THE INFLATIONARY EFFECTS OF ELECTIONS: POLITICAL BUSINESS CYCLES IN UGANDA (2010 – 2024)

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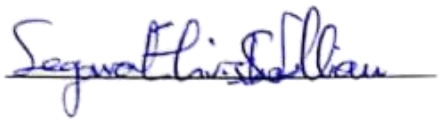
DECLARATION

I, **Segawa Elvis William**, hereby certify that this dissertation is my original work and has been submitted in partial fulfillment of the requirements for the award of the Bachelor of Science in Economics and Statistics degree at Uganda Christian University. It has not been submitted to any other academic institution for any award. Where the work of others has been used, it has been duly acknowledged through proper citations and clear references.



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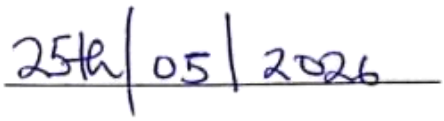

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APPROVAL

This is to certify that the dissertation by **Segawa Elvis William**, Registration Number **M23B34/029**, entitled *"The Inflationary Effects of Elections: Political Business Cycles in Uganda (2010-2024)"*, has been carried out under my supervision and is hereby approved for submission to the School of Business in partial fulfillment of the requirements for the award of the Bachelor of Science in Economics and Statistics degree of Uganda Christian University.

Signature: _____ **Date:** 25th May 2026

MRS. ELSIE MIREMBE NSIYONA

DEDICATION

I dedicate this study to the economists, central bankers, and future researchers who labour to make sense of the fragile meeting point between politics and the economy, the ***wanainchi*** of Uganda: the market lady, the farmer, the teacher, and the parent who count on steady prices to feed their families and leave as nobly as possible. Hopefully, this work will be a useful reminder to politicians and policymakers of the real costs that electoral cycles and short-term political incentives impose on household budgets. Most importantly, may these findings contribute to policy making which prevents unnecessary hardships to households while providing them with honest and durable price stability for each and every home in Uganda.

ACKNOWLEDGEMENTS

First and foremost, I thank God. If it were not for His mercy and grace, I would not have made it to this point in my life. There were moments when I felt tired, confused, overwhelmed, and even unsure whether God would carry me through all the seasons, but He did.

To Mum and Dad, thank you will never be enough. You believed in me when I could not believe in myself. You sacrificed so much to keep me in school, prayed for me, encouraged me, and stood by my side through it all. This degree is ours, not mine.

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LIST OF ABBREVIATIONS

ADF: Augmented Dickey-Fuller

ARDL: Autoregressive Distributed Lag

BoU: Bank of Uganda

CPI: Consumer Price Index

CUSUM: Cumulative Sum

EAC: East African Community

ECM: Error Correction Model

FD: Fiscal Deficit

FDI: Foreign Direct Investment

FY: Fiscal Year

GDP: Gross Domestic Product

GDPG: GDP Growth

IMF: International Monetary Fund

INF: Inflation

MDAs: Ministries, Departments, and Agencies

MoFPED: Ministry of Finance, Planning and Economic Development

MoLG: Ministry of Local Government

NRM: National Resistance Movement

NPA: National Planning Authority

OLS: Ordinary Least Squares

PBC: Political Business Cycle

UGX: Ugandan Shilling

UBOS: Uganda Bureau of Statistics

URA: Uganda Revenue Authority

ABSTRACT

The study examined the inflationary effects of elections in Uganda, using 60 quarterly observations from 2010Q1 to 2024Q4, which represent three presidential elections (2011, 2016 and 2021). To account for both the long-run relationship and the causal pathway between electoral cycles, fiscal deficits, money supply growth, and inflation, an Autoregressive Distributed Lag Error Correction Model (ARDL-ECM) was estimated along with Toda-Yamamoto Granger non-causality test.

