the Data Quality Assessment Framework (DQAF) to evaluate national statistical systems and encourage nations to enhance the quality of their official data. These frameworks provide a comprehensive perspective on data quality, taking into account the interconnectedness and trade-offs among various quality components, while also addressing the diverse needs of different data types and users (World Bank, 2017). 3.4 Variable descriptions. The analysis of economic growth and trade considers multiple explanatory variables. Based on previous empirical studies and the availability of reliable data for the study's time period, relevant factors were selected. The aim was to include variables that have shown significance in previous research and are pertinent to Zimbabwe, while avoiding the inclusion of irrelevant variables. This section provides a description of each variable and explains how it is measured. The change in the value of all goods and services generated within an economy during a certain time period is represented by the Gross Domestic product growth (GDP/G) (Samuelson & Nordhaus, 2010:370). In this study, GDP Growth is reported in constant prices to reflect inflation-adjusted GDP. Constant price estimates of GDP/G can be established by measuring the values of the products and services produced in a given year in comparison to a base period. The analysis makes use of GDP Growth data from the nation's national accounts, including percentage values and growth rates. Trade openness, widely recognized to contribute to faster economic growth, refers to the degree of openness in a country's trading system. A more open trading system creates a conducive environment for investment and supports economic expansion. It also expands market access, exposing the economy to a wider range of concepts and technologies, thereby capturing external technical influences on economic growth (Winters, 2004). The impact of trade openness on economic growth is an empirical question, as highlighted by Balassa (1982) and Edwards (1997). Various measures of openness have been employed in previous research. In this study, trade openness is measured as the ratio of exports plus imports to GDP, serving as an indicator

of the trade liberalization index. It is expected that trade openness will exhibit a positive relationship with economic growth. Foreign direct investment (FDI), broadly defined by Danziger (1997), refers to investments made by foreign investors to acquire a lasting stake in businesses operating outside their home country. FDI flows consist of both financial and inward flows, both of which contribute to increased investment in the host economy (OECD, 2008). FDI can be measured as a stock or a flow variable. Sala-i-Martin et al. (2004) highlight that FDI stocks display less variability over time compared to FDI flows. However, for this study, only FDI inflows as a percentage of GDP are readily available. Given that FDI establishes stable and enduring connections between economies, it is expected to have a positive impact on economic growth. According to the Keynesian model, increased government spending, particularly on infrastructure, is believed to stimulate economic growth. However, neo-classical growth models, as argued by Barro (1990), Abdullah (2000), and Folster & Henrekson (2001), suggest that government fiscal policy has no impact on national output expansion. This has 32 led to a disagreement among policymakers regarding whether government expansion promotes or hinders economic progress. Proponents of increased government spending, such as Nurudeen & Usman (2010), argue that government programs provide crucial public goods, including infrastructure and education . On the other hand, advocates for smaller government contend that higher government spending diverts resources away from the productive sector, resulting in less efficient resource allocation (Samuelson & Nordhaus, 2010:310–312). In this study, total government spending as a proportion of GDP is used, and a negative relationship between government spending and economic growth is predicted. The labor force, also referred to as the currently active population, comprises all individuals who meet the criteria for being employed or unemployed (OECD, 2017). In Zimbabwe, the labor force consists of both employed and jobless individuals. As the labor supply increases, economic growth is expected to rise. Therefore, there is a positive correlation anticipated between economic growth and the labor force. Numerous examples in the literature demonstrate how inflation hampers growth (Fisher, 1993). Inflation disrupts efficient resource allocation by distorting the signaling function of relative price changes and introducing uncertainty. Thus, Temple (2000) justifies its inclusion as an explanatory component in the growth equation. Inflation serves as an indicator of fiscal and monetary restrictions, as well as macroeconomic instability. Increasing inflation rates are projected to have a detrimental effect on economic growth. The variable inflation, reported as a yearly percentage, is derived from the consumer price index (CPI). Investment in capital goods refers to the direct expenditure made by firms, businesses, and governments on capital, which are goods that are used to produce goods and services, rather than directly providing utility to consumers by Danziger (1997). Capital goods include machinery, equipment, buildings, and other physical assets used to produce goods and services. Investment in capital goods can come from a variety of sources, including the public sector, private businesses, and foreign direct investment (FDI). Investment in capital goods is crucial for improving production efficiency, enhancing productivity, and promoting economic growth. A high level of investment in capital goods can indicate confidence in the future growth prospects of an economy as businesses and governments seek to expand their production capacity. 3.5 Estimation Methodology To determine the impact of trade openness on economic growth, the study will employ the Ordinary Least Squares (OLS) method, which has been successfully used in similar studies. The OLS model accounts for an error term with a sum of zero to ensure that the positives and negatives cancel each other out, and the parameters are estimated through this model. Additionally, the model shows that there is no multicollinearity or covariance between the error term and the dependent variable, ensuring a reliable estimation. The model also assumes that the error term $\mu=\Sigma=0$ follows a normal distribution where the variance is zero. Furthermore, the parameters in the model are linear, while the variables are non-linear. Overall, the OLS method will provide a robust approach to estimate the impact of trade openness on economic growth that adheres to these various assumptions.

