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EFFECTS OF TRADE LIBERALISATION ON ECONOMIC GROWTH – THE CASE OF BOTSWANA

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ADDIS ABABA, ETHIOPIA

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BY

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DECLARATION

I, the undersigned certify that the work presented in this thesis, is my original work, prepared under the supervision and guidance of Professor Wondimagegne Chekol. The sources of the materials used in this thesis are duly acknowledged in the text. I further confirm this thesis has not been submitted, either in whole or in part, for a degree at this or any other University.

I acknowledge that I have read and understood St Mary's University rules, requirements, procedures and policy relating to my higher degree research award and to my thesis. I certify that I have complied with the rules, requirements, procedures and policy of the University.

Print Name: ……

Signature……

Date…….

ENDORSEMENT

This Thesis has been thoroughly advised by me, fulfils the requirement and hence suggested to St. Mary's University, School of Graduate Studies for online examination with my approval as a university advisor.

Professor Wondimagegne Chekol ----------

Advisor Signature

St. Mary's University, Addis Ababa July 2020

APPROVAL SHEET

As members of the Board of examining of the final MA thesis open defence, we certify that we have read and evaluated the thesis prepared by Mr Sethunyiwe Tachimbele OITSILE under the title "Effects of Trade Liberalisation on Economic Growth – The Case of BOTSWANA", we recommend that this thesis be accepted as satisfying the thesis requirement for the Degree of Master of Arts in Development Economics

Professor Wondimagegne Chekol

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External Examiner Signature

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Finally, as big an achievement as this may appear now, I am certain that this is only a stepping stone to something much bigger in the next two years.

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ACRONYMS AND ABBREVIATIONS

AfDB	African Development Bank
ADF	Augmented Dickey Fuller
AfCTA	African Union Continental Free Trade Area
ARDL	Autoregressive Distributed Lag
BENELUX	Belgium, the Netherlands and Luxemburg
BNDP 11	Botswana National Development Plan Eleven
CET	Common External Tariff
CLRM	Classical Linear Regression Model
COMESA	Common Market for Eastern and Southern Africa
EAC	Economic Community of East Africa
ECCAS	Economic Community of Central African States
ECM	Error Correction Model
ECOWAS	Economic Community of West African States
ECT	Error Correction Term
EU	European Union
FDI	Real Foreign Direct Investment
GFC	Global Financial Crisis
GDP	Gross Domestic Product
H-O theory	The Heckscher Ohlin theory
IGAD	Intergovernmental Authority on Development
IMF	International Monetary Fund
ISI	Import Substituting Industrialisation
MERCOSUR	Southern Common Market

NAFTA	North American Free Trade Agreement
OLS	Ordinary Least Square technique
RECs	Regional Economic Communities
SACU	Southern African Customs Union
SEN-CED	Community of Sahel-Saharan States
SBIC	Schwarz Bayesian Information Criteria (SBIC).
UMA	Arab Maghreb Union
WB	World Bank
WDI	World Bank Development Indicators
WTO	World Trade Organisation
WW II	World War Two
X	Real exports growth
T	Trade openness

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ABSTRACT

Trade liberalisation is often viewed as a catalyst for economic growth in developing and transition economies. In order to verify this hypothesis, this study empirically investigated the effect of trade liberalisation on economic growth in Botswana using annual time- series data from 1982 – 2018. The study incorporated real exports growth, real Imports growth, trade openness and foreign direct investment(FDI) in the formulated multivariate regression model. The exact method of analysis used is the Auto-Regressive Distributed lag (ARDL) bounds testing approach. The ARDL approach complemented by the Ordinary Least Squares (OLS) Regression Analyses, Unit Root Stationarity Tests, Vector Auto regression (VAR) modelling, co-integration procedures, model stability tests, heteroscedasticity tests and autocorrelation tests. For data analysis STATA statistical application was used. The empirical findings indicated a positive long run relationship between real exports growth and real imports growth on real GDP growth, while trade openness, and foreign direct investment growth rate exhibit a negative relationship with real economic growth. Based on the study results, it is recommended that Botswana undertakes policy reforms related to beneficiation of its primary export products, diversification its economy away from the mining, review of tariff and non-tariffs barriers on trade, promotion of local produced goods and policy reforms related to attraction of foreign investment and promotion of its exports.

Keywords: *Trade Liberalisation, Exports, Imports, Trade Openness, Foreign Direct Investment, ARDL model, Botswana*

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Post World War Two (WW II), the world has witnessed an unprecedented implementation of trade liberalisation policies and strategies, particularly in a large number of developing and transition economies. Trade liberalisation is defined as the removal of anti-export bias and import controls in an economy. These anti-export bias and import controls are inclusive of tariff and non-tariff barriers. Proponents of trade liberalisations policies and strategies invariably advance a diverse range of reasons for their obsession and interest in promoting out-ward oriented development strategies. There are two main reasons often advanced and they are;

Firstly, is the failure of the inward looking Import Substituting Industrialisation (ISI) strategies in many developing and transition economies. Prior to the trade liberalisation wave, many developing and transition economies implemented Import-Substituting Industrialisation(ISI) strategies with limited success. It was believed then, that these protectionist measures would positively contribute to an increased economic growth, thus accelerating the socio-economic development in their respective countries.

Through Import Substituting Industrialisation(ISI) strategies, developing and transition economies levied tariffs and non-tariffs barriers on imports, with the hope of reducing effective demand for Imports and increasing effective demand for domestically produced goods and service.

ISI development policies and strategies failed to yield the intended results, resulting with many developing and transition economies abandoning them, in favour of trade liberalisation policies and strategies. The failure of ISI strategies has been corroborated by studies undertaken by prominent scholars such as Grossman and Helpman (1991) and Edwards (1993) and many others. These studies revealed that ISI strategies delivered reduced developing and transition economies, economic growth potential.

The second reason, for the implementation of trade liberalisation policies and strategies is the desire by developing and transition economies to comply with the stringent requirements of multilateral lending agencies, such as the World Bank(WB), International Monetary Fund (IMF) and the World Trade Organisation. These multilateral lending Agencies invariably

make adoption and subsequent implementation of trade liberalisation policies and strategies a pre-requisite of granting development loans and aid to developing and transition economies.

Multilateral development agencies such as the International Monetary Fund (IMF) and the World Bank continue to hail the successful delivery of trade liberalisation policies and strategies in developing and transition economies. The World Bank Development reports of 1987, 1991, 1999-2000 respectively attempted to prove that trade liberalisation strategies had been a success in increasing exports growth, import growth and economic growth than the Import Substituting Industrialisation (ISI) development Strategies in developing and transition economies where they were implemented. However, this assertion by the World Bank has been disputed by scholars, such as Singer (1987) and Singer and Gray (1988).

As highlighted above, the principal reason of implementing trade liberalisation policies and strategies in developing and transition economies has been to improve the overall macroeconomic performance of a country by, inter alia; leveraging and capturing the static and dynamic gains from trade through more efficient allocation of finite resources, specialisation and division of labour, engendering greater competition, an increase in the flow of knowledge and investment, a faster rate of capital accumulation and technical progress (diffusion of technologies), attainment of a faster rate of economic growth, a faster rate of growth of standard of living. The expectation is that all these are attained in an environment of less unemployment, price stability and most importantly an equitable income distribution.

Trade liberalisation in my developing countries has stemmed from two memberships to the World Trade Organisation(WTO) and Regional Trading Blocs. WTO encourages a reciprocal reduction of trade barriers on a non-discriminatory basis amongst its member countries, while under the Regional Trading arrangement system, there is a reciprocal reduction of trade barriers amongst member countries. However, it is permissible for each member country to determine its external commercial trade policy. However, such external trade policy includes a provision for preferential treatment of members of the trading block. The European Union (EU) and the North American Free Trade Agreements(NAFTA) are some examples of Regional Trading Blocks

The continent of Africa has had its share of Regional Trading Blocks. The current list includes; the East Africa Community (EAC), Common Market for Eastern and Southern

Africa (COMESA), Southern African Development Community(SADC), Southern African Custom Union (SACU), Economic Community of Central African States(ECCAS), Intergovernmental Authority on Development (IGAD), Economic Community of West African States(ECOWAS), Community of Sahel-Saharan States(SEN-CED) and the Arab Maghreb Union (UMA). Augmenting these is the recently formed COMESA-SADC-EAC Tripartite Agreement and the African Union Continental Free Trade Area(CfTA).

Since its independence in 1996, Botswana continue to make efforts to open up its economy and integrate into the world trading system. This is pursued through the implementation of trade liberalisation policies and membership to continental and regional trading blocks. The purpose of this study, therefore, is to investigates the relationship between trade liberation and economic growth in Botswana. The empirical findings will inform formulation of trade liberalisation policies and strategies in developing and transition economies. Further, the findings of this study could provide some useful insights into the current debates on the role of trade liberalisation in stimulating economic growth in developing and transition economies.

1.2 Statement of the Problem

It is imperative for policymakers in developing and transition economies to fully comprehend the dynamics of trade liberalization and its possible effects on economic growth, in order to make informed policy decisions. This understanding is important and a must, given that several of the previously studies undertaken to investigate the relationship between trade liberalisation and economic growth in developing and developed countries have yielded inconclusive and mixed results, attributable inter alia to; use of different proxies for trade liberalisation, different methods of testing, econometric model, misspecification, lack of data, poor quality data and assumption of homogenous production function across developing countries.

Majority of previous studies have largely been concentrated on Asia, Eastern Europe and South America, with little coverage of Africa, particularly Southern Africa. The limited academic research on individual countries in Africa and the methodological weakness of the previous studies provided ample justification to undertake this study.

This study therefore, in the main, contributes to the filling of the gap in the literature on trade liberalisation by investigating the effects of trade liberalisation on economic growth, with a focus on Botswana.

1.3 Research Hypotheses

The study investigates this over-arching objective by subjecting to empirical tests the following hypothesis;

Hypotheses 1

H0 = real exports have no effect on economic growth

H1 = real exports have a positive effect on economic growth

Hypotheses 2

H0 = real imports have no effect on economic growth

H1 = real imports have a positive effect on economic growth

Hypotheses 3

H0 = trade openness has no effect on economic growth

H1 = trade openness has a positive effect on economic growth

Hypotheses 4

H0 = foreign direct investment has no effect on economic growth

H1 = foreign direct investment has a positive effect on economic growth

1.4 Objectives of the Study

1.4.1 The General Objective

The overarching objective of this study is to investigate systematically the effects of the implementation of trade liberalisation policies and strategies on economic growth in Botswana.