The ARDL Bounds Test gave a result of cointegration at 1 per cent significance level (F-statistic = 5.225). The quarterly model accounted for 96.25% of the inflation (R^2 = 0.962) in Uganda. An important discovery was that inflation was not only kept low during the election quarter (Q1, January–March of election years), but that it jumped substantially in the second quarter of election years (April-June), as post-election fiscal loosening was accompanied by monetary expansion. Broad money supply growth (LN_MSG) was the dominant long-run driver of inflation (coefficient = 13.554, p = 0.002). The Error Correction Term of -0.244 (p = 0.002) confirmed that 24.4% of quarterly deviations from the long-run equilibrium were corrected each quarter. The Granger causality analysis confirmed that Fiscal Deficit (FD) drove LN_MSG (x^2 = 10.193, p = 0.001), LN_MSG and inflation reinforced each other bidirectionally, and inflation fed back into fiscal deficits through the *Olivera-Tanzi effect*. All post-estimation diagnostics confirmed model reliability.

The findings confirmed that Uganda exhibited a conditional Political Business Cycle in which electoral incentives generated temporary price suppression in the election quarter followed by inflationary surges in the post-election quarter. The study recommended binding pre-election fiscal rules and pre-emptive monetary policy protocols for the Bank of Uganda.

Keywords: Political Business Cycle, Inflation, Electoral Cycles, Uganda, ARDL-ECM, Money Supply Growth, Fiscal Deficit, Granger Causality, 2010-2024.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter presented the background of the study, problem statement, study objectives, research questions, scope of the study (content, time, and geographical scope), significance of the study, and the conceptual framework that was used for analysis in this study.

1.1 Background of the Study

The Political Business Cycle (PBC) theory explains how a government can modify its economic policies to gain a short-term political advantage. This is typically accomplished through expansionary fiscal policy, such as increases in government spending on civil servant wages, transfer payments to households and groups, or improved delivery of services through the initiation or acceleration of infrastructure projects in mid-financial year (FY). At the same time, governments can resort to monetary easing (expansionary monetary policy), such as cutting interest rates, injecting more liquidity into the banking system, or expanding money supply growth through the central bank. These policies put strain on the economy, and if the aggregate supply of real goods and services is not sufficient to satisfy demand, the result is usually a high rate of inflation, high budget deficits, and stringent fiscal measures following the elections.

Initial studies show that electoral incentives affect government spending, taxes, and the expansion and contraction of the money supply (Nordhaus, 1975; Rogoff & Sibert, 1988). These effects are especially pronounced in young democracies and in economies with limited institutional quality, such as many in Sub-Saharan Africa, Latin America, and Eastern Europe, where the autonomy of the central bank, the accountability of parliament, and fiscal rules are limited (Brender & Drazen, 2005; Nguyen, 2023).

The case of Uganda is illustrative of these dynamics. After the one-party system was replaced by the Constitution of 1995 and the restoration of multiparty politics in 2005, the country held national elections every five years, including in 1996, 2001, 2006, 2011, 2016, 2021, and January 2026. Political power has remained vested in the National Resistance Movement (NRM) under President Yoweri Museveni, who has been in office since 1986. Changes to the constitutional framework over this period shaped the broader electoral environment in which fiscal and monetary decisions were made.

Elections are a costly affair. The Electoral Commission indicated that the 2025/26 elections were likely to cost approximately UGX 1.387 trillion, roughly two times the expenditure on the 2020/21 elections (Wanyenya, 2025). These costs are drawn from the Consolidated Fund, reducing allocations to other priorities. Election years are often marked by additional budget allocations or off-budget spending that significantly relaxes spending constraints (Parliament Watch, 2025).

Such spending occurs in an environment of limited supply capacity, including constrained agricultural production, unpredictable energy availability, and inadequate transport infrastructure, where output cannot keep pace with pre-election demand. When demand exceeds available supply in this way, upward pressure on prices affects both producers, through higher input costs, and consumers, through reduced purchasing power. The effects of fiscal impulses are amplified when the central bank's monetary policy is also relaxed through reductions in interest rates, injections of liquidity, or a more permissive stance on money supply growth. Fiscal dominance of this kind is not conducive to effective monetary policy in addressing inflationary pressures and is likely to increase price instability.