3.5.1 Tests for stationary The time series data must be stationary in order to estimate time series using ordinary least squares. If the mean, variance, and auto-covariance of a time series do not change over time, the time series is said to be stationary (Gujarati, 2003:812– 816). Therefore, in order to attain stationarity, every stochastic time-series with changing means (μt) and variances ($\sigma t2$) must be differentiated. The stochastic process is said to be integrated of order d, denoted as I (d), if a time series is divided by d and the outcome is stationary. Because the stochastic time-series is stationary after being differenced, the unit root is also known as a difference-stationary model (Wei, 2006). 3.5 1.1 Augmented Dickey Fuller test The ADF test, also known as the Augmented Dickey-Fuller test, is utilized to assess whether a time series contains a unit root. It addresses situations where the error terms may be correlated with prior terms by incorporating lagged difference values of the dependent variable in the regression (Gujarati, 2003: 817-818). The ADF unit root test for non-stationarity involves regressing the current value of the variable (Yt) on its lagged value (Yt-1) and examining whether the estimated coefficient is statistically different from 1 Dickey and Fuller developed the Augmented Dickey-Fuller (ADF) test as an improvement over the DF test to tackle the problem of serial correlation (Wei, 2006). In the ADF test, the regression equation is modified by including lags of the first difference of the variable in order to ensure that the error term is white noise. 3.5.1.2 Phillips Perron test The Phillips-Perron (PP) test employs non-parametric statistical techniques that do not include lag difference terms to handle the problem of serial correlation in the errors. Instead, the PP test utilizes a correction factor that calculates the long-run discrepancy of the error process, incorporating a modified version of the Newey- West formula to address the issue of serial correlation among the error terms. Unlike the ADF test, the PP test does not require the disturbance term to be serially uncorrelated or homogenous in order to yield valid results. Similar to the ADF test, the Phillips-Perron (PP) test examines whether a time series contains a unit root. The test equation is stated as: $\Delta Yt + \beta 0 + \beta 1t + \beta 2Yt-1 + \varepsilon t$ ~1(0) (3.2) 3.6 Diagnostic tests Since the ordinary least squares test seeks to identify the best linear unbiased estimator (BLUE), diagnostic tests must be carried out. By using tests for serial correlation, heteroscedasticity, multi collinearity, and normality in the residuals, the tests will guarantee that the results are statistically valid. 3.6.1 Normality test There are multiple approaches to assessing the normality of data, which can be categorized into graphical and statistical methods. Common statistical tests for normality include the Anderson-Darling, Jarque-Bera, Shapiro-Wilks, and Kolmogorov-Smirnov tests. Graphical methods include examining histograms, normal probability plots of residuals, and cumulative frequency plots. In this study, the Graphical methods include examining histograms is used to assess normality. If the histogram resembles a bell curve and there are no significant deviations from normality, we can conclude that the data is approximately normally distributed. This is a desirable outcome as it indicates that certain statistical methods, such as parametric tests, can be used on the data. 3.6.2 Heteroscedasticity test Heteroscedasticity occurs when a series of random variables exhibits varying variances, leading to inconsistent variance during regression analysis. To assess heteroscedasticity, the Breusch-Pagan test is commonly employed. This test utilizes the F-statistic to determine the significance of the regression. If the computed F- statistic exceeds the critical value of 0, we accept the null hypothesis, indicating the presence of heteroscedasticity. The following outlines the steps involved in conducting the test: $D0$: There is no heteroscedasticity. $D1$: There is heteroscedasticity. 