

***“It's not you, it's me”*: An analysis of Multilateral Bank Finance in  
Botswana**

**A Minor Dissertation**

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by

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## **DEDICATION**

There is an old African adage that says, “it takes a village to raise a child”. I put forward that anything in life that is worthwhile, takes a village.

I dedicate the completion of this dissertation to my village. To my beloved husband Onalenna, and our precious gifts being our children Imaani, Eliana, Asher Keseabetswe (the bun that was baking in my oven all through the development of this study), and to my mommy Gertrude. You will forever be my reason ‘why’.

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## ABSTRACT

Multilateral Development Bank debt is hailed for its positive relationship to economic growth, represented by Gross Domestic Product. Botswana has a long history of demonstrating many positive attributes at the macro and microeconomic level that would typically attract multilateral bank funding; however, the country maintains one of the lowest debt-to-GDP ratios on the continent. This study investigates whether there is a direct relationship between Multilateral bank finance and key macro indicators in Botswana. Using Quantitative research methodology, the research uses annual time series data from 1986 to 2023, and estimation techniques such as Autoregressive Distributed Lag (ARDL) cointegration model, Unit Root, Error Correction Model and other diagnostic tests.

The study's findings reveal a nuanced relationship between Botswana's macroeconomic conditions and its MDB debt accumulation. In the long run, trade balances significantly impact external borrowing, while economic growth, foreign exchange reserves, and government expenditure remain insignificant. In the short run, economic growth and trade balances exhibit statistically significant effects on borrowing, whereas foreign exchange reserves and government expenditure remain insignificant. These findings reinforce the role of external trade conditions in Botswana's debt accumulation while highlighting the country's cautious fiscal approach.

Unlike many developing nations where economic growth, public expenditure, and foreign reserves directly influence external borrowing, Botswana's multilateral bank financing patterns are primarily shaped by its trade balance and counter-cyclical debt policies. The findings of this study have important policy implications and recommendations for Botswana, which are targeted towards diversification of its export base, efficient use of its resources, including reserves, and finally, better negotiated positions with MDB loan terms given the country's strong credit rating. Botswana's approach to multilateral bank finance reflects a well-managed and prudent economic strategy that balances the need for external support with long-term fiscal sustainability.

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## LIST OF ACRONYMS AND ABBREVIATIONS

AfDB	African Development Bank
AGM	Annual General Meeting
ARDL	Autoregressive Distribution Lag
BoB	Bank of Botswana
BOP	Balance of Payments
ECM	Error Correction Model
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GEXP	Government expenditure
GoB	Government of Botswana
IMF	International Monetary Fund
MDB	Multilateral Development Banks
OPEC	Organisation of the Petroleum Exporting Countries
SADC	The Southern African Development Community
SDG	Sustainable Development Goals
SSA	Sub-Saharan Africa
TFER	Total Foreign exchange reserves
UN	United Nations
USD	United States Dollars

# CHAPTER 1: INTRODUCTION

## 1.1. Background of the study

In the wake of the COVID-19 pandemic, public debt management has become an increasingly prominent issue. For instance, in May 2023, the United States Congress faced a critical decision on whether to raise or suspend the federal debt ceiling. Failure to act would have resulted in a government default, potentially triggering a global recession (AP News, 2023). Similarly, many economists have warned that Africa is on the brink of a mounting debt crisis, as evidenced by Ghana's recent request for a bailout and Zambia's ongoing debt restructuring negotiations (Abeyrathne & Kamburawala, 2023; Nondo & Kumah-Abiwu, 2022; Coulibaly et al., 2019). China's increasing role in infrastructure development and debt financing on the continent (Carmody et al., 2022) further necessitates a critical assessment of national development finance strategies.

Public debt is often perceived as being closely linked with economic growth (Ehikioya et al., 2020). However, Botswana presents a notable divergence from this trend, having historically maintained relatively low levels of sovereign debt. Since gaining independence and discovering diamonds in the 1960s, Botswana has successfully transitioned from a low-income, agriculture-based economy to a middle-income country (Makoni, 2015; Siphambe et al., 2005). As the world's second-largest diamond producer, Botswana is also widely acknowledged for having avoided the "Dutch Disease" or "resource curse" (Pegg, 2009). Nonetheless, its heavy reliance on diamond revenues presents ongoing risks, reinforcing the urgent need for economic diversification (Makoni, 2015). While economic diversification efforts require significant investment, the question arises: Is debt the most viable financing tool?

The growing presence of Multilateral Development Banks (MDBs) and Regional Development Banks suggests that debt remains a prominent means of development finance. Kellerman (2018) notes that since 1945, new MDBs have emerged at an average rate of one every three years. This growth has been driven by dissatisfaction with the bureaucratic and conditional lending practices of traditional multilateral institutions. As at December 2023, Botswana external debt as a percentage of GDP was 10.5% with GDP recorded at an estimate USD19.4 billion according to the World Bank Database. This is relatively low in contrast to Mozambique with a GDP of USD20.4 billion and external debt as a percentage of GDP closing at 66.4%. Table 1

below demonstrates Botswana's historically low levels of debt in contrast to a select number of African countries where data was readily available.

This study aims to examine Botswana's engagement with MDBs to better understand why, despite exhibiting many of the favourable macroeconomic indicators that attract such financing, it continues to maintain low debt levels. Furthermore, the study explores whether there exists an "optimal" level of debt that can stimulate economic growth without fuelling unsustainable debt accumulation.

## **1.2. Research Problem and Questions**

Multilateral Development Banks not only provide critical funding for infrastructure and other national development objectives, but also support policy reform, institutional capacity building, and improvements in project quality and scale (Bhattacharya et al., 2018). According to Engen and Prizzon (2018), MDBs are further distinguished by their mandate to promote economic development aligned with the Sustainable Development Goals (SDGs) and Agenda 2030.

Africa remains a key destination for MDB investment. The continent's substantial funding needs have spurred the growth of MDBs and Regional Development Banks (RDBs). Structural demographic shifts, which include a burgeoning youth population (Buiter, 2002), rising levels of female education (Bhattacharya et al., 2018), and a generally favourable external environment (Rodrik, 2016), suggest promising long-term growth prospects.

Botswana, too, is part of this growth narrative. With its remarkable economic performance that is driven largely by the diamond mining sector, which contributes over 50% of GDP, the country has transitioned from low- to upper-middle-income status, even outperforming global peers between 1965 and 1998 (Makoni, 2015; Siphambe et al., 2005; Acemoglu et al., 2001). Recent developments reinforce this trajectory: the 25-year diamond mining rights agreement signed in July 2023 between the Government of Botswana (GoB) and De Beers is expected to extend mineral-led growth. A 2022 Reuters article reported record diamond sales of USD 4.6 billion, as global buyers turned away from Russian diamonds following the Russia-Ukraine conflict. By contrast, in 2024, according to Bank of Botswana, Diamond sales declined by 46% in 2024, recording USD 1,8 billion in sales for the year indicative of the global downturn in the diamond market that commenced from mid 2023.

To pivot away from mineral dependency, the GoB is implementing an Economic Transformation Plan aimed at propelling the country to high-income status. A Government Order Paper dated 5 December 2022, along with a budget statement by the then Minister of Finance, Peggy Serame, proposed BWP 64 billion in development spending over two years—a record high. The 2023 national budget estimated revenues and grants at BWP 79.8 billion against projected expenditures of BWP 87.4 billion, resulting in a deficit of BWP 7.59 billion. This raises a central question: how will Botswana finance this funding gap?

Despite macroeconomic strengths that are generally conducive to attracting multilateral financing, such as political stability, natural resource endowments, and openness to trade (Lipsey, 2004; Ali et al., 2018), Botswana maintains one of the lowest debt-to-GDP ratios in Africa. Tables 1 and 2 provide comparative external debt metrics for selected African countries, highlighting Botswana’s conservative debt profile.

**Table 1: Total External Debt Stock for selected African Countries (in US\$, in millions)**

Country Name	YR 2014	YR 2015	YR 2016	YR 2017	YR 2018	YR 2019	YR 2020	YR 2021	YR 2022	YR 2023
Botswana	2,490	2,223	2,121	1,732	1,774	1,564	1,603	1,997	2,003	2,079
Algeria	5,521	4,671	5,463	5,707	5,710	5,492	5,178	7,379	7,129	7,315
Angola	45,924	48,772	57,434	58,746	61,791	62,292	65,405	66,020	60,446	57,032
Cameroon	5,766	7,305	7,890	10,050	11,005	12,929	14,723	15,377	15,110	15,332
Central African Republic	662	691	695	722	786	850	901	1,120	1,015	1,021
Djibouti	943	1,227	1,702	2,267	2,321	2,553	2,900	3,207	3,170	3,429
Egypt, Arab Rep.	41,773	49,874	69,189	84,587	99,457	114,910	132,539	145,998	163,092	168,062
Eswatini	537	450	765	873	766	834	957	1,179	1,248	1,241
Ghana	28,517	31,307	34,861	33,835	35,613	32,595	40,594	43,805	42,672	43,742
Malawi	1,667	1,721	1,847	2,162	2,266	2,427	2,943	3,198	3,340	3,604
Mauritius	12,759	10,302	10,444	10,630	11,234	12,361	12,402	14,700	17,653	19,252
Mozambique	34,419	38,032	42,831	45,974	49,810	54,212	58,664	62,668	64,384	66,848
Nigeria	46,672	45,025	43,736	65,143	69,455	81,375	87,647	96,310	103,100	102,482
Rwanda	2,910	3,452	4,319	5,076	5,681	6,515	8,194	9,318	9,690	11,384
South Africa	149,318	127,741	144,048	175,014	180,184	190,738	175,417	169,438	171,723	165,787
Tanzania	16,234	18,160	19,453	21,437	22,372	24,184	25,566	28,526	30,379	34,598
Uganda	8,651	9,571	10,088	11,680	12,329	13,993	17,236	19,974	20,407	19,393
Zambia	9,676	12,339	15,792	23,779	24,659	29,392	29,546	26,939	28,317	29,029
Zimbabwe	8,360	9,707	11,527	12,574	12,689	12,249	12,742	13,818	13,830	14,213

Source: World Bank Database 10 years

**Table 2: Total External Debt for Selected African Countries as a % of GDP at current prices**

Country Name	YR 2014	YR 2015	YR 2016	YR 2017	YR 2018	YR 2019	YR 2020	YR 2021	YR 2022	YR 2023
Botswana	17%	16%	14%	11%	10%	9%	11%	11%	10%	11%
Algeria	3%	2%	3%	3%	3%	3%	3%	4%	3%	3%
Angola	34%	54%	109%	80%	78%	88%	135%	99%	58%	67%
Cameroon	16%	23%	23%	28%	28%	33%	36%	34%	34%	31%
Central African Republic	35%	41%	38%	35%	35%	38%	39%	44%	43%	40%
Djibouti	43%	51%	65%	82%	80%	83%	92%	95%	89%	88%
Egypt, Arab Rep.	14%	15%	21%	34%	38%	36%	35%	34%	34%	42%
Eswatini	12%	12%	21%	20%	16%	18%	23%	25%	26%	27%
Ghana	33%	63%	62%	56%	53%	48%	58%	55%	58%	54%
Malawi	19%	19%	23%	24%	23%	22%	25%	26%	27%	28%
Mauritius	98%	86%	83%	78%	76%	86%	109%	128%	137%	137%
Mozambique	20%	235%	355%	347%	332%	349%	412%	388%	341%	319%
Nigeria	50%	9%	11%	17%	16%	17%	20%	22%	22%	28%
Rwanda	35%	40%	50%	55%	59%	63%	81%	84%	73%	79%
South Africa	39%	37%	45%	46%	44%	49%	52%	40%	42%	44%
Tanzania	32%	38%	39%	40%	39%	40%	39%	40%	40%	44%
Uganda	27%	30%	35%	38%	37%	40%	46%	49%	45%	40%
Zambia	34%	58%	75%	92%	94%	126%	163%	122%	97%	105%
Zimbabwe	43%	49%	56%	25%	37%	48%	47%	51%	42%	40%

**Source:** Authors' calculations using World Bank Data for 10 years

The table demonstrates that Botswana has one of the lowest proportions of debt relative to its economic size among the selected countries. Ehikioya et al, 2020; Shayanewako, 2013; Kur et al, 2021 suggest that debt can be a key driver in driving growth, and prudent debt management can drive economic growth, particularly for those countries with anticipated high growth potential. On the contrary, much literature details the concerns around a looming African debt crisis, exacerbated by the wake of the COVID-19 pandemic (Carmody et al, 2021; Chirume, 2022; Atingi-Ego et al, 2021). Why does Botswana limit external debt as a funding mechanism? Is there an optimal debt threshold that can foster growth without undermining fiscal stability? Do its substantial foreign exchange reserves influence debt-related decisions?

Recent literature provides some insights. Cormier (2021), in a comparative study of debt management offices (DMOs) in Botswana and South Africa, finds that political interference limits the DMOs' ability to influence both debt volumes and financing sources. Other studies (Chiwira, 2015; Makoni, 2015) focus on firm-level foreign direct investment and recommend greater private sector participation, but they neglect the state's role in providing foundational infrastructure. Makoni also argues that FDI is not a stable long-term financing option for major projects. Kur et al. (2021) assess debt impacts on sectoral performance but stop short of exploring debt accumulation drivers or sustainability.

These gaps underscore the need for further investigation into Botswana's debt strategy, particularly its reluctance to accumulate multilateral debt despite clear developmental aspirations.