The channels can be traced through Uganda's recent history. Total expenditure exceeded UGX 7 trillion in the 2010/11 election year when a supplementary budget of UGX 602 billion was allocated. This was followed by increases in deficits, credit growth, money supply growth, exchange rate pressures, and an inflation rate of 18.7% in 2011 (IMF, 2011; The EastAfrican, 2010). Several factors contributed to this outcome, including pre-election budget expansion and campaign expenditure drawing on both public and private resources (Helle & Rakner, 2014). Quarterly data showed that the inflation spike was not immediate. The election quarter (Q1 2011: January to March) recorded some downward pressure on consumer prices, before inflation began accelerating from Q2 2011 as the effects of post-election fiscal loosening and monetary expansion fed through to consumer prices, reaching 21.4% by Q3 and approximately 29% by Q4 2011.

Prior to the 2016 elections, headline inflation stood at 7.7% in February 2016 (Ministry of Finance, 2016). Inflation subsequently declined, averaging 4.7% in the months following the election (World Bank, 2017), consistent with the stimulus-stabilisation cycle described by PBC theory. The PBC framework holds that governments frequently adopt expansionary fiscal and monetary policies ahead of elections to boost short-term economic activity. Following elections, once the electoral period concludes, governments typically restore macroeconomic discipline to correct the imbalances generated during the election period (Nordhaus, 1975).

The 2021 election period recorded significant political expenditure. According to ACFIM (2023), UGX 796 billion was spent across 29 districts in political expenditure alone. Extrapolated nationally, this amounts to approximately UGX 3.98 trillion, or around 8.6% of the national budget for FY 2020/21. Expenditure by Members of Parliament on constituency campaigns added to this total (Parliament Watch, 2021). Despite this scale of spending, headline inflation remained low at 2.2% in 2021, suggesting that the Bank of Uganda's monetary policy stance under the inflation targeting framework introduced in 2011 helped moderate inflationary pressures. The contrast between the 2011 outcome (18.7%) and the 2021 outcome (2.2%) highlights the conditional nature of the PBC mechanism and underscores the need for rigorous empirical examination of inflation across election cycles on a quarterly basis.

Domestic dynamics were compounded by external and behavioural factors. Electoral uncertainty contributed to delays in both domestic and foreign investment decisions, constraining supply-side capacity. The immediate effects included domestic inflation and exchange rate depreciation, driven by rising food and fuel prices. These factors tended to occur concurrently during election periods, increasing the likelihood that pre-election stimulus produces significant price and exchange rate volatility (Daily Monitor, 2023; Reuters, 2025).

Comparative evidence shows that the scale of political budget cycles varies with institutional context. Cycles were found to be smaller in countries with independent central banks, binding budget rules, and legislatures with a low tolerance for fiscal risk (Drazen, 2001). With Uganda's public debt at 53% of GDP as of 2024 (Reuters, 2025) and persistent supply-side constraints, the economy remains susceptible to inflationary episodes around elections.

Despite this, most existing research on Uganda has been descriptive, focused predominantly on the 2011 episode. A gap remains in the form of a rigorous empirical analysis, on a quarterly basis, covering the three most recent election cycles (2011, 2016, and 2021), using high-frequency data to identify the precise timing of the electoral-inflationary transmission mechanism. This study is designed to fill that gap by examining whether Uganda recorded statistically significant inflation around election quarters, identifying the primary transmission channels (fiscal deficits and money supply growth), and assessing the extent of moderation by institutional and external conditions.

1.2 Statement of the Problem

Since the pronouncement of the 1995 Constitution, Uganda had held regular elections since then. Monetary expansions and fiscal looseness were a feature of all election periods, that tended to cause short-term growth and inflationary pressures. It is possible to provide one example in which inflation rate rose to 18.7% in an election year of 2011 which was primarily driven by high government spending and expansion of money supply (IMF, 2011). While overall inflation has calmed down to an average of 3.4% in FY2024/25, there were structural pressures evident in the prices of food and services, and were expected to further affect household welfare in the lead up to the elections due to pre-electoral fiscal measures (Sunrise Uganda, 2025).