3.6.3 Serial correlation Serial correlation refers to the presence of correlation among error terms in a time- arranged series. Wooldridge (2009) suggests that it can arise due to various factors such as incorrect functional forms, autocorrelations, data manipulation, data transformation, and non-stationarity of the data. Autocorrelation can have multiple causes, including omitted explanatory variables, incorrect model specifications, interpolation in statistical observations, and inaccurate definition of the true error term. To detect and address the issue of serial correlation, various tests can be employed, including the Durbin-Watson (DW) test and the Breush-Godfrey

(BG) test. In this study, we hypothesize the absence of first-order autocorrelation in the disturbance term and choose to test it using the BG test. Unlike the DW test, the BG test overcomes its limitations and provides definitive results, particularly when a lagged dependent variable is involved. Additionally, the BG test can account for higher- order autocorrelation if present, making it a suitable choice for our analysis. 3.6.4 Multicollinearity Test Multicollinearity is a test used to test for correlation between independent variable. If the coefficient take the value greater than 0.8 we can conclude that there is the presence of multicollinearity and hence those variables must be left out. Multicollinearity may leads to an insignificant t-statistics and F-statistics. 3.7 Conclusion The ADF and PP unit root tests is going to be employed to evaluate the stationarity of the variables under study. The main objective of this chapter was to establish the economic growth model as well as the independent variables. Finally, the diagnostic tests that should be used are discussed, including serial correlation, multicollinearity and heteroscedasticity. The stated models are examined in the next chapter. CHAPTER 4 4.1 Introduction In this chapter, the study presents its findings from the empirical analysis of the trade model developed in the previous chapter. The study uses an Ordinary Least Squares (OLS) approach to quantitatively evaluate the dynamic effects of trade liberalization on Zimbabwe's economic growth. The chapter begins with a descriptive study of the variables that are used in the trade model. The subsequent section provides a summary of the preliminary findings. The empirical results are then presented using F-statistics and p-values to provide insights into the significance of the findings. 4.2 Descriptive Analysis The descriptive analysis was conducted to examine the variables used in the study. The analysis includes gross domestic product growth (GDP/G), trade openness (OPEN), foreign direct investment (FDI), investment in capital goods (IKG), government spending (GVT), inflation (INF), labour force (LF) and a generated variable IKGOPEN (interaction of OPEN and IKG). The study uses annual data from 1985 to 2021. Table 4.1 presents the means, medians, maximum and minimum values, standard deviations, skewness, and kurtosis of the variables, providing a comprehensive overview of the data. The average trade openness through time is 65.34317 ranging from a minimum of 44.10035 to a maximum of 109.5216. The average rate of economic growth (GDP/G) is 1.703911; the maximum rate is 21.45206; and the minimum rate is - 17.66895. The average of the variable investment on capital goods is 13.92967 with a maximum value of 23.72906 and a minimum value of 1.525177. The variables GDP/G and FDI have kurtosis values above 3, indicating a long- or slim-tailed distribution, while other variables have values below 3 indicating that the observations have a fat or short-tailed distribution. Table 4.1: Descriptive Statistics GDP_G OPEN FDI GVT INF IKG TLF IKGOPEN Mean 1.703911 65.34317 0.602573 16.36271 12.32167 13.92967 3.403767 881.3918 Median 2.023650 63.71249 0.120000 17.91626 12.79544 14.14831 0.016956 793.4182 Maximum 21.45206 109.5216 