1.4.2 The Specific Objective

The specific objective of the study is to investigate the effects of trade liberalisation on economic growth in Botswana

1.5 Significance of the Study

This study makes four main contributions to the existing empirical literature on trade liberalisation and economic growth. Firstly, it examines the role of trade by empirically assessing the effects of the implementation of trade liberalisation policies and strategies on

economic growth in Botswana. Secondly, the study makes a methodological contribution by making use of time-series instead of the commonly used panel data methods. Thirdly, the study employs the econometric technique Autoregressive Distributed Lag model (ARDL)complemented by the Ordinary Least Squares (OLS) Regression Analyses, Unit Root Stationarity Tests, Vector Auto regression (VAR) modelling, co-integration procedures, model stability tests, heteroscedasticity tests and autocorrelation tests. Fourthly, to the best of my knowledge, this is the first study to undertake an ex-post assessment of the effects of trade liberalisation on economic growth in Botswana.

1.6 Scope and Limitation of the Study

This study investigates the effects of trade liberalisation on economy growth. The study focuses on Botswana. The period under consideration is restricted to the period 1982 to 2018. The period chosen was informed and influenced by the desire to consider the most recent period, thus making use of the latest time series data on exports, imports, trade openness, foreign direct investment and economic growth.

The study uses a quantitative time-series approach using the annual time-series data drawn from the World Bank Development Indicators (2018) and the International Monetary Fund (IMF), International Financial Statistics Year book (2018) respectively.

Furthermore, this research study does not enjoy the benefit of drawing from the experiences and challenges encountered by other Researchers who have undertaken ex-post assessment of delivery of trade liberalisation in Botswana.

The limitation of this study is that it does not quantify the expected benefits from increased economic growth such as high employment, increased standard of living and reduction in poverty. The study focus is on the effect on economic growth, without delving into possible externalities (positive or negative) which resulted from the implementation of the trade liberalisation policies and strategies in Botswana.

1.7 Organization of the study

This study is organised into five chapters as follows; Chapter one provides an overview of trade liberalisation policies and strategies and their delivery in developing and transition economies. An overview of International Trade theory, the Regional Trading Blocks and Literature review are discussed in Chapter two. Chapter three provides an overview of the study area, explains the data and econometric technique used to examine the relationship

between trade liberalization and economic growth in Botswana. Empirical findings of the study are analysed and discussed in Chapter four and in Chapter five, the main conclusions of the study and recommendations are presented.

CHAPTER 2

LITERATURE REVIEW

2.1 Historical Development of the Morden Trade Theory

Development of modern trade theory has evolved over a number centuries. It is a combination of diverse range of ideas and economic thoughts. The Mercantilists and Classical Economists like Adam Smith, David Hume and David Ricardo are some of the early economists whose ideas and thoughts morphed into what is known as the Modern Trade Theory.

The Modern Trade Theory is concerned with the determination of the basis of trade, direction of trade and the gains from trade.

2.1.1 The Mercantilists view on Trade

Mercantilism was the philosophy that was propagated by a group of Economists who lived in countries such as the Great Britain, Spain, France and the Netherlands from the thirteenth century until the mid-eighteenth century**.**

The Mercantilists subscribed to the view, that economic interests of their respective nations had to remain supreme and protected at all costs. To ensure that the nations interest remained supreme, the Mercantilists advocated for a very strong foreign trade sector.

The Mercantilists advocated for a favourable trade balance, that is, a surplus of exports over imports. A favourable trade balance guaranteed receipt of payment in the form of gold and silver from the rest of the world. These payments would boost spending within their nations, thus gradually leading to an increase in domestic output and employment opportunities.

To minimise imports and ensure that there was a positive trade balance, the Mercantilists advocated for the imposition of tariffs and non-tariffs trade barriers. To the Mercantilists trade was a zero-sum game.

In the 18th Century, an Economist by the name of David Hume published a “Price-Specie-flow doctrine”. This doctrine which was a critic of the Mercantilists. This doctrine argued that a favourable trade balance was not sustainable as it got eliminated overtime.

The other critic of the Mercantilist was Adam Smith. In 1776 Adam Smith published his economics masterpiece titled the Wealth of Nations. Adam Smith criticized the Mercantilists view of a static world economy and its fixed economic pie. A world with a

fixed economic pie meant that a nations gain from trade was the expense of its trading Partners, thus corroborating the zero sum game view held by the Mercantilists.

Contrary to the Mercantilist zero sum game assertion, Adam Smith argued that trade was dynamic, consequently both trading partners stood to simultaneously benefit from trade. Trade resulted in specialisation and division of labour which contributed to increased productivity within nations and increased world output.

2.2 The Classical Trade Theories

2.2.1 Theory of Absolute Advantage

Adam Smith was a Classical Economist. In his Wealth of Nations, Adam Smith explored the basis of International Trade and posited that free trade promoted specialisation and the international division of labour, which contributed to increased productivity within nations and increased world output. Accordingly, with free trade nations focused on producing only those goods that they could produce at the least cost.

Adam Smith's Theory of Absolute Advantage was anchored on the Labour theory of value, which assumes that within each nation, labour is the only factor of production, labour is homogenous and of the same quality and production costs is directly related to the amount of labour required to produce a good.

In a two country, two good worlds, trade and specialisation would be mutually beneficial when one country uses less labour (has an absolute cost advantage) to produce a unit of a good and the other country has an absolute cost advantage in producing the second good. Consequently, each country would import only goods in which it has an absolute cost disadvantage and export only those goods in which it has an absolute cost advantage.

According to Adam Smith, mutually beneficial trade occurs, when each country has an absolute cost advantage in producing one good, that it can export to a country with an absolute cost disadvantage.

2.2.2 Theory of Comparative Advantage

Not content with Adam Smith's Theory of Absolute Advantage, another classical economist called David Ricardo who lived from 1772 to 1823, developed the theory of Comparative Advantage, which was an alternative to the theory of Absolute Advantage.

The theory of Comparative Advantage demonstrated the certainty of beneficial trade when one country has absolute cost advantage in the production of all goods. According to this theory, even if a country possesses an absolute cost advantage in the production of both goods, a basis for a mutually beneficial trade still existed, as long as the country with an absolute cost disadvantage (relatively less inefficient) specialised and exported the good in which its absolute cost disadvantage was the least (less inefficient).

To illustrate the principle of comparative advantage, David Ricardo developed a simple model anchored on the following assumptions;

a. A two country world, with labour the only factor of production used to produce only two goods.
b. Each country has a fixed endowment of homogenous labour which is fully employed.
c. Existence of a free movement of labour among industries within a Country only. No labour movement between countries.
d. The same level of technology obtains in both countries, resulting with each country using the same production method for each good.
e. Constant costs which are proportional to the amount of labour used in production of a good.
f. Existence of perfect competition in all markets
g. No barriers to trade. As a result, free trade existed
h. Zero transportation cost.
i. Profit maximisation is the motive of firms, whereas consumers strive for utility maximisation, through their production and consumption decisions.
j. Absence of any money illusion
k. Trade is balanced.

2.2.3 The Neoclassical Trade Theory

The Heckscher-Ohlin theory, also known as the Factor Endowment theory was developed by the two Swedish Economists Eli Heckscher and Bertil Ohlin. The theory maintains that differences in relative factor endowments among countries are what informs the basis of trade.

The Heckscher – Ohlin (H-O) theory provides answers to two questions which largely addressed or explained by the Ricardo's theory of Comparative Advantage. The two

questions are; what determines Comparative Advantage and what is the impact of International Trade on the earnings of various factors of production within trading countries?

H-O theory asserts that factor (resource) endowments are the basis of a country's Comparative Advantage and that Comparative Advantage is better explained exclusively by differences in relative national supply conditions.

H-O theory underscores the important role countries resource endowments, specifically labour and capital, which are the main determinants of Comparative Advantage. For example, Botswana exports diamonds because its heavily endowed with diamonds and labour.

The H-O theory is based on assumptions of, uniform tastes and preferences within countries, factor inputs of the same quality and uniform technologies within countries.

The Factor-Endowment Theory maintains that there are relative price differentials among countries because countries have different relative endowments of factor inputs and that different goods uses factor inputs in different intensities during production.

On the basis of the afore-mentioned, a country exports a good which uses a large amount of the relatively abundant input and imports a good whose production uses a relatively scarce (expensive) input. This explains why a land abundant nations such as Botswana export land intensive goods, such as meat(beef), while labour-abundant nations such as China exports labour-intensive goods such as textiles.

2.2.4 The Leontief Paradox

Wassily Leontif empirically investigated the H-O theory. Prior to Wassily Leontief, it was widely believed that the United States of America(USA) with its abundant capital and relatively scarce labour would export capital intensive goods and import labour intensive goods as per the dictates of the H-O theory.

Leontief's investigation revealed that USA exports were less capital Intensive than its imports. These findings contradicted the predictions of the Factor-Endowment theory. These findings became known as the Leontief's Paradox.

2.3 Regional Trading Blocks

Individual Countries purse Regional Trading Blocks for a variety of reasons. This is done mainly to attain economic integration and increased economic growth and development.

Economic integration refers to the process of removing barriers to trade, (both tariffs and non-tariff barriers) and eliminating restrictions on payments and factor of production mobility. The end result of economic integration is the merging of two or more economies into Regional Trading Blocks, thus attaining an expanded regional market.

An expanded regional market enables economies of large scale production, promotes specialisation, learning by doing and equally important attracts foreign investments.

There are four types of regional trading blocs currently in existence. These are; A Free Trade Area, A Customs Union, A Common Market and an Economic Union.

2.3.1 A Free Trade Area

A Free Trade Area is group of trading countries whose members agree to remove all tariffs and non-tariff barriers amongst themselves. Each Member however maintains its own external Commercial Policy against non-members of the Free Trade Area. Examples of Free Trade Areas are the North American Free Trade Agreement(NAFTA) and the African Union Continental Free Trade Area (CfTA).

2.3.2 A Customs Union

A Custom Union is group of trading countries, who agree to remove all tariff and non-tariff trade barriers amongst themselves. In addition, all member countries have a Common Commercial Policy against non-participants.

The purpose of a Common Commercial Policy is to allow free trade within the Custom Union, whereas all trade restrictions imposed against outsiders are equalized. Examples of Custom Unions are BENELUX (Belgium, the Netherlands and Luxemburg) formed in 1948, SACU (Botswana, eSwatini, Lesotho, South Africa and Namibia) formed in 1910 and The Southern Common Market (MERCOSUR) formed by Argentina, Brazil, Paraguay and Uruguay in 1991 is a Custom Union.

2.3.3 A Common Market

A Common Market is an arrangement in which the free movement of goods and services is permissible among Member Nations. However there an exist a Common Commercial

Policy against non-members and the free movement of factors of production across national borders of members of the Common market.

The Common Market is a more advanced stage of integration than a free trade area or a customs union. An example of a Common Market is the European Union, which achieved this status in 1992.