Such recurrent trends were observed but there was a lack of empirical evidence on a quarterly frequency level to determine whether there are systematic trends in Uganda's inflation rates from 2010 to 2024 that can be attributed to electoral cycles of the PBC theory. Most analyses were of individual events or of major macroeconomic fluctuations over a year, but do not specify the exact timing of the electoral transmission mechanism, nor do they distinguish between the various quarters of a year. The lack of empirical evidence had significant policy consequences as policymakers could be tempted to ignore the inflationary costs of policies based on the elections, sacrifice price stability, lower welfare of households, or decrease macroeconomic resilience in Uganda.

1.3 Purpose of the Study

The study sought to investigate how elections affected Uganda's inflation process since 2010, test the validity of the Political Business Cycle theory in Uganda and pinpoint the exact timing in a quarter of the inflationary transmission mechanism.

1.4 Specific Objectives of the Study

i. To examine the quarterly trend of inflation in Uganda during election and non-election quarters between 2010 and 2024.

ii. To investigate the association between fiscal and monetary policy of government and inflation during election quarters.

iii. To determine whether Uganda shows signs of Political Business Cycles in terms of inflationary effects of elections, using quarterly ARDL-ECM analysis.

1.5 Research Questions

i. What has been the trend of inflation in Uganda between the election and non-election periods of the past 15 years starting in 2010?

ii. What are the relationships between fiscal and monetary policies of government and inflation rates in the election quarters?

iii. Are there evidences of Political Business Cycles in Uganda at quarterly frequency that impact on inflation?

1.6 Justification of the Study

Elections play a very important role in democracy and in most developing countries, they are typically accompanied by a surge in spending and lax monetary policies. Such practices can have a negative impact on macro-economic stability, leading to inflationary pressure, a fiscal deficit and higher levels of debt. Uganda conducted regular elections since 1996, but there was little empirical evidence on the effect of electoral cycles on inflation based on the PBT, on a quarterly basis. Much existing research on Uganda was conducted using annual data or separate studies of particular fiscal cycles, instead of an in-depth analysis of the links between electoral cycles and inflation outcomes at high frequencies.

This research filled that gap by providing empirical evidence of the inflationary effect of elections in Uganda based on 60 observations quarterly from three presidential elections (2011, 2016, 2021). The quarterly method enabled the determination when the electoral transmission mechanism occurs, that is, if the electoral response occurs in the same quarter as the election or in later quarters, information which annual data does not provide. The main aim was to generate reliable, evidence based, high-frequency knowledge for policy makers, Bank of Uganda and fiscal authorities to formulate rules and put in place safeguards to deal with the economy's changes due to the elections. This research also helped fill the gap in the general debate of the political economics of elections in Sub Saharan Africa by offering quarterly evidence to put Uganda in the general literature of PBC.

1.7 Scope of the Study

1.7.1 Content Scope

The present paper studied the impact of electoral cycles on inflation, focusing on fiscal policy (government spending and deficits) and monetary policy (money supply growth) during

election quarters. It used the Autoregressive Distributed Lag Error Correction Model (ARDL-ECM) to determine the long-run cointegrating relationship while the Toda-Yamamoto Granger non-causality test was used to analyze the causal transmission pathway between the electoral cycles, fiscal deficits, money supply growth and inflation.

1.7.2 Time Scope

The analysis covered 60 quarterly observations, from 2010Q1 to 2024Q4. The time frame was chosen for two reasons. First, the Uganda Bureau of Statistics (UBOS) Quarterly GDP series is only consistently and reliably available from 2009/10 and thus the earliest year suitable for a complete quarterly series was 2010. Second, the time series included three full presidential elections, each quarterly, including the February 2011 (Q1 2011), the February 2016 (Q1 2016) and the January 2021 (Q1 2021) presidential elections, giving ample coverage to capture the electoral inflation effect of electoral inflation, without compromising the quality and consistency of the data. Presidential elections were first held under the 1995 Constitution in 1996, but quarterly macroeconomic data before 2010 was unavailable from official sources; this limitation was documented and addressed in Section 5.5 of this study.