6.940000 27.48708 23.67628 23.72906 13.61145 1836.707 Minimum -17.66895 44.10035 -0.453000 2.047121 2.234169 1.525177 0.000000 115.9801 Std. Dev. 8.304625 15.72515 1.270003 5.897074 5.653902 6.188319 4.889503 436.8627 Skewness -0.152978 0.541938 3.540575 -0.777358 0.114393 -0.301948 0.888706 0.460493 Kurtosis 3.324617 2.879878 17.90711 3.140643 1.969229 2.111572 2.060146 2.459529 Jarque- Bera 0.306769 1.833378 419.8952 3.756925 1.718700 1.779074 6.232216 1.757998 Probabilit y 0.857800 0.399841 0.000000 0.152825 0.423437 0.410846 0.044329 0.415198 Sum 63.04470 2417.697 22.29521 605.4204 455.9017 515.3977 125.9394 32611.50 Sum Sq. Dev. 2482.805 8902.088 58.06468 1251.917 1150.798 1378.630 860.6605 6870565. Observati ons 37 37 37 37 37 37 37 37 Table 4.2 Normality Results 12 Series: Residuals 10 Sample 1985 2021 Observations 37 8 Mean 3.20e-15 Median -0.592861 Maximum 10.23783 6 Minimum -8.290187 Std. Dev. 4.144306 4 Skewness 0.169679 Kurtosis 2.774558 2 Jarque-Bera 0.255898 Probability 0.879898 0 -10.0 -7.5 -5.0 -2.5 0.0 2.5 5.0 7.5 10.0 12.5 The above diagram provide an evidence of normal distribution since the bars are bell sharped. 4.3 Diagnostic Test 4.3.1 Multicollinearity test According to the

pairwise matrix results in Table 4.2, Gujarati's (2003:341) "classic" method offers minimal evidence of multicollinearity. According to Gujarati (2003:341), the absence of strong multicollinearity is shown by the presence of low pairwise coefficients that are not greater than 0.8. Therefore, as seen in Table 4.2, there is no multicollinearity issue. Table 4.3: Multicollinearity GDP_G OPEN FDI GVT INF IKG TLF IKGOPEN GDP_G 1.000000 -0.185301 -0.463367 0.216214 -0.276898 0.483383 0.461289 0.448931 OPEN -0.185301 1.000000 0.381057 -0.393152 0.260577 -0.304353 -0.077254 0.205329 FDI -0.463367 0.381057 1.000000 -0.634301 0.410102 -0.486204 0.105732 -0.385620 GVT 0.216214 -0.393152 -0.634301 1.000000 -0.224280 0.327625 -0.084808 0.175116 INF -0.276898 0.260577 0.410102 -0.224280 1.000000 -0.589259 0.424735 -0.447176 IKG 0.483383 -0.304353 -0.486204 0.327625 -0.589259 1.000000 -0.147738 0.644890 TLF 0.461289 -0.077254 0.105732 -0.084808 0.424735 -0.147738 1.000000 -0.075530 IKGOPEN 0.448931 0.205329 -0.385620 0.175116 -0.447176 0.644890 -0.075530 1.000000 4.3.2 Autocorrelation Autocorrelation is tested using Durbin Watson statistics. Gujarati (2004) asserts that the Durbin Watson statistics utilized should be in the range of 2, which indicates the absence of autocorrelation. The Durbin Watson in this study is 2.243874, which is in the range, indicating that there was no autocorrelation in the data. Due to the shortcoming of Durbin Watson (area of indecision), a Breush-Godfrey Serial Correlation LM test is also performed to check for autocorrelation. Since we were unable to rule out the null hypothesis of no autocorrelation, the data showed that there is no autocorrelation. Table 4.4 LM Test Breush-Godfrey serial correlation LM Test F-statistic 0.544769 Prob. F(2,27) 0.5862 Obs*R-squared 1.435157 Prob. Chi-Square(2) 0.4879 Table 4. 5 Heteroscedasticity F-statistic 0.732791 Prob. F(7,29) 0.6459 Obs*R-squared 5.560959 Prob. Chi-Square(7) 0.5918 Scaled explained SS 3.031115 Prob. Chi-Square(7) 0.8821 In the above Table, F-statistics give evidence of no heteroscedasticity. In addition, the p- value is greater than 0.1 which also means that our model is not suffering from heteroscedasticity. 4.3.3 Coefficient of determination (R-Squared) R-squared calculates how well independent variables account for the dependent variable. R-Squared for this study is 0.750963, indicating that the model is effective at illuminating the variation between the dependent variable and the independent variables. 