### **1.3. Research Question**

Based on the foregoing, this study seeks to answer the following question:

- What is the effect of macroeconomic conditions on MDB debt financing in Botswana?

### **1.4. Research objectives and/or hypotheses**

The primary objective of the study is to analyse the low levels of multilateral debt accumulation in Botswana. Specifically, it seeks:

- To examine the effect of macroeconomic conditions on MDB debt financing in Botswana.

### **1.5. Scope and Justification of the Study**

The need for Botswana to diversify its sources of income is a recurrent theme in most economic analyses of the country. Successive national development plans have consistently emphasised this need (Makoni, 2015). While mono-resource economies such as oil-producing countries sometimes generate substantial revenues, literature largely supports economic diversification as a basis for long-term stability.

The government's current development ambitions project spending exceeding BWP 65 billion and a fiscal deficit of approximately BWP 7 billion. The 2023 national budget identifies key revenue sources as tax receipts, mining revenues (sales and royalties), and customs and excise collections. However, relying solely on these may be insufficient. Bhandari et al. (1990) challenge the assumption of a perfectly elastic supply of sovereign debt, instead proposing an upward-sloping supply curve that incorporates sovereign risk. This model helps policymakers assess how much debt the country can realistically incur.

Understanding both the demand-side and supply-side factors that affect access to external financing will assist Botswana's debt management office in designing informed strategies for financing the current and future deficits. In this regard, the study builds on the work of Moreputla and Moffat (2017), who examined the interaction between national savings and debt. While their analysis focused on the impact of external debt, this study takes a different approach by analysing the drivers of debt accumulation, particularly multilateral debt.

The study offers practical relevance to policymakers and development practitioners. By identifying the variables that influence Botswana's multilateral borrowing, the study supports evidence-based decision-making for effective debt management. Moreover, it offers useful

insights for those assessing the country's creditworthiness, particularly MDBs and international lenders. The findings will also help determine whether the country's fiscal conservatism aligns with developmental needs or represents a missed opportunity to leverage multilateral finance more effectively. Ultimately, this research contributes to the broader discourse on sustainable public finance in resource-rich but fiscally cautious economies. It offers Botswana a framework to navigate the fine line between prudent borrowing and underinvestment in its future growth.

## **1.6. Organisation of the study**

*Chapter 1* introduces the study, presenting the background, research problem, questions, objectives, and justification. *Chapter 2* reviews relevant literature, focusing on multilateral development finance and Botswana's macroeconomic landscape. *Chapter 3* details the methodology, including the research design, data sources, and econometric approach. *Chapter 4* presents and discusses the results of the empirical analysis. Finally, *Chapter 5* concludes with a summary of findings and provides policy recommendations and suggestions for future research. Each chapter contributes incrementally to addressing the core research question regarding Botswana's relationship with multilateral debt and the macroeconomic conditions underpinning this relationship.

## CHAPTER 2: LITERATURE REVIEW

### 2.1. Introduction

This chapter reviews the literature relevant to the study. It begins by defining key concepts and terms that underpin the research. The next section explores the theoretical foundations concerning the interaction between multilateral development bank (MDB) financing and macroeconomic variables, particularly those applicable to Botswana's economic development. The literature also includes empirical studies that offer insights into the drivers of external debt, the role of MDBs, and the challenges faced by countries that engage with them. This sets the context for evaluating Botswana's unique experience with multilateral debt.

### 2.2. Definition of terms and concepts

To frame the analysis and ensure conceptual clarity, this section defines key terms that underpin the study's focus on multilateral development financing and macroeconomic outcomes in Botswana. Given the multidisciplinary nature of the research, which draws on development finance, sovereign debt theory, and macroeconomic policy, it is essential to clearly articulate how central terms are understood within the context of this study. The definitions provided are drawn from both empirical literature and institutional sources and serve to anchor the subsequent discussion in consistent terminology. This section specifically defines Multilateral Development Banks (MDBs), External Sovereign Debt, and the Dutch Disease (or Resource Curse), all of which are fundamental to understanding the mechanisms and implications of external financing in resource-dependent economies such as Botswana.

#### 2.2.1. *Multilateral Development Banks (MDB)*

Delikanli et al. (2018) and Engen and Prizzon (2018) define MDBs as intergovernmental institutions comprising two or more sovereign members. These banks pool financial resources to fund socio-economic development projects that may be deemed infeasible under commercial conditions. MDBs do not accept deposits, pay taxes, or distribute dividends. Instead, they are funded primarily through guaranteed capital commitments from member states and operate independently of central banks (Mendez and Houghton, 2020).

A summary of the largest international and regional development banks is provided in the figures below:

**Figure 1: Largest International Development Banks**

MDB	Year founded, headquarter	Policy priority	Shareholders	Top shareholders	Disbursements FY 2019 (US\$ million)
European Investment Bank (IEB)	1958, Luxembourg, Luxembourg	Innovation and skills, small and medium enterprises (SMEs), infrastructure, environment and climate	28	Germany, France, Italy, UK	56,514.00
International Bank for Reconstruction and Development (IBRD)	1944, Washington DC, USA	Extreme poverty and shared prosperity	189	USA, Japan, China, Germany, France, UK	20,182.00
International Development Association (IDA)	1959, Washington DC, USA	Extreme poverty and shared prosperity	173	USA, Japan, UK, Germany, France	20,000.00
OPEC Fund for International Development (OFID)	2014, Shanghai, China	Energy, transportation, finance, agriculture, water and sanitation, industry, health, telecommunications and education	13	Saudi Arabia, Venezuela, Kuwait, Nigeria, Iran	1,481.00
New Development Bank (NDB)	2014, Shanghai, China	Clean energy, transport infrastructure, irrigation, water resource management and sanitation, sustainable urban development, economic cooperation and integration.	5	Brazil, China, India, Russia, South Africa	915.00
International Fund for Agricultural Development (IFAD)	1977, Rome, Italy	Rural poverty, rural market participation, environmental sustainability and climate resilience	176	USA, Italy, Germany, Japan, Netherlands	854.80

Source: Development Aid website <https://www.developmentaid.org/news-stream/post/76903/top-multilateral-development-banks-an-overview>

**Figure 2: Largest regional development banks**

MDB	Year founded, headquarter	Policy priority	Shareholders	Top shareholders	Disbursements FY 2019 (US\$ million)
Asian Development Bank (ADB)	1966, Manila, Philippines	Infrastructure, environment, regional cooperation and integration, finance-sector development and education	67	Japan, USA, China, India, Australia	16,470.00
Inter-American Development Bank (IADB)	1959, Washington DC, USA	Extreme poverty, fiscal policy, state capacity, financial markets, infrastructure, human capital, institutions, knowledge and innovation systems, urban planning and value-chain integration	48	USA, Argentina, Brazil, Mexico, Japan	10,574.00
European Bank for Reconstruction and Development (EBRD)	1991, London, UK	Agribusiness, equity funds, financial institutions, information and communication technology, legal reform, manufacturing and services, municipal infrastructure, natural resources, nuclear safety, power and energy, property, and tourism and transport	67	USA, France, Germany, Italy, Japan	8,470.00
Islamic Development Bank (IsDB)	1975, Jeddah, Saudi Arabia	Quality of life, infrastructure, agriculture and food security, human capital, economic cooperation and integration, Islamic finance development, solidarity and resilience	57	Saudi Arabia, Libya, Iran, United Arab Emirates, Qatar	8,200.00
African Development Bank (AfDB)	1963, Abidjan, Côte d'Ivoire	Infrastructure, regional integration, private-sector development, governance and accountability, skills and technology	80	Nigeria, USA, Egypt, Japan, South Africa	5,237.00
Asian Infrastructure Investment Bank (AIIB)	2015, Beijing, China	Sustainable infrastructure, cross-country connectivity and private-capital mobilization	54	China, India, Russia, Germany, Korea	1,480.00

Source: Source: Development Aid website <https://www.developmentaid.org/news-stream/post/76903/top-multilateral-development-banks-an-overview>

### **2.2.2. *External Public or Sovereign Debt***

The Southern African Development Community (SADC) defines public debt as the total stock of outstanding loans and guarantees owed by the central government to either domestic or external creditors. External sovereign debt, which this current study shall adopt, specifically refers to obligations incurred from foreign investors. Most empirical studies define external debt as debt issued in a foreign legal jurisdiction or denominated in a foreign currency (Tomz and Wright, 2013; Dias et al., 2011; Eichengreen et al., 2005).

### **2.2.3. *Dutch Disease (Resource Curse)***

Pegg (2009), in a comprehensive study of Botswana, discusses the concept of Dutch Disease in the context of resource-rich countries. The term originates from the economic challenges faced by countries whose booming resource extraction sectors crowd out other productive sectors such as manufacturing and agriculture (Corden and Neary, 1984). Large foreign currency inflows from resource exports tend to distort relative prices and shift labour and capital away from non-resource sectors, reducing their competitiveness. While this pattern is common in many mineral-rich economies, Botswana is often cited as having avoided many of its negative effects.

These conceptual definitions are important for situating Botswana's experience within broader development finance debates, particularly regarding debt accumulation, economic diversification, and the role of MDBs.

## **2.3. Overview of Multilateral Development Bank financing in Botswana**

Multilateral Development Banks play a catalytic role in the economic development of low- and middle-income countries, particularly those classified as developing or in economic transition. These institutions extend their influence not only through financial instruments but also through policy dialogue and advisory services that engage a broad range of national stakeholders (Basilio, 2018; Wihtol, 2014; Buiters and Fries, 2002). MDBs are mandated to provide concessional resources in the form of grants, soft loans, risk guarantees, equity investments, and technical assistance. These funds are generally channelled at the sovereign or institutional level, making MDBs a particularly attractive source of long-term development finance (Mendez and Houghton, 2020).

A study by Engen and Prizzon (2018), which focused on MDB operations in Africa and Asia, found that over half of all MDB investments are directed to low-income countries. This aligns with the prevailing income demographics in sub-Saharan Africa. The study notes that concessional finance, which offers favourable terms and longer maturities, is usually reserved for countries with a per capita income of USD 1,200 or less, in line with the African Development Bank’s classification. Infrastructure projects receive the largest share of MDB disbursements, accounting for more than 50 per cent of total lending. Other prominent sectors supported include transport, energy, banking and finance, water and sanitation (WASH), agriculture, education, and governance.

Access to MDB funding is governed by institutional eligibility frameworks. The World Bank, for instance, assesses a country’s creditworthiness based on several macroeconomic and institutional criteria. These include political risk, external debt and liquidity levels, fiscal policy and debt burden, balance of payments, economic structure and growth prospects, monetary and exchange rate regimes, financial sector performance, and corporate sector vulnerabilities. The African Development Bank applies similar but context-specific considerations, including the sustainability of a country’s debt profile, its macroeconomic outlook, and compliance with internal exposure limits.

Botswana’s profile of MDB borrowing has remained relatively stable over the past decade. Botswana’s current per capita income USD 8,340 in 2023 indicating that they are of higher credit for MDB financing, and will ordinarily attract non-concessional funding. From USD 1.1 billion in the 2013 financial year, MDB-related debt increased to USD 1.37 billion by 2023. The projected figure for 2024 stands at USD 1.67 billion, reflecting a modest compound annual growth rate (CAGR) of approximately 2.13% over this period. Table 3 shows a summary of Botswana’s MDB debt schedule for 10 years.

Table 3: Medium Term Debt Outstanding 2024/25

in BWP millions	ACTUALS										BUDGET	
	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
<b>Loans from Governments</b>												
United States	3.4	2.0	0.0	-	-	-	-	-	-	-	-	-
Belgium	2.3	1.4	0.8	-	-	-	-	-	-	-	-	-
China	545.7	520.1	449.3	319.3	269.7	211.6	153.2	69.8	12.3	-	-	-
Kuwait	119.7	73.9	76.6	67.8	58.9	61.3	57.8	50.9	46.9	48.8	42.7	36.6
Japan	265.0	201.1	199.3	175.8	218.5	334.1	376.1	310.0	299.4	375.1	1,719.8	1,698.3
	<b>936.1</b>	<b>798.4</b>	<b>726.0</b>	<b>562.9</b>	<b>547.1</b>	<b>607.0</b>	<b>587.1</b>	<b>430.6</b>	<b>358.5</b>	<b>423.9</b>	<b>1,762.5</b>	<b>1,735.0</b>
<b>Loans from Organisations</b>												
International Development Association	22.2	23.4	21.8	17.4	12.4	10.3	7.6	3.9	2.1	1.2	0.0	0.0
International Bank for Reconstruction and Development	1,011.4	1,337.2	1,443.5	1,680.5	1,456.9	1,930.5	2,203.2	2,303.9	5,817.6	6,913.5	8,908.1	8,797.1
African Development Bank/ Fund	12,598.2	14,680.0	15,057.7	13,472.1	11,369.5	11,761.0	11,871.0	9,900.6	10,561.0	10,723.9	11,551.5	10,168.5
OPEC/OFID	252.8	221.4	220.1	187.4	170.3	230.6	248.3	197.8	233.9	448.8	1,720.7	1,658.3
European Investment Bank	127.4	83.0	52.9	44.9	43.4	41.3	41.0	36.5	32.0	31.5	27.0	22.6
The Arab Bank for Economic Development in Africa	165.1	202.2	208.7	181.2	153.7	216.3	221.1	187.4	174.3	177.3	154.8	132.4
Nordic Investment Bank/ Nordea	652.8	629.8	609.3	503.2	388.1	351.8	297.1	216.8	184.4	167.6	123.6	79.7
International Fund for Agricultural Development	5.9	2.1	1.0	6.9	4.0	1.8	1.6	4.2	3.9	4.0	3.5	3.1
	<b>14,835.7</b>	<b>17,178.9</b>	<b>17,614.9</b>	<b>16,093.6</b>	<b>13,598.3</b>	<b>14,543.6</b>	<b>14,890.9</b>	<b>12,851.0</b>	<b>17,009.1</b>	<b>18,467.7</b>	<b>22,489.3</b>	<b>20,861.6</b>
<b>Suppliers Credits and Other Loans</b>												
	4.3	4.0	3.9	2.9	2.3	1.7	1.1	0.3	0.1	0.1	-	-
	<b>4.3</b>	<b>4.0</b>	<b>3.9</b>	<b>2.9</b>	<b>2.3</b>	<b>1.7</b>	<b>1.1</b>	<b>0.3</b>	<b>0.1</b>	<b>0.1</b>	<b>-</b>	<b>-</b>
<b>Grand Total</b>	<b>15,776.1</b>	<b>17,981.3</b>	<b>18,344.9</b>	<b>16,659.4</b>	<b>14,147.7</b>	<b>15,152.3</b>	<b>15,479.1</b>	<b>13,281.9</b>	<b>17,367.7</b>	<b>18,891.7</b>	<b>24,251.8</b>	<b>22,596.5</b>

Pula amounts derived from converting outstanding debt in foreign currency at the exchange rate as at 31 March each year.