2.3.4 An Economic Union

Beyond a Free Trade Area, Custom Union and a Common Market, economic integration morphs into an Economic Union. In a full Economic Union member countries unify all their economic policies including monetary, social, and fiscal policies. The adopted economic policies are administered by a supra national institution.

The task of creating an Economic Union is much more complex and time consuming than the establishment of a Free Trade Area, Common Market and Custom Union respectively. This is because a pre-requisite for the formation of an Economic Union is a unanimous agreement amongst Member Countries to transfer economic sovereignty to a supranational authority. An example of an Economic Union is the United States of America.

2.4 Empirical Literature Review

Economic literature posits that trade liberalisation leads to an improved allocation of domestic resources, which contributes to an increase in economic growth. Higher economic growth contributes to economic development.

On the other hand, import restrictions create an anti-export bias by increasing the price of imports relative to those of exports. The removal of the anti-exports bias through trade liberalization encourages the shifting of economic resources from producing import substitutes to producing export-oriented goods. In addition, trade liberation promotes private investment.

Bhagwati and Srinivasion (2001) corroborates economic literature. They contend that there is no country in the world, developed or developing that has managed to sustain a high economic growth performance over a long period, without pursuing trade liberalisation policies and strategies.

The above notwithstanding, there exists an extensive empirical literature, using a range of methodologies on the effect of trade liberalisation on economic growth. The existing

empirical evidence remains inconclusive and controversial. (Frunkel and Rommer,1999; Dollar and Kaaray, 2004; Srinivason, 2001; Wacziary,1998), attributes this, to the use of different proxies for liberalisation, econometric model misspecification, different methods of testing, lack of data, poor quality data and assumption of homogenous production function across developing countries.

Several studies have been carried out in the recent past to investigate the relationship between trade liberalisation and economic growth in a developing and transition economies. They include the following:

The most recent study on the effect of trade liberalisation is that of Kemal et. Al (2006), who empirically analysed the effects of trade liberalisation on economic growth in Pakistan using the Auto-Regressive Distributed lag (ARDL) bounds testing approach. The results revealed a positive and significant relationship between trade liberalisation and economic growth.

In another study, Kraay and David Dollar (2004) investigated the relationship between trade liberalisation and economic growth with a focus of a group of developing countries in Africa and Asia. The results of this study were mixed. The investigation revealed that Bangladesh, India and Sri Lanka and South Africa experienced large increases in economic growth as a consequence of significant reductions in tariff and non-tariff barriers. The study also revealed that in two-thirds of the developing economies, with majority being Africa countries, there was no significant increase in economic growth owing to weak outward orientation.

Wacziary (1998) investigated the links between trade liberalisation and economic growth using data from a panel of 57 countries covering the period 1979 to 1989. The investigation revealed a positive relationship between trade liberalisation and economic growth in the 57 countries, under study. A similar result was found by Frankel and Romer (1999) who used a cross-country regression. The results of their study revealed a quantitatively large, significant and robust positive effect of trade liberalisation on economic growth.

Dollar and Kraay (2004) investigated the sources of economic growth in a group of 95 developing countries during 1976-1985 and found a strong positive relationship between trade liberalisation and per capita GDP growth.

Studies by Krueger (1978), Romer (1989), Ghatak et al. (1997), Sachs and Warner (1995), and Edwards (1993) also revealed evidence of a positive effect of trade liberalisation on economic growth.

Sakyi (2010) empirically examined the relationship between trade liberalisation and economic growth in Ghana using the Auto-Regressive Distributed lag (ARDL) bounds testing approach The study revealed a positive and statistically significant effect of trade liberalisation on economic growth in both the short run and long run.

Kwame (2013) examined the effect of trade liberalisation and economic growth in Ghana over the period 1986 and 2010 and discovered that trade liberalisation contributed positively to GDP growth in the long run but negatively impacted on growth in the short run. Kwame's (2013) employed the ARDL bound test to integration.

Rasid (2000), used the participatory research method to investigate the effects of trade liberalisation on economic growth in Bangladesh. The empirical results revealed a positive effect of trade liberalisation on manufacturing growth in Bangladesh.

Mamun and Nath (2004) using co-integration analysis, error correction model and granger causality test, empirically examined the relationship between exports and economic growth in Bangladesh. They found unidirectional causality from exports to growth.

Ahmed (2001), using the Lucas "Human Capital Model of Endogenous growth" empirically investigated the relationship between trade liberalisation and industrial growth in Bangladesh. The exogenous variables that Ahmed (2001) used in his estimation model were; ratio of investment to gross domestic product (GDP), ratio of exports to GDP, custom duty collection rate and secondary enrolment ratio respectively. The result revealed positive effects of trade liberalisation on economic growth in Bangladesh.

Kalu et.al (2016) investigated the relationship between trade liberalisation, exports, imports and economic growth in Nigeria for the period 1991 -2013. Using the Classical Linear Regression Model (CLRM), the study revealed that exports had significant positive effect on economic growth while imports had a non-significant positive effect on economic growth.

Keho and Wang (2017) disentangled the effects of trade liberalisation on economic growth in Cote D'Ivoire covering the period from 1965 to 2014. Using the Autoregressive Distributed Lag (ARDL) bounds test and the Toda and Yamamoto Granger causality test,

the investigation revealed a positive short run and long run positive effect on exports, imports and economic growth.

Gholami (2000) investigated the relationship between exports growth and economics growth in Iran, during the period of (1959 – 95), using the Exogenous Test and Causation. The empirical results indicated a two-sided causal relationship between exports and economic growth.

Heydariyan (1996) in his study investigated the causal relationships between economic growth, export growth and the growth of production factors (labour force and capital) in the form of a Vector Auto-Regression (VAR) model for the economy of Iran in the period of 1959 – 1992. To determine the causal relationship between the variables in this model he used Wald Test which indicated that export growth is the cause of economic growth.

Greenaway, Morgan and Wright (2002) using dynamic panel model assessed the effects of trade liberalisation on economic growth using a sample of 73 countries for the period of 1965-1985. The study revealed a positive relationship between trade liberalisation and economic growth.

Sarkar (2005), using the Autoregressive Distributed lag (ARDL) bounds testing approach to co-integration empirically examined the effect of trade openness on real GDP capita of India and South Korea. Sarkar (2005) found a positive but insignificant relationship between trade openness and economic growth in the long run.

Mayasa Mkubwa Hamad & Burhan Ahmad Mtengwa & Stabua Abdul Babiker (2014), assessed the effects of trade liberalisation on economic growth in Tanzania. The results revealed a positive and significant effect of trade openness on economic growth in Tanzania.

Bader S. S. Hamdan (2016) assessed the effects of exports and imports on economic growth in a group of Arab countries covering the period 1995 to 2013. The study employed the panel data approach in 17 countries; (Jordan, United Arab Emirates, Bahrain, Tunisia, Algeria, Saudi Arabia, Sudan, Oman, Qatar, Kuwait, Lebanon, Egypt, Djibouti, Mauritania, Morocco, Yemen and Palestine). The empirical results revealed a positive relationship between exports and imports on economic growth. An increase in exports and imports led to an increase in the 17 countries economic growth.

Despite of the fore-going, several other empirical studies have revealed a negative relationship between trade liberalisation and economic growth. These include those of

Ahmed and Harnhirun (1995), Islam (1998), Grossman and Helpman (1991), Harrison (1996), Greenaway et al. (1998), Rodriguez and Rodrik (1999), Harrison and Hanson (1999), Srinivasan (2001) and Bolaky and Freund (2004), UNCTAD,1989; Agosin,1991; Clarke and Kirkpatrick, 1992; Greenaway and Sapsford, 1994; Shafaedin, 1994; and Jenkins, 1996).

The above notwithstanding, several other studies were undertaken to specifically examine the relationship between foreign direct investment and economic growth in developing and transition economies. They include the following:

Akinlo (2004) investigated the relationship between foreign direct investment and economic growth in Nigeria, covering the period 1970 – 2001. The empirical result revealed a negative and insignificant relationship between foreign direct investment and economic growth.

Admas (2009), by investigating the impact of foreign direct investment on economic growth in sub-Sahara African countries found an insignificant and weak positive relationship between foreign direct investment on economic growth.

Falki (2009) by analysing the impact of foreign direct investment and economic growth in Pakistan during the period 1980 – 2006, found a negative and statistically insignificant relationship between FDI and economic growth.

Belloumi (2014) empirically analysed the impact of foreign direct investment, trade openness and economic growth in Tunisia covering the period of 1970 – 2008. Belloumi (2014) employed the ARDL bound test and Granger causality test to identify the short-run and long-run dynamics among the variables of interest. The empirical results indicated an insignificant causality between foreign direct investment and economic growth. These results went against the theoretical expectation of a positive impact of foreign direct investment on economic growth.

Belloumi (2014) results corroborated the earlier results by Herzer et al. (2008) who had analysed the impact of foreign direct investment on economic growth using time series data of 28 countries using ARDL bound test to cointegration technique. The study revealed no effect of foreign direct investment on economic growth neither a long run nor short run for the majority of countries the study covered.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Description of the study area

The republic of Botswana is situated in the southern part of Africa. The country shares its borders with Zambia, Zimbabwe, Namibia and the South Africa.

Figure 1 shows the map of Southern Africa, with Botswana nestled in the middle;

Figure 1 – Map of SADC

Botswana has a surface area of 581,730km^2, which is almost the same size as the State of Texas in the United States of America and France in mainland Europe. Botswana's climate is largely semi-arid and the Kalahari Desert covers 2/3 of the country. Botswana is prone to episodes of drought. The semi-arid climate and the largely sandy terrain makes arable

agriculture very difficult, consequently has deficit in food production, with the shortfall coming as imports from other countries.

Despite its hard climate and weather conditions, Botswana remain one of the largest producers in Africa, with the bulk of its beef products exported to the United Kingdom, European Union and the neighbouring South Africa.

According to Botswana's 2011, national population census and housing report Botswana has a population of 2,024,904 making it to have one of the lowest population density in the world.

Botswana is a stable democracy practising a multi-party system. Relatively free and fair elections are held after every five, albeit with one political party, Botswana Democratic Party (BDP) winning all held elections since independence.

For the fifth consecutive year, the country has been rated as the least corrupt country in Africa and has the highest sovereign credit rating on the continent.

Botswana continue to perform well, in the areas of good governance, sound macroeconomic policies prudent management of the country's finite natural resources, corruption and political rights and freedom. Botswana is ranked 2nd in good governance in Africa (Ibrahim Index of African Governance (IIAG) report, 2017), after Mauritius and 2nd after Seychelles in Africa according to Corruption Perceptions Index (CPI) report issued Transparency International 2019 Corruption Index report (2019)

3.1.1 Economic Environment

Since independence in 1966, Botswana has embarked on a series of socio-economic development programs which catapulted the country to an upper middle-income status at the turn of the 19th century. At independence Botswana's GDP per capita was US$70.00 (AfDB, 2013a), making one of the poorest countries in the world at the time.