4.4 Regression results Variable Coefficient Std. Error t-Statistic Prob. C -44.81439 14.13616 -3.170196 0.0036 OPEN 2.576382 0.195560 3.441836 0.0018 FDI 4.194390 1.034928 4.052834 0.0003 GVT -0.080662 0.174361 -0.462613 0.6471 INF -0.536531 0.195387 -2.745997 0.0103 IKG 2.921528 0.809724 3.608052 0.0011 TLF 1.613303 0.233107 6.920874 0.0000 IKGOPEN 0.370659 0.101856 3.176459 0.0035 R-squared 0.750963 Adjusted R-squared 0.690851 Durbin-Watson stat 2.243874 4.5 Interpretation of the results F-statistic Prob (F-stat) 12.49266 0.000000 4.5.1 Trade Openness (OPEN, IKG and IKGOPEN) We reject the null hypothesis that the coefficient of this variable (? ₂) is not statistically different from zero since the variable OPEN has a probability value of 0.0018, which indicates that it is statistically significant at the 1% level of significance. This indicates that the variable OPEN is more crucial in interpreting changes in GDP/G. The coefficient for the variable OPEN in the table above is 41 2.576382, which indicates that there is a positive relationship between trade openness and economic growth. Also, the variable IKG and the interacted variable has the probabilities of 0.0011and 0.0035 respectively, which also shows that these variables are statistically significance at 1% level. The coefficients of these two variables are 2.921528 and 0.37659 respectively which also indicates a positive relationship towards GDP Growth. Foreign direct investment and total labour force also have positive signs indicating positive relationship towards GDP growth while inflation and government expenditure has a negative signs indicating inverse relationship of these variables to growth. The reason of the inverse relationship is the expenditure done by the government are mainly focused on social activities which adds nothing to GDP Growth in Zimbabwe. 4.6 Conclusion This chapter discussed the study's empirical results and commented on the econometric estimation that was done. The estimated results were derived by estimating the links between economic growth, trade

liberalization, and other variables using the Ordinary Least Squares (OLS). The variables, INF and GVT were found to have a negative relationship that was significant. Trade Openness, Foreign direct investment, investment in capital goods, Total Labour Force IKGOPEN, were discovered to be important when long term coefficients were taken into account. The analysis is expanded upon in the following chapter in order to draw conclusions, suggest economic measures, and identify topics for additional study. This chapter confirms the findings. CHAPTER V CONCLUSION AND POLICY IMPLICATIONS 5.1 Introduction The study's summary, policy implications, and suggestions are presented in this ch apter. The report offers ideas for additional research as well. 5.2 Summary Using time series data from 1985 to 2021, this study investigated whether there was a positive correlation between trade liberalization and economic growth in Zimbabwe and investment in capital goods is essential when assessing the relationship between these two variables. The study used the labor force (TLF), government spending (GVT), Inflation (INF), investment in capital goods (IKG) and foreign direct investment (FDI) as control variables to examine the connection between trade liberalization and economic growth in the Zimbabwean economy. The results of the regression, which used the Ordinary Least Squares methodology, show that there is a positive association between these two variables. The outcome is consistent with other research, including that of Adhikary (2011), who established the research in Bangladesh from 1986 to 2008 and find a long-term link between GDP growth rates and openness The results show that trade liberalization has a positive coefficient of 2.576382 and is the variable that promote economic growth in Zimbabwe. As an economy like Zimbabwe opens up, local output rises and exports begin to outpace imports. This implies that economic growth rises as a nation becomes more open to free trade. Additionally, the findings demonstrate a negative correlation between Zimbabwe's government expenditure and inflation rate towards economic development, with a negative coefficients of -0.080662 and -0.536531respectively. Thus, a rise in the government expenditure and inflation as a whole slows down economic growth and vice versa. FDI, TLF, IKG and IKGOPEN with positive coefficients of 4.194390, 1.613303, 2.921528 and 0.37659 respectively, have a favorable effect on economic 43 growth in Zimbabwe. According to the study's findings, it is difficult for policymakers and government negotiators in Zimbabwe to create policies that encourage exports through measures that support local manufacturing, such as Import Substitution Firms (ISF), and to do so, encourage more exports than imports. 