**Source:** Bank of Botswana Annual Reports

Botswana's main MDB creditors are the African Development Bank (AfDB) and the International Bank for Reconstruction and Development (World Bank). Until 2020, the AfDB accounted for an average of 83 per cent of Botswana's multilateral loan stock. However, by 2021, the World Bank had significantly increased its lending share, rising to approximately 38 per cent of the country's total MDB loans. This shift may signal a gradual broadening of Botswana's financing relationships in response to evolving development priorities.

The growing strategic relevance of MDBs is evidenced by recent institutional developments. In 2014, the BRICS countries (Brazil, Russia, India, China, and South Africa) established the New Development Bank (NDB). The NDB was formed primarily to address persistent infrastructure and investment gaps in developing countries under terms that are more attuned to their development challenges. A secondary but important rationale for its formation was to respond to the perceived deficiencies of traditional Bretton Woods institutions, including policy conditionality, limited transparency, and alleged human rights concerns (Head, 2003; Qobo and Soko, 2015).

Multilateral Development Banks are increasingly aligned with global development frameworks such as the Sustainable Development Goals (SDGs), Harmonized Framework for Additionality and Crowding-In Private Sector Finance. At the G20 summit in April 2018, shareholders approved a capital increase of USD 13 billion for the World Bank Group, aiming to expand its lending capacity to USD 100 billion annually by 2030 (Wolff, 2018). This move acknowledges that commercial banks and national public sectors alone cannot meet the long-term financing demands of the SDGs, especially in developing economies.

Within Botswana, multilateral borrowing also reflects domestic capacity constraints. According to Maipose and Matsheka (2002), one reason for the government's engagement with MDBs is the inability of the local financial sector to fully support the costs associated with economic diversification and development. More recent work by Calleja and Prizzon (2019) confirms similar uses of MDB funding, being that MDB financing is directed toward key national priorities, particularly infrastructure, education, and increasingly, climate change mitigation and adaptation efforts.

In this context, Botswana's MDB borrowing strategy appears prudent and targeted. While the country has not relied extensively on multilateral loans relative to its peers, its continued access to such finance provides an important buffer and a tool for supporting long-term national development.

### ***2.3.1. External Public or Sovereign Debt***

External public debt refers to financial obligations incurred by a national government from foreign creditors. These debts are generally denominated in foreign currencies and governed by external legal jurisdictions. Sovereign borrowing may take the form of loans from multilateral development institutions, bilateral government arrangements, or international bond issuances. Cassard and Folkerts-Landau (1997) emphasise that managing external debt effectively requires careful balancing of foreign currency risk, interest rate exposure, and maturity mismatches. This is particularly important for developing economies that may lack deep domestic capital markets to absorb public borrowing needs.

On the African continent, concerns about rising external debt have been gaining prominence. Coulibaly et al. (2019) highlight a notable shift in the structure of external borrowing in Sub-Saharan Africa (SSA). Between 2000 and 2017, private creditors' share of SSA external debt grew from 9 to 17 per cent, while the share of multilateral and bilateral debt declined. This

trend reflects increased reliance on commercial instruments such as Eurobonds, often at higher interest rates and shorter maturities. Following the COVID-19 pandemic, Heitzig et al. (2021) observed a slight reversal, as MDBs stepped in with debt relief initiatives and concessional financing. Despite these efforts, concerns persist about the sustainability of African debt.

Public debt management is also evolving. Governments are increasingly adopting more market-oriented approaches, applying commercial strategies to manage public liabilities. Trampusch (2015) argues that sovereign debt management has taken on a more “business-like” character, reflecting growing engagement with financial market actors. Nevertheless, challenges remain. Adeniran et al. (2018) identify poor cost-risk analysis, limited institutional autonomy, and data gaps as key obstacles faced by many debt management offices on the continent. These limitations can hinder a government’s ability to make informed and strategic decisions regarding external borrowing.

### **2.3.2. Dutch disease (resource curse)**

The concept of Dutch Disease, often discussed in resource curse literature, describes a situation where the discovery and exploitation of natural resources, such as minerals or oil, lead to economic imbalances that undermine other productive sectors. Corden and Neary (1984) introduced the model in the context of the Netherlands’ natural gas boom, where resource-driven foreign currency inflows appreciated the real exchange rate and weakened manufacturing and agriculture.

Botswana’s experience with diamond wealth has drawn both admiration and scrutiny. Pegg (2009) conducted an extensive study on the country’s ability to manage resource revenues effectively. Unlike many resource-rich countries, Botswana is widely credited with avoiding the most severe manifestations of the resource curse. Instead of falling into the common trap of rent-seeking, institutional decay, and macroeconomic instability, Botswana established a reputation for prudent fiscal management and institutional discipline. In their study *Escaping the resource curse, Evidence from Botswana and the rest of the world*, Ilimi (2007) finds that governance has a significant determinant on the extent to which the positive effects of being resource rich can materialize in a country. It finds that indicators such as anticorruption policies, transparency and accountability and predictability of regulation change are high in countries such as Botswana and positively contribute to the countries ability to effectively manage natural resource growth.

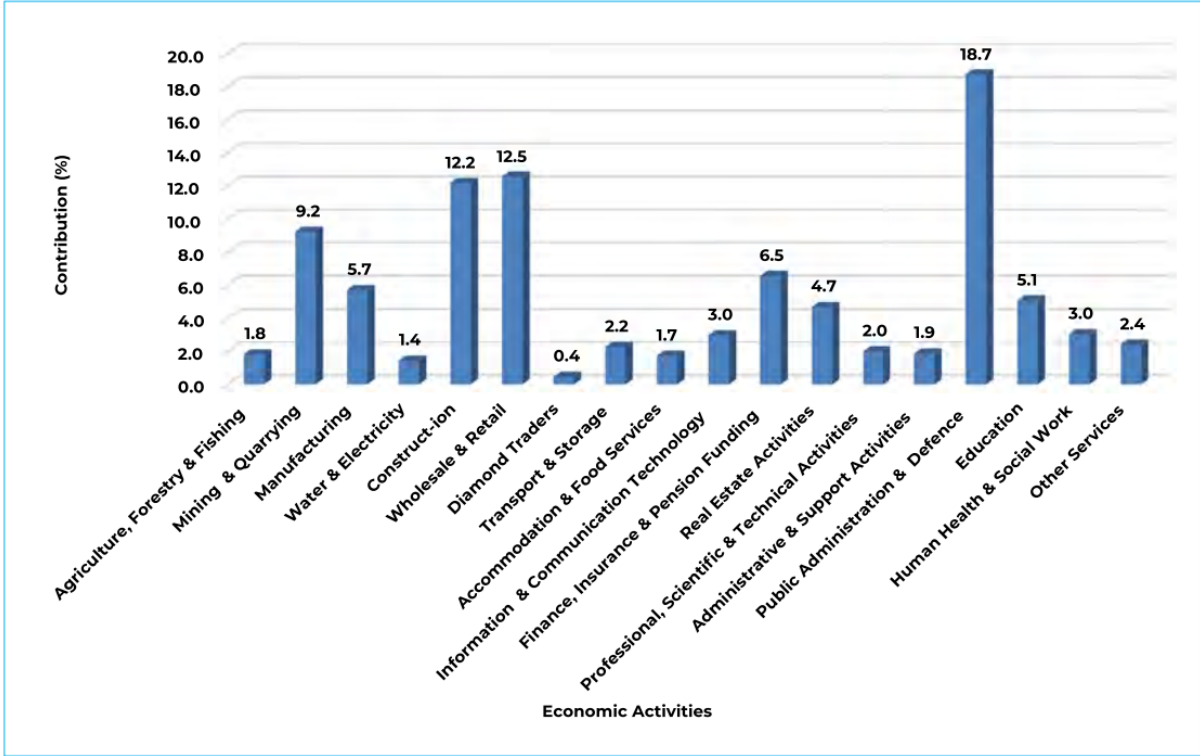
However, this does not suggest immunity from risk. Basedau (2005) argues that the effects of resource abundance depend heavily on country-specific contextual factors, including governance quality and policy responses. Frynas and Buur (2020) add a behavioural finance perspective, noting that policymakers often make forward-looking spending commitments based on anticipated resource revenues. This can lead to fiscal overextension, especially when prices fluctuate or revenues fail to materialise.

### ***2.3.3. Economic Diversification***

Economic diversification refers to the broadening of a country's productive base to reduce reliance on a single sector or commodity. This is particularly relevant for countries like Botswana, where diamond exports dominate national income and foreign exchange earnings. Hackbert and Anderson (1974) argue that diversification improves macroeconomic stability and reduces vulnerability to external shocks. Diversification is especially crucial in mono-resource economies where boom-bust cycles linked to commodity price volatility can disrupt growth.

In Botswana, national development plans have consistently prioritised economic diversification. These plans are typically approved by Parliament and are intended to be legally binding strategies for guiding long-term development (Zizhou, 2009; Makoni, 2015). They outline specific goals and milestones aimed at expanding the range of economic activities and increasing value-added production in sectors such as tourism, manufacturing, financial services, and agriculture.

**Figure 3 Contributions to GDP by Economic Activites (2024 Q3)**



Source: Statistics Botswana Gross Domestic Product Report Q32024, December 2024

Anyachie and Areji (2015) suggest that development planning in resource-rich countries should explicitly seek to “broaden the range of economic activities” that contribute to gross domestic product. In the case of Botswana, the implementation of diversification policies has faced structural challenges, including limited human capital, relatively small domestic markets, and dependency on external demand for exports. Nonetheless, the need for diversification remains paramount in fostering inclusive and resilient growth.

**2.4. Theoretical Framework**

The following theoretical literature focuses on relevant theories of debt and economic growth that are observed through increased investment. The theories analyse the relationship between debt accumulation, macroeconomic indicators and economic growth, and touch on the potential scenarios of debt capital being suboptimal.

**2.4.1. Keynesian Theory vs Classical Theory**

There is an extensive body of theoretical literature that investigates the debt-growth nexus.

Keynesian Theory offers that prudent public indebtedness can stimulate demand and lead to a proportional increase in investment through the accelerator effect and increase overall economic output, whereas the Classical Theory argues that public indebtedness hinders capital accumulation and consumption by both present and future generations (Moreputla and Moffat, 2017). Neoclassical theory proposes that there is a direct relationship between debt and the economic growth of a country (Ehikioya et al, 2020). It further goes on to state that where there is stability in macroeconomic indicators and accommodative investment policies, debt funding in profitable investments should have an overall positive effect on economic growth, thereby improving the likelihood of debt facilities being serviced.

These theories, however, have assumed perfect capital mobility, which in practice is not always the case. The acquisition of finance, though largely driven by demand (due to the ever-increasing population growth, urbanisation and accompanying infrastructure needs of the continent), is also driven by supply factors (through the MDBs and other financial players who have funding eligibility criteria). The growth-cum-debt theory emphasises the superiority of external borrowing in place of national savings. For African countries, acquisition of foreign debt is usually driven by budgetary deficits, which are a result of weak national savings capacity or weak growth and sometimes even misappropriation of funds (Omodero et al, 2020). Inappropriate management of debt could lead to a debt overhang effect, which occurs when debt levels are so high that debt providers do not anticipate full settlement due to overall high levels of debt.

#### ***2.4.2. Ricardian Equivalence Theory***

Ricardian Equivalence Theory expresses that for a given amount of government expenditure, there would be no material difference in the impact of economic growth, regardless of whether external debt or tax was utilised to finance it, i.e. the debt/tax mix is irrelevant (Seater, 1993). According to Barro (1979), the theory is flawed in that it doesn't consider the theory of public debt creation. His research develops an "optimal" public finance model that analyses variables that drive a decision between taxes or debt as a source of funding.

### **2.5. Review of Empirical Literature**

This section reviews empirical studies relevant to the two dominant themes shaping Botswana's engagement with external financing: the role of MDBs under shifting global power dynamics,

and the fiscal and policy considerations involved in diversifying mono-resource economies. The review is structured accordingly.