The discovery of huge deposits of diamonds in 1970's in Botswana, coupled with governance, sound macroeconomic policy and prudent management of resources contributed to the transformation of the country from a low income country to an upper middle income country with a GDP per capita of US8167.00 (WDI, 2018).

Botswana has historically enjoyed one of the highest economic growth rates in the world, with real GDP growth averaging 6.45%, during the 36 years' period under study.

Despite its impressive economic performance over the years, Botswana, just like other developing and transition economies continues to face a myriad of developmental challenges such as; 17.7% high unemployment rate. (Botswana National Statistics report, 2018), high inequality with a Gini-coefficient of 0.52 (Botswana National Statistics report, 2018), 16.3% of the population living below the US$2.00 per day poverty line. (Botswana National Statistics report, 2018), HIV/AIDS prevalence rate of 17% (Botswana National Statistics report, 2018) which is amongst the highest in Sub-Saharan Africa, heavy dependence on the Diamond sector, with the sector contributing 30% of GDP and 70% of revenue derived from exports (Botswana National Statistics report, 2018).

The downside of the over reliance on Diamond exports became more pronounced during the 2008 Global Financial Crisis (GFC), when economic growth contracted by -7.65%, owing to the reduced demand for diamonds globally.

3.1.2 Botswana Trade Policy

The finite resource endowments, unfavourable climatic conditions and small domestic markets (because of a small population) in Botswana contributes to country being unable to produce with efficiency and effectiveness the myriad of goods and service the country desperately needed. Consequently, Botswana was forced Botswana to pursue trade, in order to obtain the shortfall goods and services needed, hence the implementation of trade liberalisation policies and strategies over the years.

Trade liberalization policies and strategies pursued in Botswana are anchored on the SACU trade policy framework and SADC trade protocols. Domestication of the SACU Trade Policy framework, SADC trade protocols and their subsequent implementation has resulted in significant reduction over the years of trade barriers, thus opening up of trade in many restricted items, aggressive promotion of export policies and reduction of import tariffs and liberalization of foreign exchange regime.

Trade liberalisation is a continuous process and currently on-going in Botswana and in other SACU Member States. Botswana's commitment to trade liberalisation is further demonstrated by its continued active participation in the current implementation of the African Union Continental Free Trade Area(CfTA).

Botswana government attaches great importance and priority to export promotion and attraction of foreign direct investment (FDI). In 2004, the Botswana Export Development

and Investment Authority(BEDIA) was established with the mandate to promote Botswana's export externally and to attract foreign direct investment inflows.

Overall Botswana remains an attractive destination for foreign investors owing to a host of factors, some which are; a stable macroeconomic and political environment. The African Investment Index 2017, ranked Botswana as the most attractive investment destination in Africa (Quantum Global, 2017). The World Investment Report (2017) ranked as the fifth most attractive economy for foreign direct investment (FDI) in Africa (UNCTAD, 2017).

Within Botswana, the institutions that play a role in Trade Policy formulation include the Ministry of Investment, Trade and Industry, Ministry of Finance and Development, Ministry of Transport and Communications; and Ministry of Agricultural Development and Food Security. (BNDP 11, 2018).

3.2 Research design

The study on the effects of the implementation of trade liberalisation policies and strategies on economic growth is conducted using quantitative analysis. An estimated regression equation comprising of economic variables of interest, was developed. The five variable of interest were; annual real GDP growth, annual exports growth, annual imports growth, trade openness and foreign direct investment growth.

Real GDP growth(Y) is the endogenous variable (dependent variable), while annual exports growth(X), annual imports growth(M), trade openness(T) and foreign direct investment growth(FDI) are exogenous variables (independent variables).

The estimated regression equation is subjected to an empirical test using the Auto-Regressive Distributed lag (ARDL) bounds testing approach. The ARDL approach was complemented by the use of; statistical STATA software application, the Ordinary Least Squares (OLS) Regression Analyses, Unit Root Stationarity Tests, Vector Auto regression (VAR) modelling, co-integration procedures, model stability tests, heteroscedasticity tests and autocorrelation tests.

In the main, the study examines whether the estimated regression equation(model) is supportive of the existing literature of Trade liberalisation and economic growth. The empirical findings inform policy recommendations to the country under study, Botswana.

3.2.1 Data Sources, Types and Method of Collections

This study employs time-series to in empirically investigate the effect of implementation of trade liberalisation policies and strategies on economic growth in Botswana. The period under consideration is from 1982 – 2018. This translates to 37 years.

The secondary time-series data was obtained data drawn from the World Bank Development Indicators (2018) and the International Monetary Fund (IMF), International Financial Statistics Year book (2018).

3.2.2 Methods of Data Analysis

This study employs both descriptive and econometric analysis in the analysis. Tables and figures are used to graphically demonstrate the trends of all variables of interest during the period under consideration. The variable of interest is; annual GDP growth (endogenous variable), annual real exports growth (exogenous variable), annual imports growth (exogenous variable), trade openness (exogenous variable) and foreign direct investment growth (exogenous variable).

The study employs the Auto-Regressive Distributed lag (ARDL) bounds testing approach, to analyse the short-run and long run relationship between the endogenous and exogenous variables. The ARDL approach is complemented by the use of the Ordinary Least Squares (OLS) Regression Analyses, Unit Root Stationarity Tests, Vector Auto regression (VAR) modelling, co-integration

3.2.3 Descriptive Statistical methods

Carrying out an empirical investigation on the impact of the implementation of trade liberalisation policies and strategies on economic growth in Botswana entailed the following steps:

The first step is to decide on the variable of interest, collection of the requisite term-series data and subsequently the formulation of the trade model to the estimated (that is, the estimated regression equation). The time-series data for all the variable is sourced from the World Bank Development Indicators (2018) and the International Monetary Fund (IMF), International Financial Statistics Year book (2018).

The second critical step is the determination of the degree of integration of each variable of interest. To determine this, the study carries out the Augmented Dickey-Fuller test(ADF).

Once the order of integration of the variables is established, the next step is to carry out a bound test to co-integration to determine the possible long run and short run relationship between the variables. This analysis will be following the co-integration test of the autoregressive distributed lag model.

The last step is the interpretation of the empirical analysis results.

3.3 Econometrics Model Specification

This study adopted the Autoregressive Distributed Lag (ARDL) bounds test to co-integration. Pesaran and Shin (1999) are the chief advocates of this technique. The ARDL technique permits the use of the Ordinary Least Squares (OLS) for estimation of co-integration once the appropriate lag length has been selected. With the advent of many statistical applications such as STATA the appropriate lag length is automatically selected.

The ARDL technique was used because of the necessity to undertake a long run and short run empirical analysis of the dynamic interactions between four trade liberalisation variables.

The study uses annual time series data covering the period 1982 – 2018 to assess the effect of implementation of trade liberalisation policies and strategies on economic growth in Botswana. The choice of the period of study was informed by the availability of secondary data on key variables of interest such as exports growth rates, imports growth rates, trade growth rates, foreign direct investment growth rates and economic growth rates.

To investigate the relationship between trade liberalisation and economic growth, the following linear regression was formulated and subsequently estimated using the STATA statistical application;

$$\acute{Y} = \acute{\alpha} + \beta X + \beta M + \beta T + \beta RDI + \mu \quad \ldots\ldots (1)$$

Where $\acute{\alpha}$ = constant term

β = co-efficient

μ = Error term

$\acute{Y}$ = real GDP growth

X = real exports growth

M = real imports growth

T = trade openness

RDI = Foreign Direct Investment growth rate

In essence, the estimated regression equation (1) tests whether there has been any change in terms of annual GDP growth rate, exports growth rate, imports growth rate, trade growth and foreign direct investment growth rate as trade liberalisation policies and strategies were implemented in Botswana, during the period under study.

3.3.1 Definition of Variables

The model has five variable of interest. These are real GDP growth(Y), real exports growth(X), real imports growth(M), trade openness(T) and foreign direct investment growth(FDI).

3.3.1.1 Endogenous variable

Real GDP growth is the endogenous variable. It is defined as the Annual percentage growth rate of GDP at market prices based on constant 2010 United States of America dollars prices. GDP the total value of production of final goods and services produced in Botswana by Botswana residents during the year. The data is in constant 2016 US dollars and sourced from the World Bank Indicators database (2018), hence the data is purchasing power parity adjusted and comparable across countries.

3.3.1.2 Exogenous variables

The Exogenous variables are real exports growth(X), real imports growth (M), trade openness (T) and foreign direct investment growth (FDI);

3.3.1.3 Real Export growth(X)

Real Exports growth is defined as the annual percentage growth rate of real exports at market prices based on constant 2010 United States dollars' prices. Exports of goods and services comprise of sales, barter, or gifts or grants, of goods and services from Botswana to other countries. The data was obtained from the World Bank Development Indictors (2018) datasets.

3.3.1.4 Real Import growth(M)

Real Imports growth is defined as the Annual percentage growth rate of real imports at market prices based on constant 2010 United States dollars' prices. Imports of goods and

services consist of purchases, barter, or receipts of gifts or grants, of goods and services by Botswana from other countries. Data was obtained from the World Bank Indicators datasets.

3.3.1.5 Trade openness (T)

Trade openness is the summation of exports and imports as a ratio to the total GDP. Trade openness is an important indicator of the level of trade liberalisation of a country. The data was obtained from the World Bank Development Indictors (2018) datasets.

3.3.1.6 Foreign Direct Investment(FDI)

Foreign Direct Investment (FDI) growth is defined as the annual percentage growth rate of real foreign direct investment at market prices based on US dollars. Foreign Direct Investment are the net capital inflows of investment to acquire assets or a lasting management interest (10% or more voting stock) in an enterprise operating in an economy other than that of the investor. The data was obtained from the International Monetary Fund(IMF), International Financial Statistics Year book (2018).

3.3.2 Unit Root Test

Prior to testing the estimated regression equation (1), there is need to test for stationary (non-stationary), to the problems associated with time-series data alluded to above (under 5.2) are addressed. A test of stationarity (non-stationarity) is the Unit Root test.

Various methods are often used to test for the Unit Root. The most common and popular ones include, the Augmented Dickey Fuller (ADF, Phillips-Perron (PP) and Kwiatkowski-Phillip-Schmidt-Shin(KPSS) tests. The Statistical program STATA automatically determined lag lengths using Schwarz information criteria intercept estimations

3.3.3 Bounds test for co-integration

Once the Unit Roots has been completed, the bound test for co-integration follows. The purpose of this tests is to establish if there a relationship between the model variables. Two variables are co-integrated if they have a long-term relationship between them.