5.3 Policy Implications. The research's findings served as the foundation for the discussion of this study's policy implications. The effects of trade liberalization on Zimbabwe's economic growth have been highlighted, and the government should support and strengthen policies like import substitution enterprises to raise local production and increase exports while reducing imports. The nation will benefit from foreign trade as a result. If the scenario is similar to Zimbabwe's, where imports outnumber exports, then international commerce may restrict markets for both services and goods. In a similar spirit, the government should promote an advantageous business climate in order to attract FDI in order to ensure sustainable economic growth. This is achieved through controlling important problems like inflation, which have a significant impact on boosting investment and, eventually, economic growth. As a result, this study draws the conclusion that national development policies for Zimbabwe must include consideration of international trade policy. They must therefore be connected to monetary policy, tax policy, industrial policy, foreign policy, and education policy. The development of human capital, knowledge spillovers, technical advancement, and foreign direct investment (FDI) all play important roles in fostering international trade and economic growth in emerging nations like Zimbabwe. 5.4 Recommendations ? The researcher recommends the policies makers to use Import Substitution Firms to boost exports and reduce imports. ? The researcher also recommends the policy makers to use fiscal policy by increasing its expenditure through subsides and this will boost GDP. ? Policy makers is also recommended by the researcher to use policies that 44 attract investors from the countries to boost FDI. 5.5 Areas of Further Research

There is a need to examine other variables that affect economic growth other than those use in this study. REFERENCES Abbas, S. (2014). Trade Liberalisation and its Economic Impact on Developing and Least Developed Countries. Journal of International Trade Law and Policy, 13(3), 215-221. Abdullah, H.A. (2000). The Relationship between Government Expenditure and Economic Growth in Saudi Arabia. Journal of Administrative Science, 12(2), 173- 191. Adhikary, B. K. (2011). Foreign Direct Investment, Trade Openness, Capital Formation and Economic Growth in Bangladesh: A Linkage Analysis. International Journal of Business and Management, 6(1), 16-28. Afonso, O. (2001). The Impact of International Trade on Economic Growth. Working Paper. Faculty of Economics, University of Porto, Portugal, Number 106. Ali, W., & Abdullah, A. (2015). The Impact of Trade Openness on the Economic Growth of Pakistan: 1980-2010. Global Business and Management Journal, 7(2), 120-129. Anderson, J. E., & Neary, J. P. (1994). Measuring the Restrictiveness of Trade Policy. The World Bank Economic Review, 8(2), 151-169. Babatunde, A. (2011). Trade Openness, Infrastructure, FDI and Growth in Sub- Saharan African Countries. Journal of Management Policy and Practice, 12(7), 27- 36. Bacchetta, M., & Janse, M. (2003). Adjusting to Trade Liberalization the Role of Policy, Institutions and WTO Disciplines. Economic Research Division, WTO Publications, April 2003, Geneva. Bahmani-Oskooee, M., & Brooks, T. J. (1999). Bilateral J-curve between U.S and her Trading Partners, Weltwirtschaftliches Archive, 135,156 – 165. Balassa, B. (1982). Development Strategies in Semi-Industrial Countries, Oxford University Press, Oxford. Barro, R. (1990). Government Spending