### **2.5.1. Multilateral Banks and Political Headwinds**

The existence of multilateral and bilateral development funding is fundamentally driven by a failure of the global financial system to fund risky projects focused on capacity (infrastructure) building and poverty alleviation (Lindbaek et al. 1998; Stiglitz 1998). The history of the origination of multilateral banks stems from empirical evidence for a need for a ‘bank for reconstruction’ as is cited in the founding documents for the International Bank for Reconstruction and Development (IBRD). Amid the Paris occupation in World War II, the World Bank and the International Monetary Fund were formed at Bretton Woods in 1944.

These institutions are wholly owned and fully funded by equity from government funds and have no profit motive. Since then, an estimated 25 development banks have established themselves globally, including the New Development Bank in 2014 and the Asia Infrastructure Investment Bank. Of the 24 banks surveyed, the common theme of their mandates speaks to fostering sustainable economic development and supporting regional cooperation and economic integration.

The success of capital deployment by MDBs cannot be understated. As of 2021, MDBs had a total asset base of approximately USD1.97 trillion, and as demonstrated in the table below, the World Bank Group alone (IBRD and IDA), has advanced an estimated USD500 billion in development funding from a capital base of USD15.8 million in 1944.

**Table 4: MDB Financial Highlights**

	DEVELOPMENT ASSETS	TOTAL ASSETS	SHAREHOLDERS EQUITY	LIQUID ASSETS RATIO*	BONDS OUTSTANDING**
YEAR/UNIT	2020/BN\$	2020/BN\$	2020/BN\$	2020/%	2021/BN\$
AfDB	34	51	11	32	35
ADB	133	272	53	18	134
AIIB	8	32	20	73	19
CAF	29	47	13	31	26
CDB	1	2	1	30	1
EBRD	41	85	22	45	56
EIB	552	678	90	19	565
IDB	106	152	34	26	113
IBRD	211	297	40	29	260
IDA	168	199	168	18	28
IDB Invest	4	6	2	33	2
IFC	47	96	25	48	56
ISDB	25	35	13	30	22
NDB	7	19	10	61	14
	<b>1,366</b>	<b>1,972</b>	<b>503</b>	<b>35</b>	<b>309</b>

Source: Capital Adequacy Frameworks Panel Report

MDBs and political undertones are symbiotic. According to Qobo and Soko (2015), the BRICS countries have nothing much in common, save for “their joint dissatisfaction with Western dominance of international institutions”. Their research finds that the formation of the New Development Bank was triggered by a lack of representation, particularly of developing economies in international institutions, which skewed power towards the West (which holds significant representation). This implies that their perception of American leadership is no longer adequate to produce solutions for the development shortcomings of the rest of the world. To this end, African countries are taking great interest in finding alternative means for self-development, albeit within the confines of the current world order.

A study by the UNDP (Jensen, 2022) found that the risk of a debt crisis is increasing significantly, made worse still by the COVID-19 pandemic. The pandemic caused a contraction of 3.4% of global GDP because of measures put in place to curb transmission. In the study, of the 54 developing countries with ‘severe’ debt problems, 24 were in SSA. A total of 26 countries are rated as either substantial risk, extremely speculative, or default. The creditworthiness of a sovereign is a key determinant in its ability to raise funding and has a significant impact on how its private market players participate in the financial infrastructure. In 2021, the IMF issued USD650 billion of Special Drawing Rights to provide liquidity post the COVID-19 pandemic, with less than one-third reaching developing countries and other hard-hit economies. This begs the question as to whether the issuance of the rights was indeed in response to a development mandate.

Some countries have raised concerns over the stringent conditions of Western MDB debt funding, including insistence on invasive policies and low disbursement speeds. Landry (2018) carried out a comparison of what determines Western and Chinese Development Flows to Africa and found that the West placed greater emphasis on Governance (political stability) than China, whereas China places more emphasis on UN Voting alignment and bilateral trade relations as a determining factor of providing finance. China is now the single biggest bilateral lender in SSA, holding more African debt than the next 10 lenders (Heitzig, 2021). This has implications for broadening the global landscape of available sources of finance to developing countries. China’s participation in BRICS further accomplishes the dual objective of strengthening Chinese bilateral relations with the world’s largest developing countries and ensures a market for Chinese production through trade.

### ***2.5.2. Economic Diversification in a Mono Resource Economy***

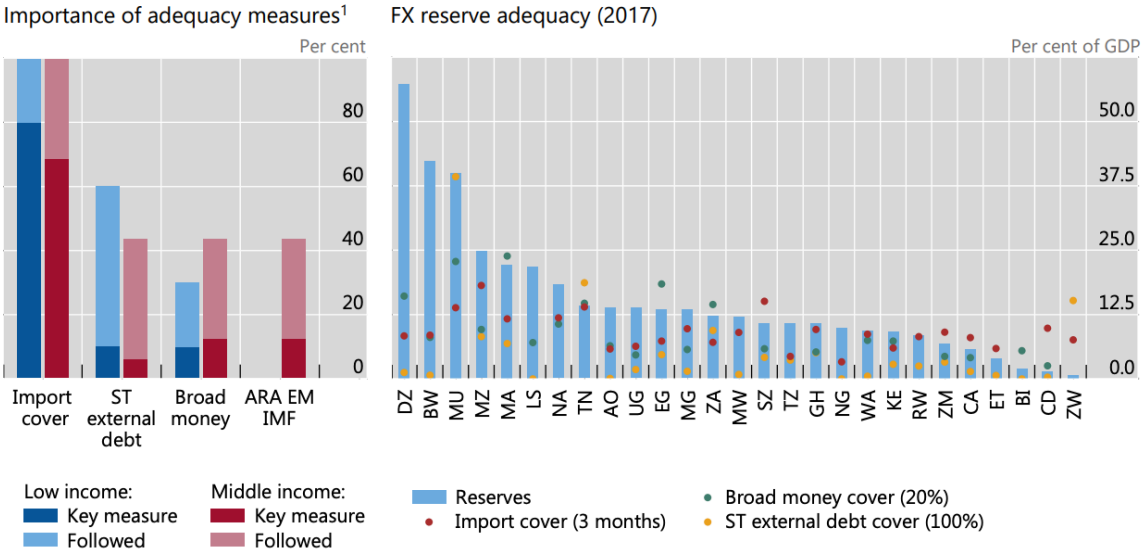
Among developing countries globally, Sub-Saharan Africa (SSA) has been relatively slow to shift its economic focus away from resource-based sectors. Many countries in the region exhibit limited competitive advantage in sectors outside of natural resource extraction (Gelb, 2010). Several structural and contextual factors contribute to this pattern. These include limited access to capital for non-resource sectors, low levels of human capital development, geographical constraints, and the strength of comparative advantages associated with high-quality mineral reserves.

The Organisation of the Petroleum Exporting Countries (OPEC) provides a useful case study of single-resource mobilisation. According to the OPEC Annual Statistical Bulletin (2022), OPEC member states collectively hold just over 80%, which is approximately 1,241 billion barrels of the world's proven crude oil reserves. Of this, 67% are in the Middle East. While this resource wealth has supported high GDP per capita in some member states, it has also been associated with socio-economic challenges. These include conflict, human rights violations, income inequality, and limited development in non-oil sectors. These conditions reflect the broader characteristics of the “resource curse.”

In many African countries, government revenues rely heavily on customs duties, mineral royalties, and consumption taxes derived from domestic spending and commodity exports. This dependence heightens fiscal vulnerability during commodity price shocks or global economic downturns. Elhiraika (2007) argues that the accumulation of foreign reserves can serve dual functions. On the one hand, they act as a buffer against volatile capital inflows and help secure external borrowing. On the other hand, they carry opportunity costs, especially when reserves earn low returns or are maintained instead of funding critical development projects.

Schanz (2019), in a study of 26 African countries, examined how governments manage foreign exchange reserves. The study found that reserves are predominantly held as a form of self-insurance. The two main motivations identified were: (1) to ensure a stable import supply during periods when fiscal revenues contract, as occurred during the COVID-19 pandemic, and (2) to service short-term foreign debt in the face of external shocks, such as exchange rate volatility or rising interest rates.

Figure 4: Analysis of Foreign Reserve Adequacy in 26 African Countries.



AO = Angola; BI = Burundi; BW = Botswana; CA = Bank of Central African States; CD = Democratic Republic of Congo; DZ = Algeria; EG = Egypt; GH = Ghana; KE = Kenya; LS = Lesotho; MA = Morocco; MG = Madagascar; MU = Mauritius; MW = Malawi; MZ = Mozambique; NA = Namibia; NG = Nigeria; RW = Rwanda; SZ = Eswatini; TN = Tunisia; TZ = Tanzania; UG = Uganda; WA = Central Bank of West African States; ZA = South Africa; ZM = Zambia; ZW = Zimbabwe.

Source: Schanz (2019)

As illustrated in the figure, 80% of surveyed countries cited import cover as the primary reason for maintaining foreign reserves. By contrast, other factors, such as managing potential demand for foreign assets or risks to the balance of payments, were not considered central to reserve policy.

The implication of these findings is that most African countries do not view foreign reserves as a primary source of capital for development or infrastructure projects. Instead, reserves are preserved for macroeconomic stability, while external debt is considered when additional financing is needed. The central policy question, therefore, is not whether a sovereign should borrow, but rather which financing partner it should engage.

2.5.3. Determinants of Debt Financing

On the demand side, Beaugrand et al, (2006) conducted a study on Central and West African countries assessing the principals and applied considerations that drive the choice between foreign and domestic funding. They find that the ‘terms’ of the debt funding, particularly highly concessional, external debt will ordinarily always outrank domestic debt. These countries would therefore assess debt sustainability as a key determinant of source of funding, taking into

account not only the level of primary deficit, but also government's primary expenditure, Government Revenues and interest rate on debt. Swamy (2015) assessment on 'what factors influence the government debt in a sovereign country?' concluded that 'real GDP growth, foreign direct investment, inflation, government expenditure and population' will reduce debt balances and similarly, 'gross fixed capital formation, final consumption expenditure and trade openness' will increase debt balances. Albeit this study was conducted at the height of the eurozone debt crisis, when budget deficits and high levels of indebtedness prevailed, their data set does cover over 252 countries from 1980 to 2009. It further finds that of all the economic groupings, developing economies record the largest decline in debt balances for every 1% growth in GDP, and the largest increase in debt balances for every 1% growth in final consumption expenditure.

On the supply side, Basilio (2014) conducted an empirical analysis for the determinants of MDB's participation, particularly in infrastructure projects in developing countries from 1990 to 2007. The study finds that participation is 'higher for less populous and poorer countries, where legal and financial systems are underdeveloped'. For this study, macroeconomic indicators such as Real GDP per capita and economic growth; and External debt and General government balance (particularly government deficits) are key indicators given that MDBs tend to lend themselves to 'poorer' countries. In a later study, Basilio (2025), investigated the participation of MDB's in renewable energy projects in developed countries between 2011 and 2018. This study uncovered similar determinants as per the 2014 study however with an additional consideration being the level of government support into the project. Contrary to the supply side studies, inflation and GDP growth did not yield a strong statistical significant.

This study builds upon the work of Moreputla and Moffat (2017), who examined the effects of external debt on Botswana's national savings. Their findings revealed a statistically significant and negative relationship between debt and savings. They confirmed causality using the Granger causality test, which this study does not call for. While their model included variables such as real interest rates, gross fixed capital formation, and exchange rates, the focus of this study is different. Rather than analysing the impact of debt, it seeks to examine what drives its accumulation in the first instance.

The research investigates the interplay between commonly accepted indicators of sovereign creditworthiness such as market size, trade balance, foreign reserves, and fiscal policy, and the

macroeconomic drivers that might prompt a country like Botswana to seek financing from multilateral development banks. While the study does not cover the full breadth of MDB eligibility criteria, it focuses on indicators that are both universally accepted and relevant to national fiscal management. This approach ensures that the findings align with the priorities of both sovereign borrowers and multilateral lenders, enhancing the credibility and relevance of the study's conclusions.

## **2.6 Conclusions**

This chapter has reviewed the conceptual and empirical literature relevant to multilateral development finance and macroeconomic performance, particularly in the context of Botswana and similar economies. It began by defining key concepts such as MDBs, external sovereign debt, Dutch Disease, and economic diversification. These terms framed the discussion of the theoretical and institutional foundations that shape debt strategy in developing countries.

The review of empirical literature focused on two interrelated themes. First, it highlighted the evolving role of MDBs in development finance, particularly under shifting global political alignments. While MDBs remain critical sources of long-term finance, emerging political headwinds and dissatisfaction with Western-led financial governance have led to new institutional alternatives such as the New Development Bank. Second, the literature examined economic diversification challenges in mono-resource economies. It found that while foreign reserves provide a buffer against external shocks, they are rarely deployed as active sources of development finance. Instead, governments often resort to external borrowing, with creditor selection influenced by institutional, political, and economic considerations. Finally, the empirical review demonstrated that an overlap exists between the supply factors and demand factors driving debt accumulation in sovereigns.

Given the scarce literature on the topic, the insights drawn from this literature review inform the empirical analysis in the next chapter, which investigates Botswana's external debt profile and its engagement with multilateral development financing.



## **CHAPTER 3: METHODOLOGY**

### **3.1. Introduction**

This chapter presents the methodology adopted for the study. The research approach clarifies how the research objectives are to be achieved. Given the nature of the variables being examined, a quantitative method was selected as the most appropriate. The research design outlines the data used in the analysis, including the period covered and sources of data. It also presents the analytical framework and regression model employed to examine the relationship between multilateral debt accumulation and selected macroeconomic variables in Botswana. The subsequent sections provide a detailed description of the methodological decisions, including the research philosophy, approach, data collection techniques, and model specification.