The Augmented RDL approach to co-integration is done between the series on either GDP growth rate or per capita GDP growth rate and one of the trade openness indices of Botswana.

The resultant model is as follows:

Y't is a vector (dependent variable) and variables in (X't)- regressor variable

δ and $\boldsymbol{\beta}$ are coefficients

ϒ is a constant; i=1,,,,,,,k,

P is the optimal lag orders for the dependent variable

q is the optimal lag orders for regressor variable

If a long-run relationship (co-integration) among variables is found, the next stage is to examine the long run and short-run relationships among selected variables. As in equation (3)

$$gdp_t = a_0 + \sum_{i=1}^{p} a_{1i}\Delta gdp_{t-1} + \sum_{i=0}^{q} a_{2i}\Delta Exports_{t-1} + \sum_{i=0}^{q} a_{3i}\,\mathrm{Im}\,ports_{t-1} + \sum_{i=0}^{q} a_{4i}\Delta Trade_{t-1} + \sum_{i=0}^{q} a_{5i}\Delta FDI_{t-1} + \Phi_t \; --(3)$$

For the short-run dynamics from the ARDL model is developed as follows:

$$\Delta gdp_t = a_0 + b_1 gdp + b_2 Exports_{t-1} + b_3\,\mathrm{m}\,ports_{t-1} + b_4 Trade_{t-1} + b_5 FDI_{t-1} +$$
$$\sum_{i=1}^{p} a_{1i}\Delta gdp_{t-1} + \sum_{i=0}^{q} a_{2i}\Delta Exports_{t-1} + \sum_{i=0}^{q} a_{3i}\,\mathrm{Im}\,ports_{t-1} + \sum_{i=0}^{q} a_{4i}\Delta Trade_{t-1} + \sum_{i=0}^{q} a_{5i}\Delta FDI_{t-1} + \Psi ECM_{t-1} + \varepsilon_t \; --(4)$$

3.3.4 Diagnostic and Stability Tests

Regression models involving time-series data are used for forecasting. For forecasting results to be reliable and valid there is need to establish the goodness of fit of the ARDL model. This entails conducting several diagnostic tests and model stability tests which are inclusive, inter alia of normality, heteroscedasticity, and serial correlation. The Stability Test is conducted by employing the Cumulative Residual (CUSUM) and the Cumulative sum of squares of recursive residuals (CUSUMSQ).

CHAPTER 4

RESULT AND DISCUSSIONS

4.1 Introduction

This chapter, in the main presents the results of the empirical analysis of the regression model developed in the previous chapter,

4.2 Descriptive Statistics Results

Table 1 depicts the descriptive statistics results of the variables studied variables covering the period 1982 – 2018.

Table 1: Descriptive statistics for Botswana

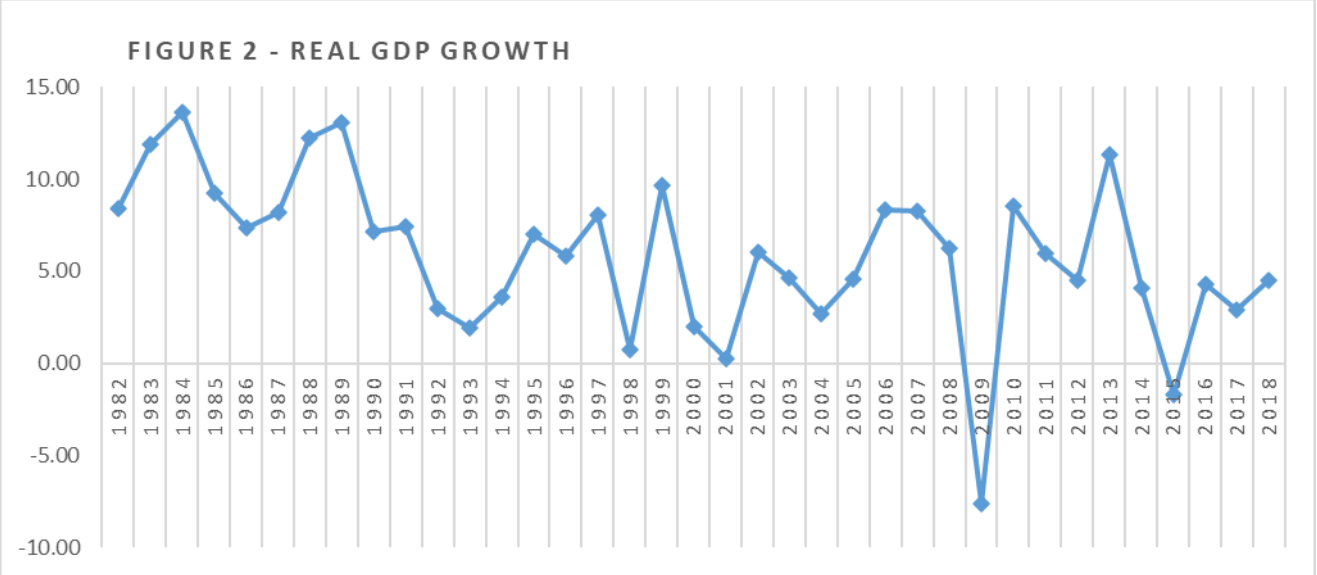
Statistics	**Endogenous variable**	**Exogenous Variables**			
	GDP growth(Y)	**Exports(X)**	**Imports(M)**	**Trade(T)**	**RDI**
Mean	5.901892	52.81595	49.72459	26.42892	9.201892
Maximum	13.61	87.13	85.25	319.24	27.8
Minimum	-7.65	37.92	33.36	-62.49	-26.00
Std deviation	4.285467	9.833425	12.56151	55.29642	10.05896
Observations	37	37	37	37	37

Source: World Bank Development Indicators and IMF Financial Statistics, 2018

Table 1 reveals that Botswana's average GDP growth during the period under consideration is 5.90%. GDP growth rate plummeted to an all-time low of -7.65% in 2009 attributable to the Global Financial Crises (GFC), which led to the reduction of the demand for diamond, Botswana largest revenue earner.

All exogenous variables exhibit a positive trend during the period under review with export growth, imports growth, trade openness and foreign direct investment each recording a positive growth of 52.82%, 49.72%, 26.43% and 9.20% respectively. However, trade openness (2015) and foreign direct investment (1994) went down to -62.49% and -26.00% owing to the slowing down of the world economy, which resulted the reduction in the demand for diamonds and largely due to the droughts situation in 1994.

4.2.1 Real GDP growth in Botswana



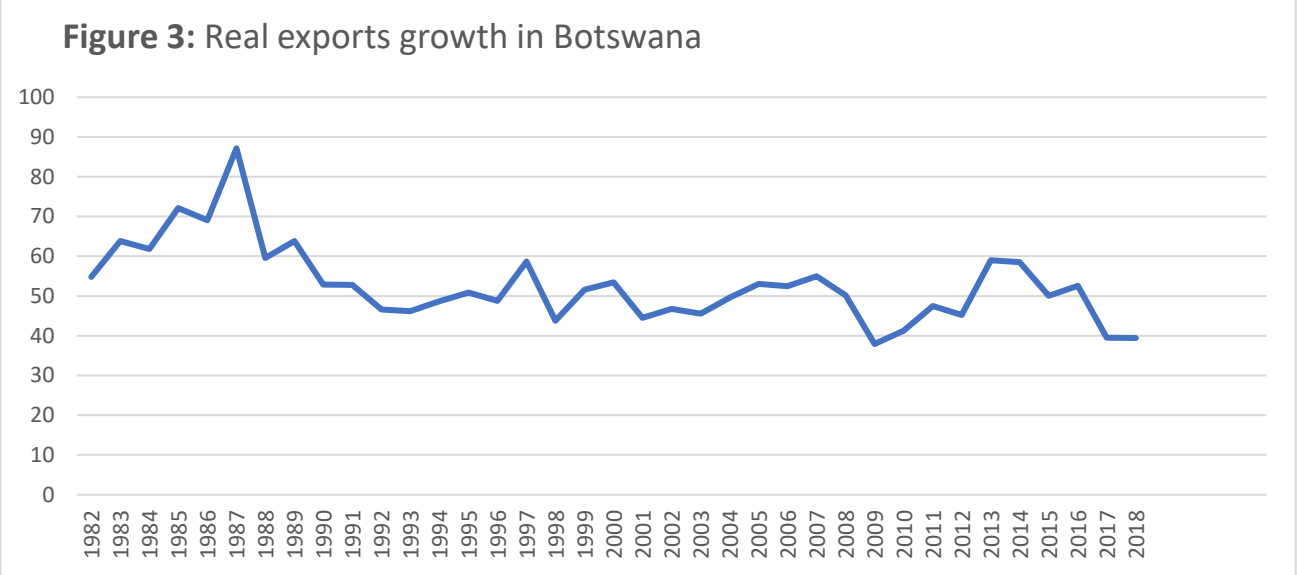
Source: World Development Indicators, 2018.

Overall real GDP growth has exhibited an upward trajectory, albeit with some fluctuations since 1982 averaging 6,45% as depicted in figure 2 above. The maximum real GDP growth 13.10 % was recorded in 1989, mainly as a result as a result of mining boom and the re-investment of proceeds from the diamond revenue into other spheres of economic activity, such health, education and infrastructural developments, Mining accounts for about one-third of Botswana's GDP, 90% of export earnings, 45% of government revenue and 80% of total exports (Botswana National Development 11, 2018).

Since year 2000, Botswana has experienced slower growth, culminating the minimum recorded real GDP growth of -7.75% during the 2009 financial year. This was a consequence of the Global Financial Crisis, which resulted with reduction in Botswana diamond. The country recovered, with 8.56 % real GDP growth in 2010, further increasing to 11.30% in 2013. The recovery was mainly due to the improved exports in the mining sector particularly the diamond sector.

Figure 2 also indicates that real GDP growth grew by 4.3 % in 2016 after contracting by 1.7% the previous year. Improving minerals sales and rising commodity prices and the growing services sector accounted for the upturn in the economy.