1.7.3 Geographical Scope

The research was national in nature as macroeconomic data for Uganda was reported nationally, not regionally, because inflation and macroeconomic data were reported nationally by UBOS, Bank of Uganda, and MoFPED.

1.8 Significance of the Study

The study had implications in three areas:

To policymakers: The results offered a quarterly indication of the impact of electoral cycles on inflationary pressures in Uganda and the timing of the inflationary surge - the one quarter after the election and not during the election. This information is vital to MoFPED, BoU, NPA, URA and other Government entities for strengthening fiscal discipline, greater independence of monetary policy and establishing pre-emptive counter-cyclical measures to help safeguard price stability which can be used during and after the election, while ahead of the 2026 General Election in January.

To the academics and researchers: The research contributed to the Political Business Cycle literature by offering the first quarterly empirical evidence for Uganda over three election cycles (2010-2024). It showed that the relationship between elections and inflation was

indirect and that it is mediated by a causal chain that has been established and confirmed (ELEC_YEAR → FD → LN_MSG → INF in the annual model), and it provides the exact timing of the price response to the electoral shock at the quarterly level. It also offered a methodological model for the quarterly PBC studies to be carried out in the other data-constrained Sub-Saharan African economies.

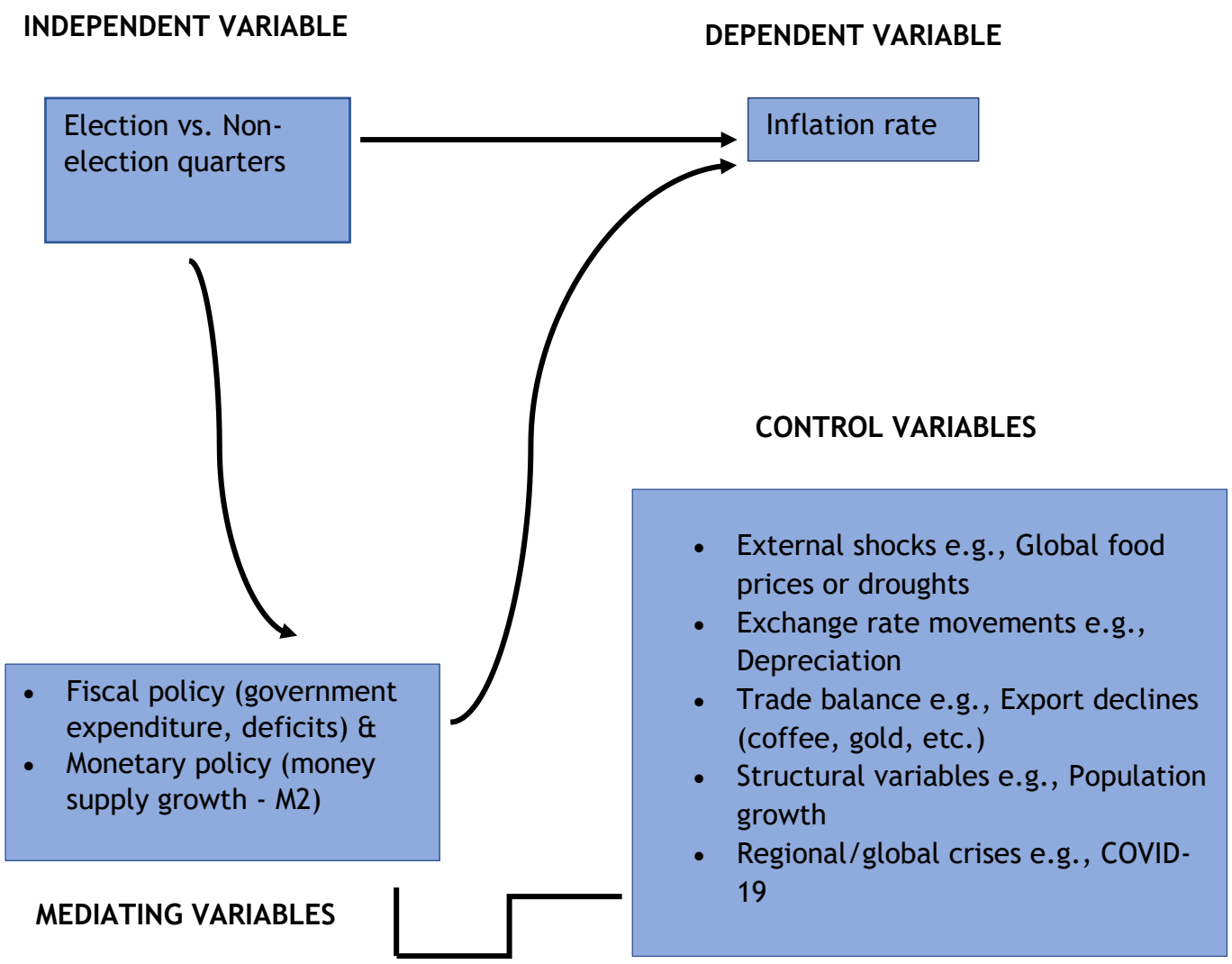
For practitioners and general public: The research shed light on the direct impact of fiscal and monetary policy decisions around elections on inflation and welfare of households. Civil society organisations, advocacy groups and watchdog groups can use these findings to keep leaders accountable for spending on election period opportunism. It will also provide economic advisory and development organisation practitioners with important knowledge on how to create programmes to better strengthen financial stability and protect vulnerable households during election periods.