### **3.2. Research Philosophy and Research Approach**

Botswana has historically maintained relatively low levels of sovereign debt despite its stated development objectives and persistent fiscal deficits. While the country possesses many of the macroeconomic indicators that typically attract multilateral development bank (MDB) financing, it continues to apply a cautious approach to external borrowing. This research seeks to explore whether a direct relationship exists between macroeconomic indicators and multilateral debt accumulation in Botswana.

Research philosophy provides a foundation for methodological decisions. Positivism and interpretivism represent the two extremes on the philosophical continuum. Positivism is rooted in objectivity and relies on empirical, quantifiable evidence to produce generalisable findings. Interpretivism, on the other hand, adopts a more subjective stance and typically employs qualitative methods (Saunders et al., 2016). Between these extremes is critical realism, which acknowledges the existence of an objective reality while accepting that researchers interpret this reality through subjective lenses.

This study adopts a positivist philosophy, given its emphasis on objective reality and empirical measurement. It seeks to analyse macroeconomic variables in a systematic and replicable manner, making positivism the most appropriate philosophical stance.

The selection of a research approach further informs how data is collected and analysed. Deductive, inductive, and abductive approaches are the most discussed. Deductive research proceeds from theory to empirical testing. It starts with general assumptions and narrows down to specific cases, making it suitable for testing existing theoretical propositions (Arlbjørn and Halldorsson, 2002; Andreewsky and Bourcier, 2000; Asvoll, 2014; Saunders et al., 2016). Inductive research, by contrast, builds theory from observed data, while abductive research combines both approaches. Abduction begins with an empirical observation that contradicts prior theoretical expectations and seeks either to match it to an existing framework or to extend the theory to accommodate new insights (Dubois and Gadde, 2002; Yu, 2005).

While Botswana's unusually low debt levels may warrant an abductive inquiry, the primary aim of this study is to test the existence of a relationship between macroeconomic indicators and multilateral debt accumulation. As such, the research is aligned with the deductive approach, which supports hypothesis testing. Williams (2007) argues that quantitative research is particularly suited for relational questions, making deduction a foundational element of the methodological design.

### ***3.2.1. Data period and sources***

The study makes use of secondary data obtained from publicly available macroeconomic datasets. Annual time-series data covering the period from 1986 to 2023 is employed to provide sufficient variation across multiple economic cycles, including periods of expansion, contraction, and fiscal adjustment. The decision to adopt a long-time horizon ensures that the model captures both structural and cyclical effects on debt accumulation. The selection of these 37 years was based on the availability of consistent and credible data from the Ministry of Finance, as well as from the Bank of Botswana's historic annual reports.

The variables used in the analysis include foreign sovereign debt as the dependent variable, and gross domestic product growth, foreign exchange reserves, trade balance, and government expenditure as the explanatory variables. The GDP growth rate is used as a proxy for changes in market size, while foreign reserves and trade balance reflect the country's external position. Government expenditure is included to reflect the fiscal stance, which may influence borrowing needs. These variables were chosen due to their established significance in both empirical literature and multilateral development banks' eligibility criteria, which often consider indicators such as income levels, macroeconomic stability, and external financing capacity.

Although foreign reserves could serve as an alternative to borrowing, existing research suggests they are more commonly held for precautionary purposes rather than deployed for development spending.

Data was sourced from official publications by Statistics Botswana, the World Bank's World Development Indicators, and the United Nations Conference on Trade and Development (UNCTAD) statistical databases. These sources provide reliable and standardised indicators suitable for robust econometric analysis.

### **3.2.2. Regression equation**

The underlying assumption of the study is that foreign debt accumulation in Botswana is influenced by a combination of macroeconomic factors, notably market size, foreign exchange reserves, trade balance, and government expenditure. These variables have been selected based on their theoretical and empirical relevance to sovereign borrowing decisions and are consistent with the eligibility conditions and debt sustainability assessments conducted by multilateral development institutions.

Although limited prior work exists on the determinants of multilateral debt in Botswana, the regression model used in this study draws upon established econometric literature. Moreputla and Moffat (2017) examined the relationship between external debt and national savings in Botswana, adapting their model from earlier works by Chaudhry et al (2009). These models are rooted in the life cycle and permanent-income hypothesis, which explains intertemporal consumption and financing behaviour by sovereign entities. This framework serves as a foundation for the regression specification developed in this study. The Model is as follows:

$$GS = f(EX, XR, ED, GFCF, GDPPC, RINT) \quad (1)$$

where *GS* is National Savings as a percentage of GDP? *EX* is Real Exchange Rate, *XR* is Exports as a percentage of GDP, *GFCF* is gross fixed capital formation as a percentage of GDP? *GDPPC* is GDP per capita, *RINT* is real interest rate, and *ED* is external debt as a percentage of GDP?

Their study found that there is a statistically negative and significant effect of debt on national savings, with debt responses occurring over sustained longer periods rather than through the short term. The study also found that Botswana has strong public sector involvement and a conservative debt strategy.

In their study on the impact of multilateral development finance institutions on economic growth, Massa (2011) considers a regression model as follows:

$$GI = f(DFI, FDI, TRADE, GOV, INFLA) \quad (2)$$

where  $GI$  is the real per capita income growth rate,  $DFI$  is development finance institutions' investment,  $FDI$  is foreign direct investment,  $TRADE$  is trade openness,  $GOV$  is government consumption, and  $INFLA$  is inflation. Massa (2021) found that multilateral development finance institutions' investment has a positive and significant role in fostering economic growth in recipient countries, more so in low-income countries than in high-income countries.

The model used in this study, therefore, modifies these equations to make debt (rate of change in debt levels) the subject of the analysis and further encompasses other macroeconomic variables that impact debt accumulation. Gereziher and Nuru (2021) find that in the long run, external debt has a positive effect on foreign exchange reserves, which is consistent with other researchers who have found a two-way relationship between the two variables (Rangkyuty and Hidayat, 2021). Their study uses a Two-Stage Least Squares (a simultaneous equation) model as follows:

$$FD = f(FER, GDP, INV) \quad (3)$$

$$FER = f(FD, NX, CON) \quad (4)$$

where  $FD$  is foreign debt,  $FER$  is foreign exchange reserve, and  $GDP$  is gross domestic product,  $INV$  is investment,  $NX$  is net exports, and  $CON$  is consumption.

In this study, and following the approach used in the aforementioned studies, a regression analysis will be used to determine the nature of the relationship between the variables, and the model will be represented using the following equation:

$$EDMDB_t = \beta_0 + \beta_1 GDPG_t + \beta_2 TFER_t + \beta_3 BOP_t + \beta_4 GEXP_t + \varepsilon_t \quad (5)$$

where  $EDMDB$  represent External Debt from MDBs;  $GDP$  is defined as the growth in Gross Domestic Product to represent the rate of growth in the Market size;  $TFER$  is Foreign exchange reserves as a measure of creditworthiness;  $BOP$  is Trade Balances as an indicator of financial deficit and  $GEXP$  is Government expenditure as an indicator of national consumption.  $\varepsilon$  is the error variable.

### **3.2.3. Definition and measurement of variables**

The variables used in this study are selected based on their relevance in empirical literature on public debt and multilateral lending, and the eligibility criteria applied by MDBs when assessing sovereign borrowers. This section outlines how each variable is defined and measured in the context of this research.

#### **3.2.3.1. Dependent variable**

The dependent variable in this study is External Debt from Multilateral Development Banks (*EDMDB*). This refers to the total outstanding debt owed by the Government of Botswana to multilateral financial institutions at the end of each financial year. The measurement is based on the aggregate value of “Loans from Organisations,” as published by the Ministry of Finance and Economic Development in its quarterly public debt updates. These figures are reported in Botswana pula; however, for consistency and comparability, this study converts all debt figures into United States dollars unless otherwise stated.

To ensure consistency in the interpretation of the results and to minimise the effects of outliers and scale differences among variables, *EDMDB* will be measured as the annual percentage change, or year-on-year growth rate. This transformation into a percentage rate facilitates comparison across variables, all of which are also expressed as ratios or percentage changes, thereby enhancing the robustness of the regression analysis.

#### **3.2.3.2. Independent variables**

The first independent variable is Gross Domestic Product Growth (*GDPG*), which is used as a proxy for market size. GDP growth captures the overall productivity of an economy and reflects its capacity to mobilise domestic resources to produce goods and services. A broader and more productive economic base is generally associated with greater stability and resilience. In line with standard practice, this study uses real GDP growth, adjusted for inflation, as it better represents the actual expansion in economic output. The inclusion of GDP growth is further supported by economic theory. For instance, Keynesian perspectives argue that prudent debt accumulation can stimulate aggregate demand and increase economic output. However, empirical studies offer mixed evidence. Schclarek (2004), examining both developing and industrialised economies, found that lower external debt levels were associated with higher

growth, with little evidence of a nonlinear, inverted U-shaped relationship. In contrast, Panizza and Presbitero (2014) find no statistically significant evidence that public debt has a causal effect on growth. DeLong and Summers (2012), however, argue that expansionary fiscal policies, including debt-financed investment, can positively affect short-term growth. These findings support the inclusion of GDP growth as a determinant of multilateral debt behaviour.

The second independent variable is Total Foreign Exchange Reserves (*TFER*). Foreign reserves are generally considered a signal of economic stability and creditworthiness, serving both as a potential funding alternative and as a form of insurance for external creditors. Kebede et al. (2023) report that several Sub-Saharan African countries use reserves as collateral for external borrowing. Similarly, Fukuda and Kon (2010) find that foreign reserves are positively associated with external debt accumulation, while also influencing the maturity profile of debt. As reserves increase, debt maturities tend to shorten. However, a key concern arises in downturns, where reserves, ideally used to support recovery, may instead be redirected toward servicing debt (Jacob and Magungu, 2023). In this study, foreign reserves are included as an explanatory variable to capture this dynamic interaction with external debt.

The third independent variable is the Trade Balance (*BOP*), which reflects the net difference between a country's exports and imports of goods and services. A positive trade balance indicates a surplus and may reduce the need for external borrowing. Conversely, a trade deficit suggests reliance on external financing to cover the shortfall, particularly when imports significantly exceed export earnings. Butkus and Seputiene (2012) explain that persistent trade deficits are typically funded through external debt, raising sustainability concerns. Marie and Moslem (2023), in their 18-year study of public debt and trade balances in Iraq, found a significant inverse relationship between the two variables. Lane (2012) also highlights the importance of managing fiscal and trade deficits, referencing the eurozone's imposition of a fiscal ceiling to curb unsustainable borrowing. In this study, the trade balance is measured as a percentage of GDP to standardise it against the size of the economy and to capture relative rather than absolute performance.

The final independent variable is Government Expenditure (*GEXP*). This represents the level of fiscal outlays by the state in providing public goods and services, including infrastructure, education, health care, and security. The rationale for its inclusion lies in the assumption that increased government expenditure often necessitates higher levels of public borrowing. Over

time, the policy objective of balanced budgets has lost traction, as noted by Neaime (2014) and Szybowski (2018). Sawyer (2009) critiques the Ricardian equivalence hypothesis, which claims that changes in public deficits are offset by adjustments in private consumption. He argues that declining tax revenues and reduced private demand may force governments to increase expenditure, resulting in budget deficits. In such cases, external borrowing becomes a tool to meet rising fiscal needs. Like the trade balance, government expenditure is measured as a percentage of GDP to control for economic scale and facilitate comparison over time.

Each of these independent variables is grounded in both theoretical frameworks and empirical studies that highlight their relevance to sovereign debt dynamics. Their inclusion in the model is intended to provide a comprehensive understanding of the macroeconomic drivers of multilateral debt accumulation in Botswana.

### **3.3. Estimation Approach**

This research seeks to determine the extent of a relationship between economic variables that have been highly researched, and therefore many inferences can be drawn from the resulting model. It is therefore important that the research and analysis herein seek to be reliable, consistent and sound, while highlighting any anomalies that may occur.

The study will broadly be modelled using a quantitative analysis approach and, as has been outlined by Keller (2014) suggested approach to undertaking a regression analysis. By extension, all underlying assumptions thereto will be corroborated and tested to eliminate the likelihood of a spurious regression. This will call for tests of stationarity, unit root, cointegration, multicollinearity, goodness of fit, amongst others, to ensure scientific soundness of the study.

#### ***3.3.1. Unit Root Test (Test for Stationarity)***

As discussed above, the study assumes that there is a meaningful relationship between the dependent and independent variables. However, when working with time-series data, it is essential to establish whether the series is stationary. A stationary time series is one whose statistical properties, such as mean and variance, remain constant over time. Testing for stationarity helps avoid issues such as spurious regression, where the regression output shows a high R-squared value despite the absence of any real correlation between the variables (Granger and Newbold, 1999).

The presence of a unit root indicates that the time series is non-stationary. Identifying unit roots enables the researcher to determine whether the observed trends in the data are stochastic or deterministic in nature. A stochastic trend arises when the time series contains a unit root, meaning that shocks to the series will have a permanent effect. A deterministic trend, on the other hand, suggests that the time series is driven by a time-dependent structure, such as a linear or polynomial trend. In this study, unit root tests will be conducted using the approach proposed by Phillips and Perron (1987), which enables the detection of both types of trends. This step is essential to ensure that subsequent regression analyses are conducted on stationary series or are appropriately differenced where necessary.