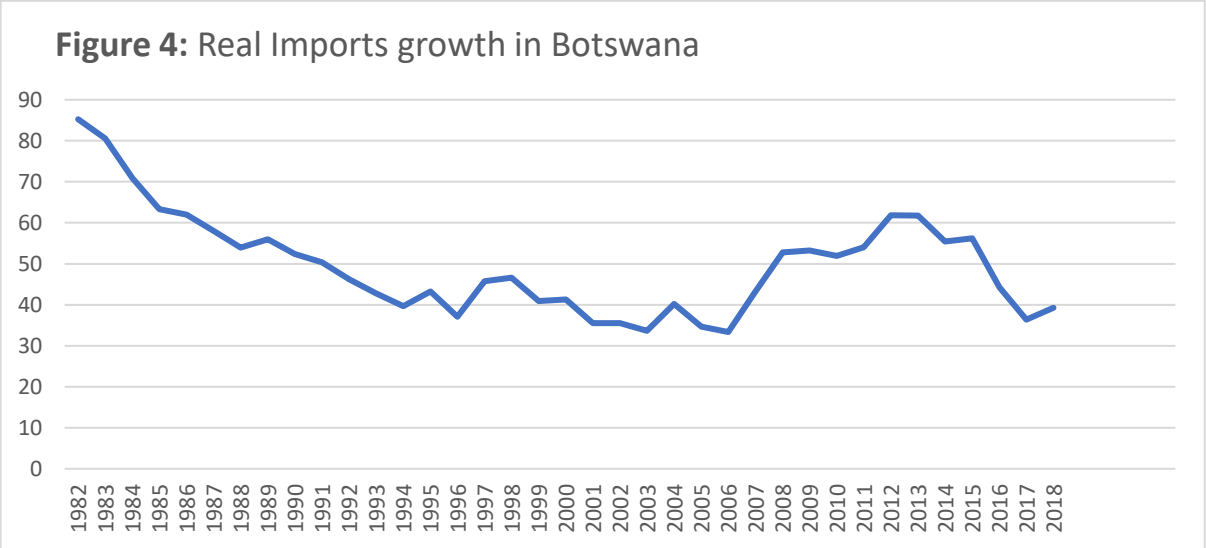
4.2.2 Real exports growth in Botswana



Source: World Development Indicators, 2018.

Real Exports growth has exhibited an upward trajectory, albeit with some fluctuations averaging 52.8% as depicted in figure 3, above. Since Botswana's economy is highly correlated with the global trends, during the 2008 global financial crisis, Botswana's economy posted a negative GDP growth of -7.65%, as a consequence of a decrease in exports, which went down to 37.92%, the lowest exports growth during the period under consideration.

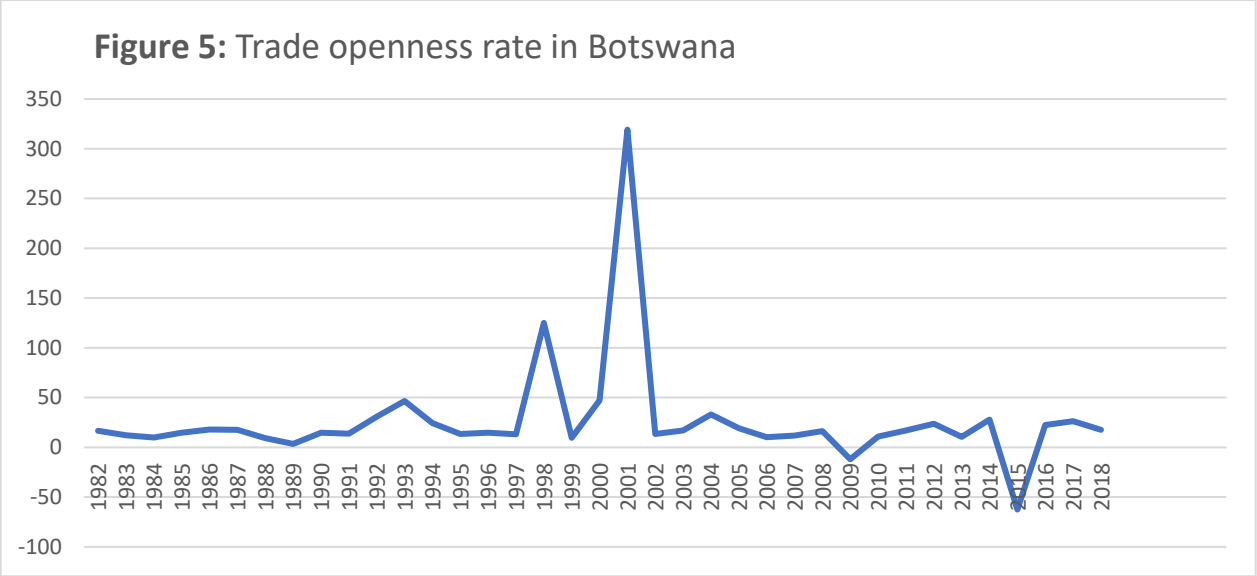
4.2.3 Real Imports growth in Botswana



Source: World Bank Development Indictors, 2018

Figure 4 depicts a notable decrease in real import growth from 85.25% in 1982 to 39.28% in 2018. The reduction in imports could be attributable to the improvement in the agriculture sector, the sector that the government continues to invest a lot of resources, with the hope of reducing the import bill particularly which is largely dominated by food products.

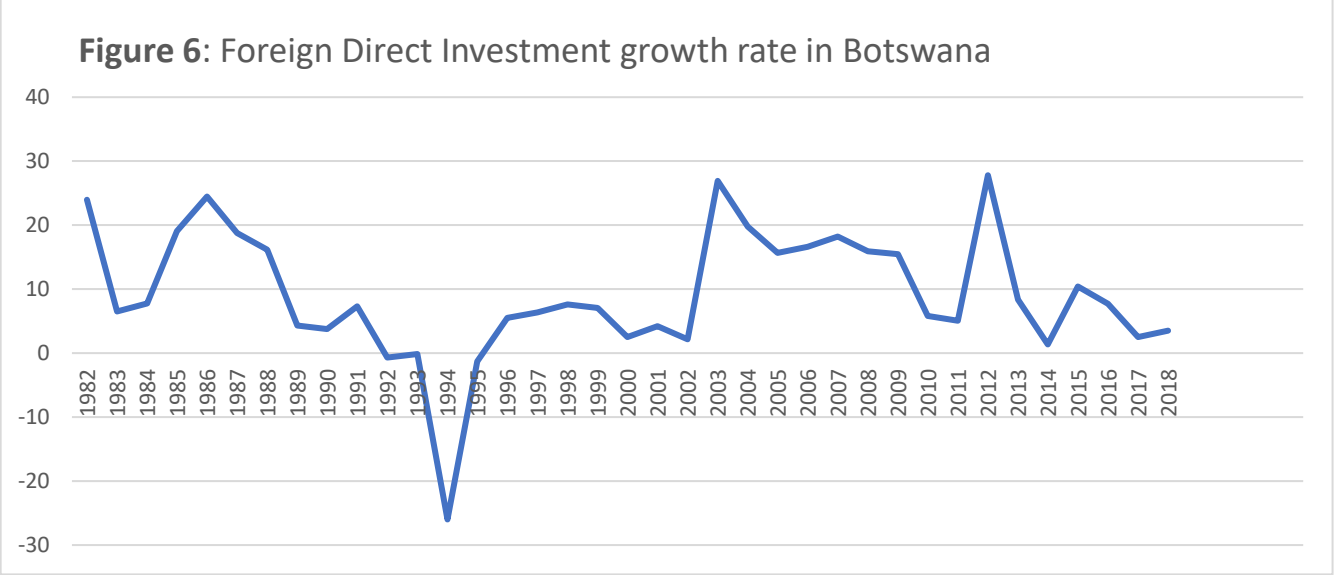
4.2.4 Trade openness growth in Botswana



Source: World Development Indicators, 2018

Figure 5 shows that trade openness has been slow and gradual since 1982. However, the was up shoot in trade openness in 1998 (125.18%), following the adoption and subsequent of the implementation of a number. of policies aiming to broaden the industrial base, such as the National Trade Policy (1997) and the National Industrial and Economic Diversification Drive. The positive effect of the delivery of the National Trade Policy (1997) and intensification of the economic diversification drive contributed to trade openness increasing exponentially in 2001 to 319.24%. The bulk of this increase emanated from the tourism sector, which was promoted as the second engine of growth after the mining sector.

4.2.5 FDI growth rate in Botswana



Source: IMF Financial Statistical Tables, 2018

Figure 6 shows that though Botswana FDI inflows has been fluctuating since 1982 it tended to increase through 2003 -2012 period ending at 3.5% in 2018. For example, Inflows of foreign direct investment(FDI) to Botswana increased by 10.40% in 2015 from the previous year and then declined to 3.5% in 2018, in line with the weaker world economy and poor commodity prices. The general trend for FDI in Botswana has been dependence to developments in the minerals sector.

4.3 Econometric Model Results for Botswana

Prior to testing the estimated regression equation 1, the stationarity of the models variables was determined. The was to ensure that no spurious regression existed. Determination of the stationarity entailed conducting a Unit Root test for all the variables in the regression equation 1.

The Unit Root test for the regression equation 1 was conducted using the Augmented Dicky Fuller (ADF) technique, with the aid of the statistical program STATA. The statistical program STATA, inter alia, as part of the testing converts the estimated regression equation variables into log formats and automatically determines the optimal log length following using the Schwarz Bayesian Information Criteria(SBIC).

The Unit Root were estimated at order zero I (0) and order one I (1) respectively. Order one I (1) is the Null hypothesis that the variable under consideration has a Unit Root or in not

stationary, while order zero I (0) is the Alternative hypothesis that the variable under consideration is stationary.

The Null Hypothesis is rejected if the absolute value of the computed ADF tests exceeds the absolute critical value at 5% level of significance. In other words, the Alternative hypothesis that the variable under consideration is Stationary is accepted.

The results of the UNIT ROOT tests for all variables are presented in table 2 below:

Table 2: ADF Unit Root Test Results at first order I (0)

	At level				**Status**
	Test	**1%**	**5%**	**10%**	
Real GDP growth(Y)	4.407	4.288	3.560	3.216	stationary
Real exports growth(X)	3.928	4.297	3.564	3.218	Stationary
Real imports growth(M)	3.998	4.297	3.564	3.218	Stationary
Trade openness(T)	6.116	4..297	3.564	3.218	Stationary
Foreign Direct Investment growth(FDI)	4.023	4.288	3.560	3.216	Stationary

According to table 2 above;

For the annual GDP growth rate, the absolute value of the ADF test statistic is greater than the 5% level of significance. This means that the null hypothesis that the annual GDP growth has a Unit root (is non-stationary) is rejected in favour of the Alternative hypothesis. This means that the annual GDP growth rate variable is stationary.

Similarly, for the annual exports growth rate, the absolute value of the ADF test statistic is greater than the 5% level of significance. This means that the annual export growth rate is stationary.

For the annual import growth rate, the absolute value of the ADF test statistic is greater than the 5% level of significance. This means that the annual import growth rate is stationary.

For the annual trade growth rate, the absolute value of the ADF test statistic is greater than the 5% level of significance. This means that the annual trade growth rate is stationary.

For the annual Foreign Direct Investment growth rate, the absolute value of the ADF test statistic is greater than the 5% level of significance. This means that the annual FDI growth rate is stationary.