1.9 Conceptual Framework

The idea behind the conceptual framework is the Political Business Cycle theory. It assumes that governments in office use economic and monetary policies in a way that secures electoral victory in order to secure economic benefits in the short-term and to cause inflationary pressure in the longer term following the elections. This study used quarterly data to test for a possible electoral effect in the quarter of the election (Q1, the first quarter, which is when Uganda elects politicians in January/February) or in the quarter following the election (Q2, April-June, where post-election fiscal loosening and monetary expansion spill over into consumer prices).

The independent variable is the quarterly election dummy (ELEC_YEAR = 1 if it is the first quarter of presidential election years 2011, 2016, or 2021; otherwise = 0). The dependent variable was Uganda's quarterly headline inflation rate (INF). Fiscal deficit (FD) and the log of broad money supply growth (LN_MSG), as the fiscal and monetary transmission channels, respectively, are the mediating variables. The business cycle is controlled by a real GDP growth (GDPG). The impact of external shocks such as global commodity prices, exchange rate movements, and structural variables including COVID-19 was acknowledged as moderating factors but was not explicitly modelled due to data constraints.

Figure 1:Conceptual diagram



Note: *In the empirical model, GDPG serves as the primary control variable due to quarterly data availability constraints.*

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviewed the theoretical and empirical literature on PBCs, fiscal deficits and their inflationary implications with particular reference to Uganda electoral environment in 2010-2024. The review is divided into three parts: theoretical literature, empirical research and synopsis. It is based on global, African, and Uganda-specific research which provides a strong foundation for understanding the relationship between inflation and elections through fiscal and monetary manipulations.

2.1 Theory-based Literature Review

So, the theoretical literature on political business cycles (PBCs) is divided into three main trends. First, the opportunistic models: which holds that incumbents manipulate the economy in the short run in the in order to improve their chances of re-election by expanding fiscal or monetary stimulus before the election. Second, the partisan strand says that macro policy outcomes are based on the ideological preferences of parties: left-leaning ones want low unemployment, right-leaning ones are focused on low inflation. Third, the rational expectations and strategic interaction models introduce signaling, competence revelation, and budgetary components manipulation when information is asymmetric explaining more sophisticated incentive structures influencing fiscal policy.