### ***3.3.2. Co-Integration***

Cointegration analysis examines the existence of a long-run equilibrium relationship between two or more non-stationary time series. As defined by Jalil and Rao (2019), cointegration refers to a situation in which non-stationary variables are linked in such a way that their linear combination is stationary. This implies that despite short-run fluctuations, the variables move together over time, suggesting a stable long-term relationship. The decision to test for cointegration is guided by the stationarity properties of the time series under consideration.

In this study, it is anticipated that some of the variables will be stationary at level, while others will become stationary only after first differencing. Accordingly, the Autoregressive Distributed Lag (ARDL) Bounds Testing approach is the most appropriate method for cointegration analysis. The ARDL model, as applied in this context, is well-suited for small samples and mixed integration orders. It allows for the simultaneous estimation of long-run and short-run relationships among variables.

Contrary to the traditional requirement of prior unit root testing, Egbetunde and Fasanya (2013) argue that the ARDL model does not require all variables to be of the same integration order. Their study shows that the ARDL framework can be used regardless of whether the variables are integrated at level  $I(0)$ , first difference  $I(1)$ , or mutually cointegrated. The flexibility of this method makes it a strong candidate for the analysis conducted in this study. Nevertheless, where non-stationary data are encountered, it may still be necessary to transform the variables to ensure that stationarity assumptions are met. Hendry and Juselius (1999) emphasise that the

transformation and integration of non-stationary series are essential to preserving the validity of long-run relationships.

### ***3.3.3. Long-run and Short-run effects***

To fully understand the dynamics between the independent variables and the dependent variable, this study examines both long-run and short-run effects. The long-run relationship will be estimated through the cointegration regression derived from the ARDL framework. The short-run effects, in contrast, will be captured using the associated Error Correction Model (ECM), which quantifies how quickly deviations from the long-run equilibrium are corrected over time. The ECM allows for the identification of short-term fluctuations while accounting for the adjustment mechanism towards the long-run path.

The Granger Representation Theorem provides the theoretical basis for this modelling approach. It states that if a group of non-stationary variables is cointegrated, their relationship can be modelled using an ECM (Wilson, 2007). However, Wilson also raises a critique of the theorem, noting that imposing cointegration restrictions may eliminate important short-run dynamics from the model. This limitation is acknowledged in this study and will be considered when interpreting the results.

Another important consideration is that the ARDL model assumes a linear relationship between the dependent and independent variables. In practice, this may not always hold. The true relationship could be nonlinear, U-shaped or threshold-based. As a result, if the model detects only a weak linear relationship, this does not necessarily indicate the absence of a meaningful association. It may simply reflect the limitation of the linear framework. This underlines the importance of selecting explanatory variables that plausibly reflect causality and ensuring that the dataset used is representative of the underlying economic phenomena.

### ***3.3.4. Diagnostic tests***

To ensure the reliability and validity of the regression results, a set of diagnostic tests will be conducted following the estimation process. These tests are essential for confirming that the statistical assumptions underpinning ordinary least squares (OLS) and autoregressive distributed lag (ARDL) models are met. The diagnostics focus on detecting potential violations such as autocorrelation, heteroscedasticity, and structural instability, all of which could

undermine the interpretability of the estimated coefficients and bias inference (Gujarati and Porter, 2009; Wooldridge, 2016).

First, the Breusch–Godfrey LM test will be employed to assess the presence of serial correlation in the residuals. Serial correlation implies that error terms are correlated across time, which can lead to inefficient parameter estimates and biased standard errors. The Breusch–Godfrey test is preferred over the Durbin–Watson statistic in models that include lagged dependent variables, as it allows for higher-order autocorrelation structures and is valid in the presence of autoregressive regressors (Verbeek, 2017). A p-value greater than the significance level (typically 0.05) will indicate that the null hypothesis of no serial correlation cannot be rejected, thereby supporting the validity of the regression estimates.

Second, heteroscedasticity tests will be performed to determine whether the variance of the error terms is constant over time. Violation of this assumption—heteroscedasticity—can lead to inefficient and biased estimates of standard errors, which in turn affect hypothesis testing. In this study, Cameron and Trivedi's decomposition of the Information Matrix (IM) test will be used, given its robustness and capacity to detect different forms of heteroscedasticity (Cameron and Trivedi, 1990). A statistically insignificant p-value would suggest that the assumption of homoscedasticity holds.

In addition to these residual-based diagnostics, the stability of the model over time will be examined using the Cumulative Sum (CUSUM) and CUSUM of Squares tests, as introduced by Brown, Durbin, and Evans (1975). These recursive estimation procedures assess whether the model's coefficients remain stable across the sample period. This is particularly important in time-series econometrics, where structural breaks can distort the estimated relationships among variables and lead to misleading policy conclusions. The graphical output of the CUSUM tests plots the cumulative sum of recursive residuals against the critical bounds. If the plot remains within these bounds, the null hypothesis of parameter stability is not rejected. The CUSUM of Squares test provides a complementary assessment by detecting sudden shifts or volatility in the model specification.

### **3.4 Conclusion**

This chapter has outlined the research methodology adopted to examine the relationship between macroeconomic indicators and the accumulation of multilateral development bank debt in Botswana. Anchored in a positivist research philosophy, the study adopts a deductive

approach, drawing from established theoretical and empirical literature to develop a testable regression model. The methodology is designed to provide rigorous, empirical evidence on the drivers of MDB debt using a quantitative time-series framework.

The study utilises secondary data covering 37 years (1986–2023), obtained from credible national and international sources, including the Ministry of Finance, the Bank of Botswana, the World Bank, and UNCTAD. The dependent variable, namely external debt from MDBs, is analysed in relation to four key independent variables: real GDP growth, foreign exchange reserves, trade balance, and government expenditure. Each of these variables was selected for its theoretical relevance and empirical significance in sovereign debt and development finance literature.

To estimate the model, the study employs ARDL approach, which is suitable for small sample sizes and mixed levels of variable integration. The model allows for the estimation of both short-run and long-run relationships, with the ECM used to assess short-run dynamics. Prior to estimation, the data will be subjected to unit root and cointegration tests to ensure the appropriateness of the ARDL framework.

To validate the robustness of the estimated relationships, a suite of diagnostic tests will be performed. These include the Breusch-Godfrey test for serial correlation, Cameron and Trivedi's test for heteroscedasticity, and the CUSUM and CUSUM of Squares tests for model stability. These procedures are essential to ensuring that the model meets the necessary assumptions for reliable inference and that the findings can be confidently used to inform policy.

## **CHAPTER 4: DISCUSSION OF RESULTS**

### **4.1. Introduction**

This chapter presents and interprets the empirical findings of the study, examining the relationship between multilateral bank finance and key macroeconomic indicators in Botswana. The results are systematically analysed through a series of econometric tests to ensure validity, reliability, and robustness. Each section follows a structured flow, beginning with an exploration of the dataset through descriptive statistics and correlation analysis, followed by statistical diagnostics such as unit root tests, optimal lag selection, and cointegration analysis. These preliminary tests are essential for determining the appropriate estimation method and ensuring that the regression results are not spurious (Granger & Newbold, 1974).

The findings are then discussed in the context of Botswana's macroeconomic environment and debt management strategies, providing deeper insights into the economic meaning of the relationships uncovered. In particular, the study examines how economic growth, government expenditure, trade balance, and foreign exchange reserves influence Botswana's engagement with multilateral financial institutions. By drawing comparisons with previous empirical studies, the discussion highlights consistencies and deviations from established literature, offering a nuanced understanding of Botswana's external debt dynamics.

The organization of this chapter ensures coherence by linking each econometric test to the subsequent analytical step. The unit root tests determine the stationarity properties of the data, which informs the choice of the estimation model. The optimal lag selection process follows, identifying the appropriate time lag structure for the variables. The cointegration analysis then assesses whether long-term relationships exist between the variables, laying the foundation for the long-run and short-run econometric models.

### **4.2. Descriptive Statistics**

The first step in the empirical analysis involves summarizing the key characteristics of the dataset. The descriptive statistics shown in Table 5 provide insights into the central tendencies, dispersion, and distribution of the variables under consideration:

**Table 5: Descriptive Statistics**

<b>Variable</b>	<b>Obs</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
<i>EDMDB</i>	37	0.161	0.89	-0.293	5.374
<i>GDPG</i>	37	4.879	5.932	-14.144	19.45
<i>TFER</i>	37	0.049	0.157	-0.199	0.733
<i>BOP</i>	37	-0.392	12.69	-50.342	53.093
<i>GEXP</i>	37	27.756	3.827	19.401	36.143

*Source: Authors' estimation from Research data*

*Note: EDMDB= External Debt from MDBs; GDPG= Gross Domestic Product Growth ; TFER= Total Foreign exchange reserves; BOP= Trade Balances or Balance of Payments (as % of GDP); GEXP=Government expenditure (as % of GDP);*

The mean percentage change in multilateral bank loans (EDMDB) is relatively low at 0.161, indicating Botswana's cautious approach to borrowing. GDP growth (GDPG) has a mean of 4.879%, showing moderate economic expansion, but with significant volatility, as evidenced by a standard deviation of 5.932. The balance of payments (BOP) exhibits a negative mean (-0.392), suggesting frequent trade deficits, a key determinant of borrowing needs (Coulibaly et al., 2019). Government expenditure (GEXP) remains high at an average of 27.756% of GDP, reflecting Botswana's strong public sector involvement, in line with Morupule and Moffat (2017).

#### **4.3. Correlation Analysis**

The correlation analysis examines the degree of association between the variables, offering preliminary insights into potential relationships before proceeding to econometric modelling. As shown in Table 6, there is a strong positive correlation (0.745) between BOP and EDMDB, confirming that balance of payments deficits are associated with increased reliance on multilateral bank loans, as noted by Ehikioya et al. (2020). A weak negative correlation (-0.442) exists between GDPG and GEXP, suggesting that higher economic growth may not necessarily lead to increased government spending, which aligns with Botswana's historically conservative fiscal policies (Makoni, 2015). Additionally, the near-zero correlation between foreign reserves (TFER) and EDMDB suggests that reserves are not a primary determinant of external borrowing.

**Table 6: Correlation Analysis**

Variable	EDMDB	GDPG	TFER	BOP	GEXP
EDMDB	1.000				
GDPG	0.182	1.000			
TFER	-0.102	0.447	1.000		
BOP	0.745	0.246	0.016	1.000	
GEXP	0.107	-0.442	-0.330	0.159	1.000

Source: Authors' estimation from Research data

Note: EDMDB= External Debt from MDBs; GDPG= Gross Domestic Product Growth; TFER= Total Foreign exchange reserves; BOP= Trade Balances or Balance of Payments (as % of GDP); GEXP=Government expenditure (as % of GDP);

#### 4.4. Unit Root Tests

Unit root tests assess the stationarity of variables, a crucial step in time-series analysis. If a variable is non-stationary, regression results may be misleading due to spurious correlations (Granger & Newbold, 1974). Results of unit root tests are indicated in Table 7 and Table 8. The results indicate that EDMDB, GDPG, TFER, and BOP are stationary at level I(0), while government expenditure (GEXP) is non-stationary and requires differencing to achieve stationarity at I(1).

**Table 7: Augmented Dickey Fuller Unit Root Tests**

Variable	Trend and Constant	No Constant	Constant Only	Decision
EDMDB	-4.036**	-3.976***	-4.089***	I(0)
GDPG	-5.414 ***	-3.323***	-5.127***	I(0)
TFER	-2.921	-2.824***	-2.788**	I(0)
BOP	-4.273**	-4.352***	-4.295***	I(0)
GEXP	-2.813	0.002	-2.412	-

Source: Authors' estimation from Research data

Note: EDMDB= External Debt from MDBs; GDPG= Gross Domestic Product Growth; TFER= Total Foreign exchange reserves; BOP= Trade Balances or Balance of Payments (as % of GDP); GEXP=Government expenditure (as % of GDP);

T-statistics are displayed in the table. \*\*\*, \*\*, \* represent statistical significance at 1%, 5%, and 10%, respectively.

This suggests that most macroeconomic indicators in the study exhibit stable long-term trends, aligning with findings from Schanz (2019), who observed that Botswana's macroeconomic variables tend to be stable over time. The stationarity of EDMDB confirms that borrowing patterns are relatively consistent, supporting the argument that Botswana employs a structured and cautious debt strategy (Moreputla & Moffat, 2017).

**Table 8: Augmented Dickey Fuller Unit Root Tests**

Variable	Trend and Constant	No Constant	Constant Only	Decision
(EDMDB)	-	-	-	I(0)
D(GDPG)	-	-	-	I(0)
D(TFER)	-	-	-	I(0)
D(BOP)	-	-	-	I(0)
D(GEXP)	-5.324***	-5.395***	-5.444***	I(1)

Source: Authors' estimation from Research data

Note: EDMDB= External Debt from MDBs; GDPG= Gross Domestic Product Growth; TFER= Total Foreign exchange reserves; BOP= Trade Balances or Balance of Payments (as % of GDP); GEXP=Government expenditure (as % of GDP);

T-statistics are displayed in the table. \*\*\*, \*\*, \* represent statistical significance at 1%, 5%, and 10%, respectively.

This mixed order of integration necessitates the use of an autoregressive distributed lag (ARDL) model, which accommodates both I(0) and I(1) variables (Pesaran et al., 2001).

#### 4.5. Optimal lag selection

Selecting the appropriate lag length is critical for capturing the dynamic relationships among the variables. The Akaike Information Criterion (AIC) is used to determine the optimal lags. The optimal lag length selection suggests that different variables require different lag structures for the most accurate modelling (see Table 9). EDMDB and TFER require one lag, while GDPG needs two lags, indicating that economic growth responds more gradually to changes in macroeconomic conditions. This aligns with Coulibaly et al. (2019), who argue that external debt accumulation often follows economic cycles rather than immediate shocks. The need for different lag lengths further suggests that the relationships between debt, reserves, and economic growth may exhibit delayed effects rather than immediate responses.