Based on the findings of the Unit Root tests, all the model variables are confirmed to be all integrated of the order zero I (0). In other words, the null the null hypothesis that the

all model variables have a Unit root (is non-stationary) is rejected in favour of the Alternative hypothesis.

These results, further confirms that none of the variables model are integrated of the order two I (2). This means that the Bound test for co-integration for all the stationary variables has to be conducted.

4.3.1 Bounds Test for Co-Integration

Once the unit root tests had been completed and the variables established to be stationary, the ARDL bounds test for co-integration was undertaken. The purpose of the bound test for co-integration was to determine if there was short-run and long run relationship between the endogenous and exogenous variables. The optimal lags of the variables were selected by the Akaike Information Criterion(AIC) method because of the small sample size of this study.

To determine co-integration, the computed F- statistic was compared with the upper values at the 5 % level of significance. If the calculated F-Statistics was greater than the upper values at the 5% level of significance, for a variable, then co-integration was established. Subsequently, they would be need to estimate the Error Correction Model(ECM) for the long run. Conversely, if the computed F-statistics were less than the upper values of the 5% level of significance, for a variable, there was no co-integration. This called for the investigation of the short-run relationship.

Table 3 below presents the results of the Bounds tests for co-integration

Table 3: Bounds Test for Co-Integration Results

Dependent Variable	F Statistics	[I_1] L_05	Cointegration	Estimation
Real GDP growth	6.878	4.01	Yes	Estimate long run ECM
Real exports growth	4.538	4.01	Yes	Estimate Long run ECM
Real imports growth	3.122	4.01	No	Estimate ARDL short-run model
Trade openness	6.931	4.01	Yes	Estimate Long ECM
FDI growth	3.189	4.01	no	Estimate ARDL short run model

Table 3 results above, depict that the computed F-Statistic for each of the real GDP growth, real exports and real trade growth is greater than the upper values at 5 % level of significance. This signifies the existence of a significant long-run relationship between the

variables. This means that all variables jointly contribute to the determination of economic growth. Consequently, the Null Hypothesis (H0: b1i=b2i=b3i=b4i=b5i=0) of no co-integration is rejected in favour of the Alternative Hypothesis (H1; $b1i \neq b2i \neq b3i \neq b4i \neq b5i \neq 0$). Subsequent to the above results, the Error Correction Model(ECM) was employed to investigate the long-run relationship and the speed of adjustment to an equilibrium state by using the ECM.

The F-statistic computed for real imports growth and FDI growth is less that the upper values at the 5% level of significance. This means that the Null Hypothesis (H0: b1i=b2i=b3i=b4i=b5i=0) of no co-integration at 5% level of significance. It confirms the existence of a short-run relationship among the variables by accepting the Alternative Hypothesis (H1; $b1i \neq b2i \neq b3i \neq b4i \neq b5i \neq 0$). Since the results indicate the existence of a short-run relationship among variables, the ARDL model was employed to investigate the short-run relationship.

4.3.2 Long-run ARDL Relationship Analysis

Following the detection of co-integration relationship between real GDP growth, real exports growth and FDI growth in Botswana, long run ARDL relationship analysis was undertaken. The results of the analysis are tabulated in table 4 below;

Table 4: Long-run ARDL Relationship Analysis

Dependent	**Coefficient**	**Standard Error**	**t-statistic**	**P-values**
Real exports growth	0.2092438	0.0807775	2.59	0.015
Real imports growth	0.0449015	0.0647142	0.69	0.493
Trade openness	-0.0081297	0.0110982	-0.73	0.470
Foreign Direct Investment growth	-0.0308313	0.0627981	-0.49	0.627

To establish whether the variables in the model are significantly or insignificantly in the long-run, the computed P-values are compared with the 5% level of significance. For example, if the computed P-values of a variable is greater than the 5% level of significance, then the relationship is insignificant in the long-run. Conversely, if the computed P-values of a variable is less than the 5% level of significance, then the relationship is significant in the long-run.

The long run results in table 4, above indicates a positive relationship between real exports growth, real imports growth, and the real GDP growth, while the trade openness and foreign direct investment growth rate exhibit a negative relationship with real economic growth.

The real exports growth has a positive and significant effect in the long run on the real GDP growth. This is because the computed P-values of exports growth is less than 0.05 level of significance. An increase of exports by 1% will result with real GDP increasing by 0.2092438%. Furthermore, this finding is consistent with trade theory and is supported by other studies such previously undertaken by scholars such as Heydariyan (1996), Gholami (2000), Bader S.S. Hamdan (2016), Kalu et. al. (2016) and Keho and Wang (2017), whose study results also revealed a positive and significant effect in the long run on the real GDP.

Real imports growth has a positive and statistical insignificant effect on real GDP growth in the long-run. This because the computed P-values of real imports growth greater than the 5% significance level. An increase of 1% in imports will result with an increase in GDP growth by 0.0449015 %. This result is similar to the findings of Kalu et.al (2016) who used the Classical Linear Regression Model (CLRM) to assess the relationship between trade liberalisation, exports, imports and economic growth in Nigeria for the period 1991 – 2013. Although the empirical results revealed that exports had a significant positive effect on economic growth, with respect to imports it revealed a positive and an insignificant effect on economic growth.

Trade openness has a statistical insignificant negative effect on real GDP growth in the long-run. This is because the computed P-values of Trade openness is greater than 0.05 level of significance. An increase of trade openness by 1% will result with annual GDP decreasing by 0.0081297%. This seemingly surprising result goes against the economic theoretical expectation of a positive and significant effect of trade openness on economic growth. Furthermore, the result is opposite to previous findings of researchers such as Sarkar (2005). By analysing the effect of trade openness of the real GDP capita of India and South Korea, Sarkar (2005) found a positive but insignificant relationship in the long run.

Foreign Direct Investment growth has a statistical insignificant negative effect on real GDP growth in the long-run. This is because the computed P-values of Foreign Direct Investment is greater than 0.05 level of significance. An increase of Foreign Direct Investments by 1% with results with real GDP decreasing by 0.0308313%. This result went against the theoretical expectation of a positive impact of foreign direct investment on economic growth. However, it in line with results obtained by other researchers on the relationship between Foreign Direct Investment and economic growth. For example, Falki (2009) investigated the effect of foreign direct investment on economic growth in Pakistan during

the period 1980 – 2006 and found a negative and statistically insignificant relationship between FDI and economic growth.

Following the completion of the long-run ARDL relationship analysis, the estimated regression equation is re-stated as follows:

Real GDP growth = -1.077221 + 0.2092438 ***Exports*** + 0.0449015 ***Imports*** -0.0081297 ***Trade Openness*** -0.0308313 ***FDI*** *……..(2)*

In equation (2) above, the co-efficient of the lagged error correction term ECM_{t-1} long run model was found to be negative and statistically significant because the computed ECM_{t-1} P-value (0.00) is less than 0.05 significance level. This means that the equilibrium in the long-run will be adjusted at the speed of 1.077221.

Table 5: Short-run ARDL Relationship Analysis

Dependent Variable		Coefficient	Standard Error	t-statistic	P-values
Real exports growth	D1	0.359843	0.0925713	0.39	0.700
Cons		-7.418224	4.562156	-1.63	0.115
ECM		-1.077221	0.1888643	-5.70	0.000

The short run relationship analysis results are depicted in table 5 above. In the short-run the lagged real exports growth variable was found to have a positive and insignificant effect on real economic growth at the 5% level of significance ($p > 0.05$). This implies that a 1% increase in exports in the short-run, will result with an increase of real GDP growth by 0.359843 %.

The fore-going analysis, overall reveals that real exports growth has a positive and insignificant effect on the real GDP in the short run and a positive and significant effect on the real GDP in the long run.

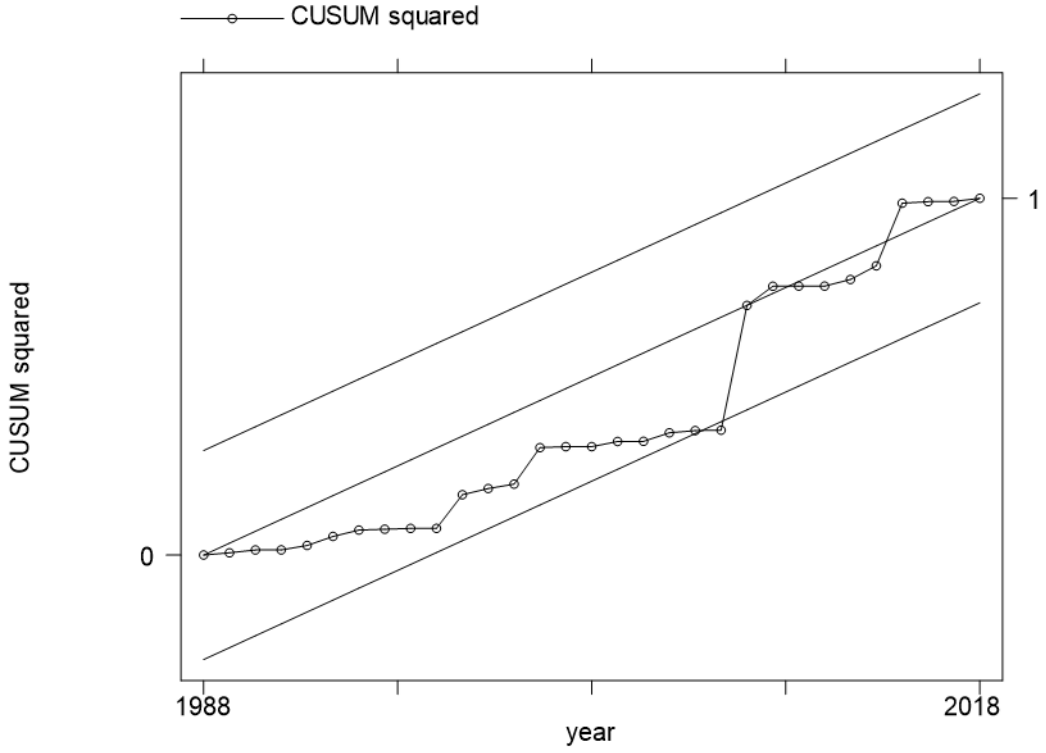
4.3.3 Diagnostic Test

Regression models which use time-series data are used for forecasting. For forecasting to be valid, the underlying time series should be stationary and should be free of serial correlation, spurious regression, multicolinearity and hetersdasticity and model instability. Therefore, tests for all these should precedes forecasting. In the event that they are found to be afflicted with any of these problems corrective measures to be put in place to ensure the problems were solved.

Durbin Watson t-statistics tests (t-2.123548 >0.05) revealed the absence of serial correlation, whereas a White Heteroscedasticity test further confirmed the absence of heteroscedasticity (P = 0.4204 > 0.05).