Parallel to that another literature of theory addresses the sources and sustainability of fiscal deficits. It starts with the Tax Smoothing Theory (Barro, 1979), on which deficits are the result of minimizing welfare costs from the volatility of taxation It's accompanied by the Leviathan Model (Brennan & Buchanan, 1980) explaining deficits as a function of big government wishing to raise as many revenues as possible, and Strategic Debt Theories (Alesina & Tabellini, 1987; Persson & Svensson, 1989) which argue that governments rack up debt in order to limit the ability of future policymakers who have different preferences.

Another theoretical development is concerned with the effect of fiscal policy on the price level and is headed by the Fiscal Theory of the Price Level (FTPL). The following key works are Michael Woodford's Interest and Prices (2003) and Olivier Blanchard and Stanley Fischer's Lectures on Macroeconomics (1989). These books provide a simple analytical model to think

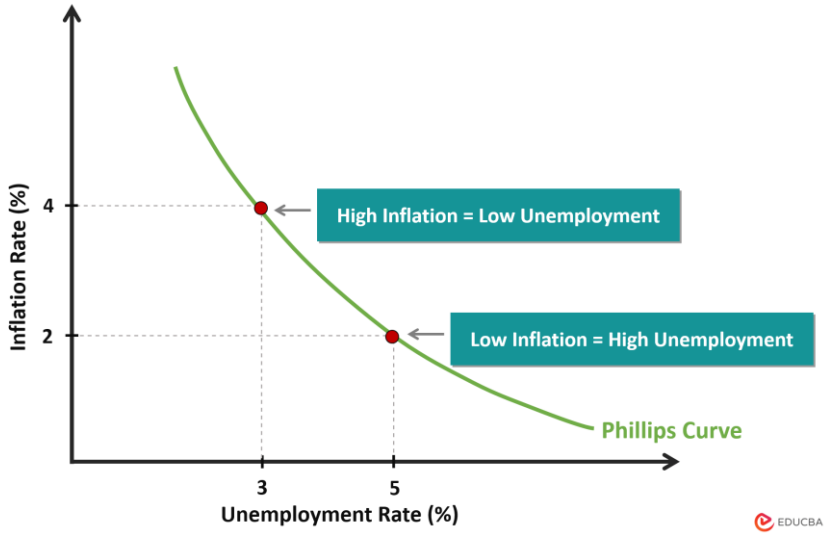
through how deficits interact with monetary conditions to determine inflation in particular in non-Ricardian regimes where fiscal policy dominates monetary policy.

When considered as a whole, these all add up to a broad framework to examine how election cycles affect output, fiscal balances, and the dynamics of inflation, particularly in countries where institutions are weak, such as in emerging markets, including in particular fiscal transparency, weak central bank independence, poor electoral oversight, fragmented checks and balances, and low bureaucratic capacity to enforce fiscal discipline. Such institutional weaknesses increase vulnerability to opportunistic fiscal expansion, off budget spending and monetization of deficits during the election periods.

2.1.1 The Opportunistic Cycle Theory (OCT)

William Nordhaus (1975) developed the PBC theorizing formally with the Opportunistic Cycle Theory, stating that incumbents up for re-election boost Aggregate Demand (via expansionary fiscal and/or monetary policy) to depress unemployment and so enhance electoral prospects by exploiting the exogenous Phillips-curve inflation-unemployment trade-off. The key behavioural assumption is that of voter myopia, or adaptive expectations: the recent evolution of the economy strongly influences the voter's perceptions of ability.

Figure 2:The Phillips Curve



The strength of the model was its simplicity and the parsimony of its electoral framework; but criticisms came quickly. If voters are rational and forward-looking (have reasonable expectations) they may foresee manipulations and will vote accordingly and such citizen behavior limits the effectiveness of policy (Drazen, 2000). Furthermore, opportunistic stimulation will be weakened by strong central bank independence or institutional

restrictions. Nonetheless, Nordhaus' framework is still factually valid when cases where informational disparities, weak institutions and limited voter rationality abound, as tend to be the case in many developing countries. The Ugandan pre-election spending boom and subsequent high inflation of 2011 provides further evidence of the model's relevance as it applies to the situation where fiscal relaxation can readily translate into price inflation pressures under different monetary policy regimes.