**Table 9: Akaike Information Criteria Optimal Lag Selection**

Variable	Selected Lag
EDMDB	1
GDPG	2
TFER	1
BOP	0
GEXP	1

Source: Authors' estimation from Research data

Note: EDMDB= External Debt from MDBs; GDPG= Gross Domestic Product Growth ; TFER= Total Foreign exchange reserves ; BOP= Trade Balances or Balance of Payments (as % of GDP); GEXP=Government expenditure (as % of GDP);

#### 4.6. Bounds test for Cointegration

The bounds test for cointegration is conducted to determine if there exists a stable, long-run equilibrium relationship between multilateral bank debt and the selected macroeconomic indicators. Given that the variables in this study exhibit mixed orders of integration (I(0) and I(1)), the ARDL bounds testing approach is appropriate (Pesaran et al., 2001). Cointegration analysis is crucial because it helps assess whether fluctuations in economic growth, government expenditure, foreign exchange reserves, and trade balances lead to sustained changes in multilateral borrowing patterns. The presence of a long-run relationship would imply that these macroeconomic indicators jointly influence Botswana's external borrowing over time, whereas the absence of cointegration would suggest that any observed correlations are short-lived and may not persist beyond the short term.

As reflected in Table 10, the bounds test confirms the existence of a long-run relationship between multilateral bank debt (EDMDB) and the independent variables, as the F-statistic (6.126) exceeds the upper bound critical value, confirming the presence of a long-run relationship between multilateral bank finance and the independent variables.

**Table 10: Bounds Test for Cointegration**

<i>F-statistics = 6.126</i>		<i>Decision</i>
5% lower bound	5% upper bound	Cointegration
2.86	4.01	Exists

*Source: Authors' estimation from Research data*

This finding aligns with Ehikioya et al. (2020), who argue that macroeconomic indicators play a crucial role in shaping long-term external debt accumulation in African economies. The existence of cointegration suggests that Botswana's external borrowing decisions are not arbitrary but rather aligned with fundamental macroeconomic conditions. This finding reinforces the conclusions of Moreputla and Moffat (2017) that Botswana's debt management policies are structured and respond to sustained economic trends rather than short-term fluctuations.

#### 4.7. Long run model

The long-run model estimation allows for an assessment of the extent to which economic growth, foreign exchange reserves, trade balances, and government expenditure contribute to the country's external debt profile. The estimated coefficients in the long run model are indicated in Table 11. The adjusted R-squared value of 0.7806 indicates that approximately

78.06% of the variation in Botswana's borrowing from multilateral banks is explained by the independent variables, after adjusting for the number of predictors. This suggests a strong model fit, reinforcing the validity of the long-run relationship. The F-statistic (7.10, significant at 1%) further confirms that the independent variables, collectively, have significant explanatory power.

The long-run regression results indicate that BOP has a statistically significant positive relationship with EDMDB, confirming that worsening balance of payments increases Botswana's reliance on multilateral bank loans. This aligns with Coulibaly et al. (2019), who found that trade imbalances are a major driver of debt accumulation in African economies. Their research found that for most SSA countries, the reason for this accumulation was the 2008 global financial crisis and the 2014 Terms of Trade ('TOT) shock (Al-Abri & Gani, 2016). This coincided with periods of globally low interest rates, large infrastructure financing gaps, and periods of countercyclical fiscal policies. The concentration of primary commodities, being a significant component of export (whose commodity prices are volatile), leads to an increase in debt. The same is true for Botswana; notable debt accumulation periods coincided with the Global financial crisis and the COVID-19 pandemic.

On the other hand, economic growth, foreign exchange reserves, and government expenditure are statistically insignificant in influencing long-term borrowing patterns. This means that in the long run, economic growth, foreign exchange reserves, and government expenditure have no statistically significant impact on MDB debt financing. The insignificance of economic growth aligns with Makoni (2015), who found that Botswana's economic expansion is primarily self-financed through diamond revenues rather than debt accumulation. Similarly, the insignificance of foreign exchange reserves suggests that Botswana does not rely on its reserves as collateral for borrowing, reinforcing the findings of Schanz (2019). This finding does however, contrast with Chirume (2022), who found a positive association between government expenditure and public debt in other African countries.

The long run results suggest that Botswana's multilateral bank finance is largely driven by external trade conditions rather than domestic macroeconomic policies. This finding highlights the importance of strengthening Botswana's export sector and trade position to reduce reliance on external borrowing.

**Table 11: Long run estimates**

	<b>Coef</b>	<b>Std. Err.</b>	<b>t</b>	<b>P &gt;  t </b>
<i>GDPG</i>	-0.059	0.057	-0.95	-0.154
<i>TFER</i>	0.838	2.024	0.15	0.885
<i>BOP</i>	0.051***	0.013	4.48	0.000
<i>GEXP</i>	-0.011	0.040	-0.58	0.569
<i>R-squared</i>	0.8387			
<i>Adj R-squared</i>	0.7806			
<i>F-Statistics</i>	7.10***			
<i>Observations</i>	35			

Source: Authors' estimation from Research data

Note: EDMDB = External Debt from MDBs; GDPG = Gross Domestic Product Growth; TFER = Total Foreign exchange reserves; BOP = Trade Balances or Balance of Payments (as % of GDP); GEXP = Government expenditure (as % of GDP); The dependent variable is EDMDB. Standard errors are in parentheses. T-statistics are displayed in the table. \*\*\*, \*\*, \* represent statistical significance at 1%, 5%, and 10%, respectively. Source: Authors' estimation from Research data

#### 4.8. Error Correction Model and Short Run Estimates

While the long-run model provides insights into sustained economic relationships, the short-run dynamics of multilateral bank finance are equally important. The Error Correction Model (ECM) measures how quickly deviations from the long-run equilibrium adjust in the short term. A significant error correction term indicates that the system corrects itself when economic shocks occur.

**Table 12: Error Correlation Model**

	<b>Coef</b>	<b>Std. Err.</b>	<b>t</b>	<b>P &gt;  t </b>
<i>D(EDMDB)(-1)</i>	0.103	0.131	0.78	0.445
<i>D(GDPG) (-1)</i>	-0.050**	0.024	-2.08	0.048
<i>D(GDPG) (-2)</i>	0.012	0.022	0.55	0.585
<i>D(TFER) (-1)</i>	1.621	1.321	1.23	0.231
<i>D(BOP)</i>	0.046***	0.009	5.06	0.000
<i>D(GEXP) (-1)</i>	0.064	0.054	0.241	0.241
<i>C</i>	0.677	1.062	0.64	0.529
<i>ECM (-1)</i>	-0.897***	0.133	-5.28	0.000
<i>R-squared</i>	0.6881			
<i>Adj R-squared</i>	0.5758			
<i>F-Statistics</i>	6.13***			
<i>Observations</i>	35			

Source: Authors' estimation from Research data

Note: EDMDB = External Debt from MDBs; GDPG = Gross Domestic Product Growth ; TFER = Total Foreign exchange reserves ; BOP = Trade Balances or Balance of Payments (as % of GDP); GEXP = Government expenditure (as % of GDP);

The dependent variable is EDMDB. Standard errors are in parentheses. T-statistics are displayed in the table. \*\*\*, \*\*, \* represent statistical significance at 1%, 5%, and 10%, respectively. Adj-R<sup>2</sup> = 0.576, F-statistics = 6.13 (Prob = 0.00002).

The error correction term is negative and statistically significant (-0.897\*\*\*), indicating a faster speed of adjustment. This suggests that when Botswana's borrowing deviates from its long-term equilibrium level, the system corrects itself rapidly, reinforcing the sustainability of Botswana's debt management strategies (Moreputla & Moffat, 2017). The negative and significant short-run coefficient of economic growth (-0.050\*\*) suggests that higher economic growth reduces short-term reliance on multilateral bank finance. This supports the argument by Cormier (2021) that Botswana adopts counter-cyclical borrowing patterns, seeking external financing primarily during economic downturns rather than during periods of strong growth.

Similarly, the trade balance (BOP) remains a significant determinant of multilateral borrowing in the short run, confirming that external financing increases when Botswana experiences trade deficits. The insignificance of foreign exchange reserves and government expenditure in the short run further emphasizes that external borrowing decisions are more responsive to external trade conditions than to domestic policy measures. Therefore, foreign exchange reserves and government expenditure do not have a statistically significant effect on MDB debt financing in the short term.

As reflected in Table 12, the adjusted R-squared value of 0.5758 suggests that 57.58% of the variation in the dependent variable is explained by the model after accounting for degrees of freedom. While lower than the long-run model, this is reasonable for an error correction model, where short-term dynamics tend to be more volatile. The F-statistic (6.13, significant at 1%) confirms that the independent variables jointly influence short-run adjustments in Botswana's external borrowing.

#### **4.9. Diagnostic Tests**

To ensure the reliability of the regression results, several diagnostic tests are conducted to check for serial correlation, heteroscedasticity, and model stability. These tests confirm whether the estimated models meet the necessary statistical assumptions for validity. The diagnostic tests (Table 13) confirm the validity and robustness of the estimated model. The Breusch-Godfrey test for serial correlation yields a p-value of 0.3072, indicating that autocorrelation is not present, which ensures that the regression estimates are unbiased. Similarly, the heteroscedasticity test returns a p-value of 0.4204, suggesting no significant variance instability in the model.

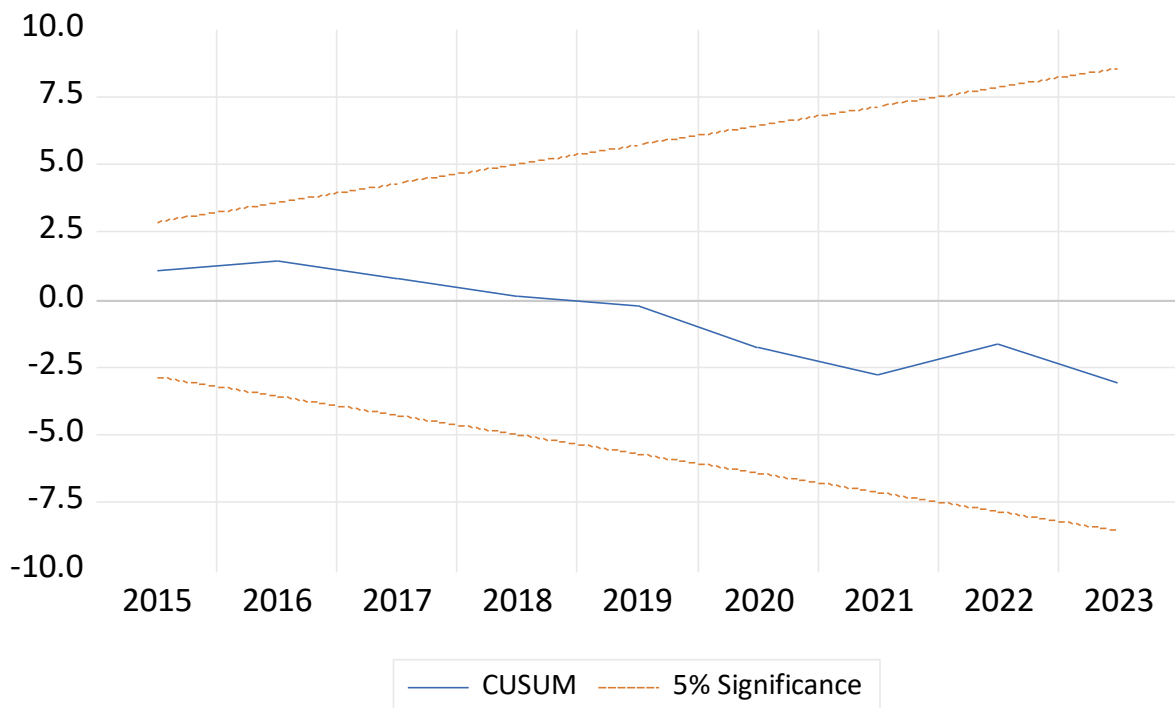
**Table 13: Diagnostic tests**

Diagnostic test	Test	Test statistic	Prob.
Serial correlation	Breusch–Godfrey LM test for autocorrelation	1.043	0.3072
Heteroscedasticity	Cameron & Trivedi's decomposition of the IM-test	35.00	0.4204