in a Simple Model of Endogenous Growth. Journal of Political Economy, 98(5), 103-125. Bernstein, J. I. (1996). International R&D Spillovers between Industries in Canada and the United States, Social Rates of Return and Productivity Growth. The Canadian Journal of Economics, 29(1), 463-467. Blaug, M. (1978). Economic Theory in Retrospect. Vikas Publishing House, New Delhi. Chen, H. (2009). A Literature Review on the Relationship between Foreign Trade and Economic Growth. International Journal of Economics and Finance, 1(1), 127- 131. Chen, P., & Gupta, R. (2006). An Investigation of Openness and Economic Growth Using Panel Estimation. University of Pretoria Working Paper, Number 22:2006. Chude, N. P., & Chude, D. I. (2013). Impact of Government Expenditure on Economic Growth in Nigeria. International Journal of Business and Management Review, 1(4), 64-71. Coe, D. T., & Helpman, E. (1995). International R&D Spillovers. European Economic Review, 39(5), 859-887. Danziger, E. (1997). Danziger's Investment Promotion Manual London. FDJ International. Davies, R., & Rattso, J. (1999). Zimbabwe Economic Adjustment, Income Distribution and Trade Facilitation. Research Gate Publication, March 2000. Davis, D. R. (1991). Mutual Dynamic Gains from Trade Due to Specialization in Learning. 47 Mimeo - Development, 18(6), 769-783. Dickey, D. A., & Fuller, W. A. (1981). Likelihood Ratio Statistics for Autoregressive Time Series with a Unit Root. Econometrica, 49(4), 1057-1072. Dollar, D. (1992). Outward-Oriented Developing Countries Really Do Grow More Rapidly: Evidence from 95 LDCs 1976-1985. Economic Development and Cultural Change, Vol 40, April. Dritsakis, N., & Stamatiou, P. (2016). Trade Openness and Economic Growth. A panel Cointegration and Causality Analysis for the Newest EU Countries. The Romanian Economic Journal, XV111 (59), 45-60. Edwards, S. (1998). Openness, Productivity and Growth: What Do We Really Know? Economic Journal, 108, 383-398. Engle R.F., & Granger, C. W. J. (1987). Cointegration and Error Correction: Representation, Estimation and Testing. Econometrica, 55, 251−276. Engle, R. F. (1982). Autoregressive Conditional Heteroscedasticity with Estimates of the Variance of United Kingdom Inflation. Econometrica, 50, 987−1007. Erdogdu, E. (2007). Electricity Demand Analysis Using Cointegration ARIMA Modelling A Case Study of Turkey. Energy Policy, 35, 1129−1146. Feenstra, R. C. (2004). Advanced International Trade: Theory and Evidence. Princeton University Press, New Jersey. Fisher, S. (1993). The Role of Macroeconomic Factors in Growth. Journal of Monetary Economics, 32(3), 485-512. Folster, S., & Henrekson, M. (2001). Growth Effects of Government Expenditure and Taxation in Rich Countries. European Economic Review, 45(8), 1501-1520. Gertz, D. (2008). Kenya's Trade Liberalization of the 1980s and 1990s:

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Dependent Variable: GDP_G Method: Least Squares Date: 06/09/23 Time: 01:52 Sample: 1985 2021 Included observations: 37 Variable Coefficient Std. Error t-Statistic Prob. C OPEN FDI GVT INF IKG TLF IKGOPEN -44.81439 2.576382 4.194390 -0.080662 -0.536531 2.921528 1.613303 0.370659 14.13616 0.195560 1.034928 0.174361 0.195387 0.809724 0.233107 0.011856 -3.170196 3.441836 4.052834 -0.462613 -2.745997 3.608052 6.920874 3.176459 0.0036 0.0018 0.0003 0.6471 0.0103 0.0011 0.0000 0.0035 R-squared Adjusted R-squared S.E. of regression Sum squared resid Log likelihood F-statistic Prob(F-statistic) 0.750963 0.690851 4.617470 618.3098 -104.5981 12.49266 0.000000 Mean dependent var S.D. dependent var Akaike info criterion Schwarz criterion Hannan-Quinn criter. Durbin-Watson stat 1.703911 8.304625 6.086381 6.434688 6.209176 2.243874 APPENDIX 2: DESCRIPTIVE ANALYSIS GDP_G OPEN FDI GVT INF IKG TLF IKGOPEN Mean 1.703911 65.34317 0.602573 16.36271 12.32167 13.92967 3.403767 881.3918 Median 2.023650 63.71249 0.120000 17.91626 12.79544 14.14831 0.016956 793.4182 Maximum 21.45206 109.5216 6.940000 27.48708 23.67628 23.72906 13.61145 1836.707 Minimum -17.66895 