To test the stability for the estimated regression, the Cumulative Sum of recursive residuals (CUSUM) test was conducted, which confirmed the stability of the model. The stability test for the estimated regression model was found to be within boundary of 0.05 level of significance, meaning that the model is stable, as depicted in the figure below:

Figure: 6: Stability Test



CHAPTER 5

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of the Study

Botswana continue to make concerted efforts to trade liberalise its economy, with the aim of positively boosting its economic growth. With an increased economic growth, Botswana hoped to address some of its socio-economic challenges such as unemployment, inequality and food insecurity.

This study, therefore, investigated the relationship between trade liberalisation and economic growth in Botswana covering the period 1982 to 2018. In carrying out the empirical analysis a multi-variable regression model was developed. The estimated multi-variable regression made use of five variables of interest. These were; real GDP growth, real exports growth, real imports growth, trade openness and foreign direct investment growth. The real GDP growth(Y) was the endogenous variable, while real exports growth(X), real imports growth(M), trade openness(T) and foreign direct investment growth(FDI) were exogenous variables.

This study employed both descriptive and econometric analysis. Tables and figures were used to graphically demonstrate the trends of all variables of interest during the period under review.

The econometric analysis was carried out in three stages. The first stage was to determine the order of integration of the variables using the Augmented Dicky – Fuller(ADF) technique. All the model variables were found to be stationary.

The second stage entailed carrying out an Auto-regressive Distributed Lag (ARDL) bound test to co-integration along with the Error Correction Model (ECM), in order to analyse the short-run and long run relationship between the endogenous and exogenous variables. The F-statistics test confirmed the long run relationship between the variables and the ECM generated the expected sign at 5% level of significance.

The third stage, entailed establishing the goodness of fit of the selected econometric model. ARDL model. This entailed conducting several diagnostic tests and model stability tests which were inclusive of normality, heteroscedasticity, and serial correlation. The Stability Test was conducted by employing the Cumulative Residual (CUSUM) and the Cumulative sum of squares of recursive residuals (CUSUMSQ). All these tests confirmed the stability

of the model thus validating its applicability in empirically analysing the effects of trade liberalisation on economic growth in Botswana.

5.2 Conclusion

The empirical results of the study are consistent generally with previous research findings of the existence of a positive effect of trade liberalisation and economic growth.

The results depict that trade liberalisation policies and strategies gave a boast to trade which in turn stimulated the economic growth of Botswana. Between 1982 – 2018, GDP growth averaged 5.90%, exports growth averaged 52.81%, imports growth averaged 49.72%, Trade openness averaged 26.43% and foreign direct investment growth averaged 9.20%. In general, all these variables experienced an upward trend.

In particular, the study results revealed that the existence of a positive relationship between real exports growth, real imports growth, and the real GDP growth, while the trade openness and foreign direct investment growth rate exhibit a negative relationship with real economic growth.

The real exports growth has a positive and significant effect in the short and long run on the real GDP growth. This result demonstrate that exports are an engine of growth in Botswana. This notwithstanding Botswana needs to deepen this and this can only happen if Botswana undertakes policy reforms related beneficiation of its products before they are exported. Botswana's main exports are predominantly primary products, particularly diamonds, copper and nickel. Adding value to these products through beneficiation would not only increase their value, volume but also boost the country's foreign exchange earning potential.

Given that the downside of Botswana's heavy dependence on the mineral sector was more pronounced during the 2008 Global Financial Crisis (GFC), when economic growth contracted by -7.65%, owing to the reduced demand for diamonds and other minerals (the principal exports) globally, it is imperative that Botswana undertakes policy reforms related to diversifying its economy away from the mining. Possible areas of diversification, could include encouraging private sector investment and committing more resource to promotion of tourism.

Real imports growth has a positive and statistical insignificant effect on real GDP growth in the long-run. The insignificant positive effect of imports growth on real GDP implies that imports are largely ineffective in contributing to Botswana's economic growth. Botswana

major imports are inclusive of textile products, food products and heavy machinery and equipment used in mining. Therefore, to promote imports, tariff and non-tariffs barriers on trade, particularly on commodities that are necessary for the development of the country should be reviewed with a view to reducing them.

Trade openness has a statistical insignificant negative effect on real GDP growth in the long-run. The insignificant negative effect of trade openness on real GDP implies that trade openness is largely ineffective in contributing to Botswana's economic growth. Accordingly, Botswana must control trade openness, particularly importation of consumption goods, which could easily be produced in Botswana, such as textiles products and basic food products such as maize and other cereals. Further promotion of trade openness must be complemented by policies aimed at encouraging the financing of new investment, private sector investment in agriculture, promotion externally of local produced goods and in general increasing productivity and competitiveness of the country in the global world.

Foreign Direct Investment growth has a statistical insignificant negative effect on real GDP growth in the long-run. The fact that FDI does not positively contribute to economic growth, is an indication that previous efforts of Botswana government to attract foreign direct investment inflows have not yielded the desired results. This could be partly attributable to a relatively unfriendly business environment characterized by poor physical infrastructure and a small market. Botswana will have to undertake policy reforms related to attraction of foreign investment and promotion of its exports.

5.3 Policy Recommendations

A number of key messages emerge from the diagnostic review of Botswana's implementation of trade liberalisation policies and strategies, which necessitates the carrying out of policy reforms in the following areas:

1. Botswana undertakes policy reforms related to beneficiation of its primary export products. Adding value to these products through beneficiation would increase their export value, volume and boost the country's foreign exchange earning potential.
2. Botswana undertakes policy reforms related to diversifying its economy away from the mining. Possible areas of diversification, could include encouraging private sector investment in areas other than mining and committing more resource to promotion of tourism.

3. Botswana major imports are textile products, food products and heavy machinery and equipment used in mining. Therefore, to promote imports, tariff and non-tariffs barriers on trade, particularly on commodities that are necessary for the development of the country should be reviewed with a view to reducing them.
4. Promotion of trade openness must be complemented by policies aimed at encouraging the financing of new investment, private sector investment in agriculture, promotion externally of local produced goods and in general increasing productivity and competitiveness of the country in the global world.
5. Botswana should undertake policy reforms related to attraction of foreign investment and promotion of its exports.

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World Bank Indicators, 2018

APPENDIX

year	Real GDP growth	Imports/GDP	Exports/GDP	trade/GDP	FDI
1982	8.44	85.25	54.83	16.60	23.96
1983	11.90	80.54	63.82	12.13	6.52
1984	13.61	70.90	61.84	9.75	7.77
1985	9.23	63.34	72.11	14.68	19.09
1986	7.34	62.01	69.06	17.86	24.45
1987	8.22	58.01	87.13	17.65	18.77
1988	12.22	53.95	59.55	9.29	16.15
1989	13.10	55.99	63.82	3.60	4.29
1990	7.13	52.42	52.89	14.78	3.76
1991	7.42	50.38	52.78	13.90	7.31
1992	3.00	46.23	46.62	30.94	-0.67
1993	1.92	42.81	46.20	46.45	-0.13
1994	3.63	39.66	48.69	24.34	-26.00
1995	7.03	43.24	50.86	13.38	-1.28
1996	5.83	37.11	48.77	14.73	5.52
1997	8.03	45.76	58.63	13.01	6.34
1998	0.72	46.64	43.74	125.18	7.61
1999	9.67	40.88	51.60	9.57	7.04
2000	2.01	41.31	53.40	47.21	2.51
2001	0.25	35.52	44.47	319.24	4.20
2002	6.07	35.54	46.72	13.55	2.15
2003	4.63	33.66	45.52	17.12	26.91
2004	2.71	40.24	49.60	33.20	19.79
2005	4.56	34.70	53.06	19.26	15.66
2006	8.36	33.36	52.50	10.27	16.61
2007	8.28	43.29	54.97	11.87	18.24
2008	6.25	52.81	50.11	16.48	15.93
2009	-7.65	53.22	37.92	-11.91	15.45
2010	8.56	51.91	41.26	10.88	5.82
2011	6.00	54.01	47.49	16.92	5.08
2012	4.50	61.83	45.24	23.79	27.80
2013	11.30	61.74	58.96	10.68	8.35
2014	4.10	55.45	58.50	27.79	1.34
2015	-1.70	56.21	50.02	-62.49	10.40
2016	4.30	44.23	52.54	22.50	7.72
2017	2.90	36.38	39.53	26.18	2.51
2018	4.50	39.28	39.44	17.49	3.50

Source: World Bank Development Indicators, 2018 and IMF Financial Statistical tables, 2018

Econometric Regression Model Results for Botswana

Variable	Obs	Mean	Std. Dev.	Min	Max
gdp	37	5.901892	4.285467	-7.65	13.61
imports	37	49.72459	12.56151	33.36	85.25
exports	37	52.81595	9.833425	37.92	87.13
trade	37	26.42892	55.29642	-62.49	319.24
fdi	37	9.201892	10.05896	-26	27.8

long run

ARDL(1,0,1,0,0) regression

Sample: 1983 - 2018	Number of obs	=	36
	R-squared	=	0.6068
	Adj R-squared	=	0.5255
Log likelihood = -94.575534	Root MSE	=	3.7295

D.gdp	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
ADJ						
gdp						
L1.	-1.077221	.1888643	-5.70	0.000	-1.463492	-.6909504
LR						
imports	.0449015	.0647142	0.69	0.493	-.0874538	.1772569
exports	.2092438	.0807775	2.59	0.015	.0440352	.3744524
trade	-.0081297	.0110982	-0.73	0.470	-.030828	.0145687
fdi	-.0308313	.0627981	-0.49	0.627	-.1592679	.0976053
SR						
exports						
D1.	.0359843	.0925713	0.39	0.700	-.1533452	.2253138
_cons	-7.418224	4.562156	-1.63	0.115	-16.74888	1.912432

```
. * Serial Coorelation
. estat dwatson

Durbin-Watson d-statistic (12, 35) = 1.910442

. estat bgodfrey, lag (2)


Breusch-Godfrey LM test for autocorrelation
---------------------------------------------------------------------------
    lags(p) |          chi2               df                 Prob > chi2
-------------+-------------------------------------------------------------
       2     |          11.834              2                    0.0027
---------------------------------------------------------------------------
                        H0: no serial correlation

.  *Heterdasity
. estat imtest, white

White's test for Ho: homoskedasticity
         against Ha: unrestricted heteroskedasticity

         chi2(34)      =     35.00
         Prob > chi2 =     0.4204

Cameron & Trivedi's decomposition of IM-test

---------------------------------------------------
                     Source |       chi2     df      p
---------------------+-----------------------------
  Heteroskedasticity |      35.00      34    0.4204
            Skewness |        5.52      11     0.9031
              Kurtosis |        1.31       1    0.2520
---------------------+-----------------------------
                   Total |      41.84      46    0.6472
```