Source: Authors' estimation from Research data

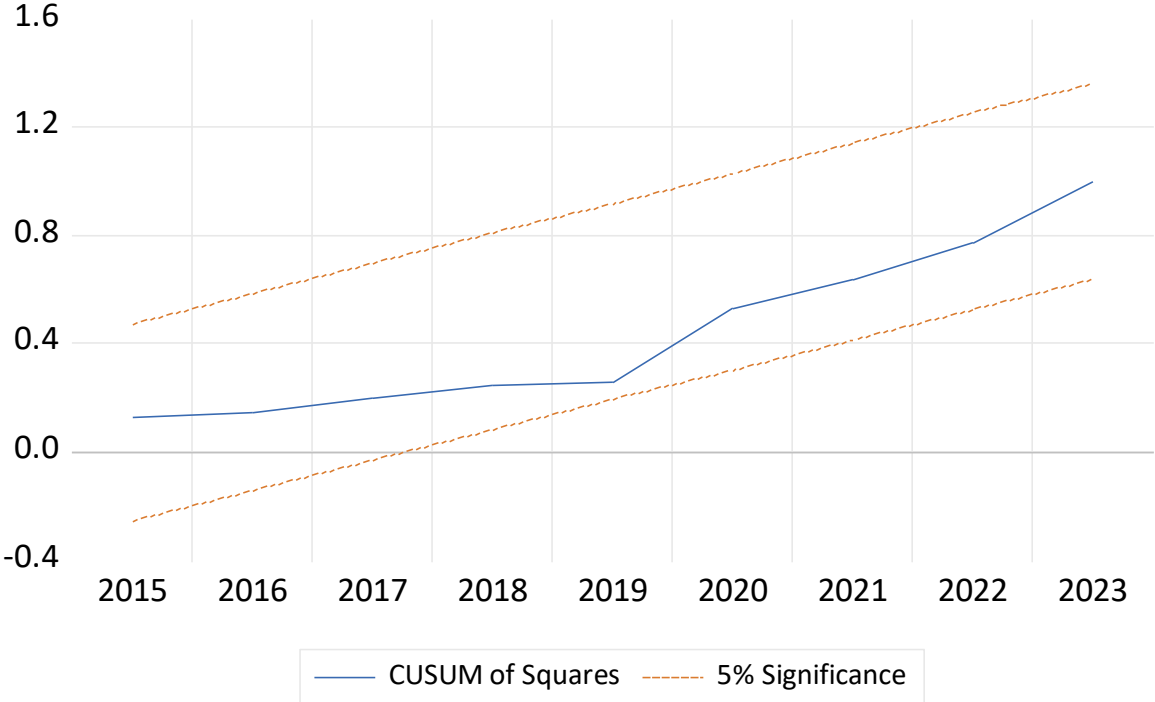
Additionally, the CUSUM and CUSUM of Squares tests (Figures 4.1 and 4.2) provide further insights into model stability. The CUSUM test remains within the critical bounds, confirming that the estimated coefficients remain stable over time. This is crucial in time-series modelling, as structural instability could distort the interpretation of relationships among macroeconomic variables. Likewise, the CUSUM of Squares test also falls within the acceptable range, reinforcing the conclusion that there are no sudden shifts or volatility issues in the dataset.

**Figure 5: Cusum Test for Model Stability**



Source: Authors' estimation from Research data

**Figure 6: Cusum of Squares Test for Model Stability**



Source: Authors' estimation from Research data

The combination of these diagnostic tests confirms that the regression results are statistically reliable and can be used for meaningful policy implications regarding Botswana’s multilateral bank finance strategy.

**4.10. Discussion of Results**

This section provides an in-depth analysis of the study’s empirical findings, explaining their economic significance and positioning them within theoretical and empirical literature. The empirical findings provide a basis for evaluating the null hypothesis, which states that economic growth, foreign exchange reserves, trade balances, and government expenditure do not significantly influence Botswana’s borrowing from multilateral banks. Eventually, trade balances significantly impact external borrowing, leading to the rejection of the null hypothesis for this variable, while economic growth, foreign exchange reserves, and government expenditure remain insignificant, resulting in a failure to reject the null hypothesis for these variables. In the short run, economic growth and trade balances exhibit statistically significant effects on borrowing, necessitating the rejection of the null hypothesis for these variables, whereas foreign exchange reserves and government expenditure remain insignificant, supporting the null hypothesis. These findings reinforce the role of external trade conditions in Botswana’s debt accumulation while highlighting the country’s cautious fiscal approach.

#### ***4.10.1. The Relationship Between Economic Growth and Multilateral Bank Finance***

The study finds that economic growth does not have a statistically significant effect on Botswana's borrowing from multilateral banks in the long run. This suggests that economic expansion alone does not drive external debt accumulation. From an economic perspective, this finding aligns with Botswana's fiscal strategy, which prioritizes revenue generation from domestic sources, particularly mineral exports, over reliance on external debt. Unlike many developing countries that use external borrowing to finance growth, Botswana has historically maintained a disciplined approach to debt, utilizing its sovereign wealth funds to support development projects instead of accumulating large multilateral loans (Makoni, 2015; Siphambe et al., 2005).

This result can also be interpreted through the lens of Ricardian Equivalence Theory, which posits that in economies with high savings and strong government credibility, increases in public debt may not necessarily stimulate economic activity because rational agents anticipate future tax obligations and adjust their consumption accordingly (Barro, 1979). Botswana's relatively low reliance on external financing suggests that government borrowing does not serve as a primary engine of economic growth, aligning with the Ricardian perspective.

Empirically, this finding contrasts with studies such as Ehikioya et al. (2020), which show that in many African economies, external debt plays a significant role in fostering economic expansion. However, it supports Moreputla and Moffat (2017), who highlight Botswana's unique economic model, where growth is largely self-financed through mineral revenues and strategic public investment.

From a policy standpoint, these findings suggest that Botswana should continue leveraging its domestic revenue base to sustain growth while maintaining its cautious borrowing approach. However, the government may need to reassess whether its fiscal conservatism is limiting opportunities for high-return public investments in infrastructure and diversification efforts.

#### ***4.10.2. The Influence of Government Expenditure on External Borrowing***

Government expenditure does not significantly affect Botswana's multilateral bank borrowing in either the short or long run. This finding suggests that changes in government spending are not directly linked to external debt accumulation, indicating that Botswana does not borrow primarily to finance public expenditures. This aligns with the Neoclassical Growth Model,

which suggests that long-term economic growth is driven by productivity improvements rather than fiscal expansion (Solow, 1956). Botswana's government appears to adhere to this principle by funding expenditure primarily through tax revenue and mineral rents rather than through debt issuance.

Empirical comparisons reveal a divergence from findings in other African countries, where government spending is often a key driver of external debt accumulation (Chirume, 2022). The difference may be attributed to Botswana's prudent fiscal policies, which ensure that expenditure levels remain sustainable without excessive reliance on external financing (Moreputla & Moffat, 2017).

The policy implication of this result is that Botswana's fiscal sustainability remains strong, but there may be room to enhance counter-cyclical fiscal policies. For example, during periods of economic slowdown, targeted increases in government spending financed through moderate external borrowing could stimulate domestic demand and support diversification initiatives.

#### ***4.10.3. The Role of Trade Balances in Debt Accumulation***

The trade balance is the only variable that significantly affects Botswana's multilateral bank borrowing in both the short and long run. The positive relationship indicates that when Botswana experiences trade deficits, it increases external borrowing to stabilize its economy. This finding is well-grounded in economic theory. Intertemporal Trade Models suggest that countries experiencing trade imbalances often resort to borrowing to smooth consumption and investment over time (Obstfeld & Rogoff, 1995). Given Botswana's reliance on diamond exports, fluctuations in global demand can lead to trade deficits, necessitating temporary external financing to offset balance of payments pressures.

The result aligns with empirical studies such as Coulibaly et al. (2019), demonstrating that Sub-Saharan African countries with persistent trade imbalances often rely on external debt to finance current account deficits. In Botswana's case, the COVID-19 pandemic provides a real-world example of this dynamic. In 2020, diamond exports declined sharply due to reduced global demand, leading to a widening trade deficit. In response, the government secured a \$250 million loan from the World Bank to support economic recovery (World Bank, 2021). From a policy perspective, these findings highlight the need for trade diversification. While external borrowing can help smooth temporary trade imbalances, long-term reliance on a single export

commodity increases vulnerability to external shocks. Policymakers should prioritize economic diversification strategies to mitigate the risk of trade-induced debt accumulation.

#### ***4.10.4. The Impact of Foreign Exchange Reserves on External Borrowing***

Foreign exchange reserves do not significantly influence Botswana's borrowing from multilateral banks. This suggests that the government does not use reserves as a determinant of external financing, contradicting theories that suggest reserves serve as collateral for international borrowing (Elhiraika, 2007).

The insignificance of foreign reserves can be explained by Botswana's debt management strategy, which prioritizes reserve accumulation for self-insurance rather than as a borrowing tool. This finding contrasts with studies such as Schanz (2019), which show that many African countries use reserves strategically to secure external financing. Instead, Botswana appears to follow the Precautionary Motive Hypothesis, where reserves are primarily held to safeguard against future economic shocks rather than to leverage borrowing capacity.

This finding has two key policy implications. First, while Botswana's high foreign reserves provide economic stability, policymakers should explore opportunities for strategic reserve deployment in productive investments. Second, Botswana's strong reserve position indicates that the country could secure better borrowing terms from multilateral banks, suggesting that policymakers should reassess their approach to negotiating concessional loans.

## CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

### 5.1. Introduction

This study set out to investigate Botswana's historically low reliance on MDB financing despite its macroeconomic stability and growth ambitions. By analysing the relationship between key macroeconomic indicators, namely GDP growth, foreign exchange reserves, trade balances, and government expenditure, and MDB debt accumulation, the research aimed to uncover the drivers behind Botswana's cautious debt strategy. The findings, derived from quantitative analysis of time-series data (1986–2023), provide critical insights into how Botswana balances fiscal prudence with development financing needs. This chapter synthesizes the study's conclusions, offers policy recommendations grounded in empirical evidence, and identifies avenues for future research to expand on this foundational work.

### 5.2. Summary and Conclusion

The study's findings reveal a nuanced relationship between Botswana's macroeconomic conditions and its MDB debt accumulation. First, the BOP emerged as the sole statistically significant determinant of MDB borrowing in both the short and long run, corroborating theories that trade deficits drive external financing needs (Coulibaly et al., 2019; Ehikioya et al., 2020). During periods of trade imbalance, Botswana increased borrowing to stabilize its economy, as seen during the COVID-19 pandemic when diamond exports plummeted (World Bank, 2021).

Second, GDP growth exhibited a paradoxical short-term negative association with MDB debt, suggesting counter-cyclical borrowing behaviour. This aligns with Botswana's preference for self-financing growth through diamond revenues during economic expansions (Makoni, 2015; Siphambe et al., 2005).

Third, foreign exchange reserves and government expenditure showed no significant impact on MDB debt in either time horizon. This challenges conventional theories positing reserves as collateral for borrowing (Elhiraika, 2007) and underscores Botswana's strategy of reserving foreign assets for crisis mitigation rather than debt leverage (Schanz, 2019).

Finally, the absence of a long-term link between government spending and debt highlights Botswana's fiscal discipline, contrasting with debt-driven expenditure patterns in other African

nations (Chirume, 2022). These findings collectively affirm Botswana's unique model of leveraging mineral wealth and conservative fiscal policies to minimize reliance on external debt, even amid ambitious diversification agendas (Moreputla & Moffat, 2017).

### **5.3. Policy Recommendations**

The econometric analysis highlights Botswana's strategic approach to debt management. Unlike many developing nations where economic growth, public expenditure, and foreign reserves directly influence external borrowing, Botswana's multilateral bank financing patterns are primarily shaped by its trade balance and counter-cyclical debt policies. The country's preference for accumulating reserves rather than using them to leverage additional debt further underscores its conservative fiscal stance.

The findings of this study have important policy implications, and the following policy recommendations are proposed. Firstly, Botswana's heavy reliance on diamond exports exacerbates trade imbalances during global demand shocks. Botswana should continue strengthening its foreign trade position to minimize reliance on multilateral bank finance during trade deficits. Policymakers should prioritize diversifying export sectors (e.g., tourism, renewable energy, and agro-processing) to reduce BOP volatility and associated debt needs. This aligns with the National Development Plan's diversification goals and echoes recommendations by Lashitew et al. (2021) for resource-rich economies to build resilient trade structures.

Secondly, while Botswana's reserves provide stability, their underutilization as a development financing tool represents a missed opportunity. While maintaining high reserves has provided economic stability, the government should explore more efficient ways to deploy these reserves for strategic investments. The government could allocate a portion of reserves to high-return infrastructure projects or sovereign wealth funds, as seen in Norway's model, to reduce future borrowing needs without compromising crisis preparedness (Schanz, 2019).

Thirdly, the short-term inverse relationship between GDP growth and MDB borrowing suggests that Botswana borrows selectively during downturns. Formalizing counter-cyclical fiscal rules, such as debt ceilings tied to GDP growth phases, could institutionalize this prudence while enabling targeted stimulus during crises, as proposed by Cormier (2021).

Lastly, Botswana's strong creditworthiness (evidenced by low debt-to-GDP ratios) positions it to negotiate better MDB loan terms, such as longer maturities or lower interest rates. Engaging with newer institutions like the New Development Bank, which emphasizes "developing country-friendly" terms (Qobo & Soko, 2015), could diversify funding sources while aligning with national priorities.

Botswana's approach to multilateral bank finance reflects a well-managed and prudent economic strategy that balances the need for external support with long-term fiscal sustainability.

#### **5.4. Avenue for future studies**

While this study provides critical insights into Botswana's MDB debt dynamics, several areas warrant further exploration. First, qualitative research could examine the political economy of debt decision-making, particularly how institutional autonomy (or lack thereof) in Botswana's Debt Management Office influences borrowing patterns, as hinted by Cormier (2021). Second, sector-specific analyses of MDB-funded projects (e.g., infrastructure vs. education) could reveal whether debt utilization aligns with diversification goals. Third, comparative studies with other upper-middle-income African nations (e.g., Namibia, South Africa) might contextualize Botswana's debt strategy within regional trends. Finally, investigating the role of non-traditional lenders (e.g., China's bilateral financing) could shed light on how Botswana navigates shifting global development finance architectures. Such research would build on this study's quantitative foundation while addressing gaps in understanding Botswana's evolving economic landscape (Makoni, 2015).

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