44.10035 -0.453000 2.047121 2.234169 1.525177 0.000000 115.9801 Std. Dev. 8.304625 15.72515 1.270003 5.897074 5.653902 6.188319 4.889503 436.8627 Skewness -0.152978 0.541938 3.540575 -0.777358 0.114393 -0.301948 0.888706 0.460493 Kurtosis 3.324617 2.879878 17.90711 3.140643 1.969229 2.111572 2.060146 2.459529 Jarque-Bera 0.306769 1.833378 419.8952 3.756925 1.718700 1.779074 6.232216 1.757998 Probability 0.857800 0.399841 0.000000 0.152825 0.423437 0.410846 0.044329 0.415198 Sum 63.04470 2417.697 22.29521 605.4204 455.9017 515.3977 125.9394 32611.50 Sum Sq. Dev. 2482.805 8902.088 58.06468 1251.917 1150.798 1378.630 860.6605 6870565. Observations 37 37 37 37 37 37 37 37 APPENDIX 3: MULTICOLLINEARITY TEST GDP_G OPEN FDI GVT INF IKG TLF IKGOPEN GDP_G 1.000000 -0.185301 -0.463367 0.216214 -0.276898 0.483383 0.461289 0.448931 OPEN -0.185301 1.000000 0.381057 -0.393152 0.260577 -0.304353 -0.077254 0.205329 FDI -0.463367 0.381057 1.000000 -0.634301 0.410102 -0.486204 0.105732 -0.385620 GVT 0.216214 -0.393152 -0.634301 1.000000 -0.224280 0.327625 -0.084808 0.175116 INF -0.276898 0.260577 0.410102 -0.224280 1.000000 -0.589259 0.424735 -0.447176 IKG 0.483383 -0.304353 -0.486204 0.327625 -0.589259 1.000000 -0.147738 0.644890 TLF 0.461289 -0.077254 0.105732 -0.084808 0.424735 -0.147738 1.000000 -0.075530 IKGOPEN 0.448931 0.205329 -0.385620 0.175116 -0.447176 0.644890 -0.075530 1.000000 APPENDIX 4 Serial Correlation LM Test: Breusch-Godfrey Serial Correlation LM Test: F-statistic Obs*R-squared 0.544769 Prob. F(2,27) 1.435157 Prob. Chi-Square(2) 0.5862 0.4879 Test Equation: Dependent Variable: RESID Method: Least Squares Date: 06/09/23 Time: 02:52 Sample: 1985 2021 Included observations: 37 Presample missing value lagged residuals set to zero. Variable Coefficient Std. Error t-Statistic Prob. C OPEN FDI GVT INF IKG TLF IKGOPEN RESID(-1) RESID(-2) 0.098773 0.014838 -0.047923 -0.028573 -0.053078 0.014934 0.023067 0.000245 -0.180363 -0.138356 14.36566 0.199655 1.061272 0.179385 0.210301 0.823116 0.239010 0.012075 0.208461 0.199994 0.006876 0.074318 -0.045156 -0.159285 -0.252389 0.018143 0.096511 0.020261 -0.865210 -0.691800 0.9946 0.9413 0.9643 0.8746 0.8027 0.9857 0.9238 0.9840 0.3945 0.4950 R-squared Adjusted R-squared S.E. of regression Sum squared resid Log likelihood F-statistic Prob(F-statistic) 0.038788 -0.281616 4.691706 594.3268 -103.8662 0.121060 0.998813 Mean dependent var S.D. dependent var Akaike info criterion Schwarz criterion Hannan-Quinn criter. Durbin-Watson stat 3.20E-15 4.144306 6.154929 6.590312 6.308422 2.012689 APPENDIX 5 Heteroskedasticity Test Heteroskedasticity Test: Breusch-Pagan-Godfrey F-statistic Obs*R-squared Scaled explained SS 0.732791 5.560959 3.031115 Prob. F(7,29) Prob. Chi-Square(7) Prob. Chi-Square(7) 0.6459 0.5918 0.8821 Test Equation: Dependent Variable: RESID^2 Method: Least Squares Date: 06/09/23 Time: 02:54 Sample: 1985 2021 Included observations: 37 Variable Coefficient Std. Error t-Statistic Prob. C OPEN FDI GVT INF IKG TLF IKGOPEN 83.30480 -1.392481 3.373575 -0.107357 1.406215 -5.075037

-0.826816 0.091106 70.95982 0.981658 5.195066 0.875249 0.980789 4.064605 1.170135 0.059512 1.173971 -1.418500 0.649381 -0.122659 1.433758 -1.248593 -0.706599 1.530890 0.2500 0.1667 0.5212 0.9032 0.1623 0.2218 0.4855 0.1366 R-squared Adjusted R-squared S.E. of regression Sum squared resid Log likelihood F-statistic Prob(F-statistic) 0.150296 -0.054805 23.17849 15580.03 -164.2930 0.732791 0.645921 Mean dependent var S.D. dependent var Akaike info criterion Schwarz criterion Hannan-Quinn criter. Durbin-Watson stat 16.71107 22.56831 9.313137 9.661443 9.435931 2.195529 APPENDIX 6: Normality test 12 10 Series: Residuals Sample 1985 2021 Observations 37 8 6 4 Mean Median Maximum Minimum Std. Dev. Skewness Kurtosis 3.20e-15 -0.592861 10.23783 -8.290187 4.144306 0.169679 2.774558 2 Jarque-Bera Probability 0.255898 0.879898 -10.0 -7.5 -5.0 -2.5 0.0 2.5 5.0 7.5 10.0 12.5 0 1 2 5 6 7 8 9 10 16 17 18 19 20 21 22 23 24 25 26 29 30 31 33 34 35 36 37 38 39 40 42 45 46 48 49 50 53 54 55 56 57 58 59 60