2.1.2 Ideological Cycle Theory

Douglas Hibbs (1977) then moved the question back to ideology: the Ideological Cycle theory states that party differences account for macroeconomic outcomes. Left-leaning governments favor generating jobs at the expense of higher inflation while right-leaning governments favor price stability at the expense of higher unemployment. Thus, party transitions generate growth-recession cycles as policies bring the different parties around again more in line with ideological goals.

According to the research, partisan effects are larger for unemployment and growth than inflation (Alesina et al., 1997). The Hibbs Approach works better in systems with frequent changes in governing parties, but does not reside in the long run (where there is long-standing single-party rule), but even where a party and its platform also show signs of partisanship during "times of ideological re-polarization" when intra-party lines split along religious, ethnic or electoral threats. Although obvious alternation is restricted in Uganda's NRM-dominated system, political divisions do occur during times of hypercontestatory politics (e.g., 2006), and in certain cases, such divisions can result in seasonal budgetary or distributional behaviour that would be consistent with partisan theory.

2.1.3 Opportunistic-Partisan Synthesis;

Later theoretical developments were devoted to a synthesis between opportunistic and partisan views. Alesina, Roubini and Cohen (1997) put forward a Partisan-Opportunistic synthesis where even parties with ideological differences may act opportunistically during the pre-election period as they deviate from their declared opinion in order to capture the median voter. This model can be used to generate plausible expectations, as well as to develop strategic interactions: parties selected close-term expansions whose electoral upside is closer to the ideological downside than to the ideological upside.

The union involves the observable union of numerous political systems - ideological and tactical choices. Critics rightly object to the model's use of monetary instruments (in which

central bank independence is central) and not fiscal Methods, or to the occurrence of strategic interactions which are assumed to be transparent in a low information electorate. Available evidence indicates that partisan-opportunistic behaviour prevails in Uganda, as evidenced by pre-election giveaways and apparent consumptive spending (particularly in 2016), with party ideology notwithstanding but opportunistic short-term incentives well utilized to swing the undecided vote.

2.1.4. Equilibrium Political Budget Cycles

With their later extensions, Rogoff and Sibert (1988) then brought fiscal signalling back into the equation. According to the Equilibrium Political Budget Cycles hypothesis, fiscal measures, particularly public spending, were used by politicians to signal incumbent competence because voters can think logically, but do not know the true state of competency. Based on maximizing information revealed, we can determine that even if voters are rational, excellent alerting can cause increased visible spending before election time which, functioning in an organised way, can produce budget deficits during election season.

This approach moves the focus away from aggregate cyclical groupings towards when and its composition of public spending. It forecasts that projects that are actually meant to take the form of a visible project as compared to fiscally neutral shows will be more common. Observers raise doubts whether these signals will indeed always mislead voters (Shi & Svensson, 2006), but the theory makes sense in environments where there is low fiscal transparency and the public does not demonstrate an immediate interest or attention to off-budget or locally funded projects. The case of Africa taken as an example like the 2021 domestic financing of the deficit and the off-budget items in Uganda remind us of the importance of the signaling and the fiscal channels through which PBCs operate.

2.1.5 Political Security and Uncertainty

Krause (2005) highlights the importance of the electoral security, which he says that the probability of the incumbent's re-election determines whether or not opportunistic manipulation is the most rational choice. As a result, if the race is close, insecure and barely in office, the incumbent is more likely to seek short-term growth, while in the case of safe incumbents, the incumbent is less likely to seek a short-term growth because it's guaranteed he'll win. This game theoretical insight helps explain empirical heterogeneity because

autocratically credible incumbents display dull-cycled behavior while massive cycles amass in intensely contested regimes.

This mechanism is corroborated by empirical findings from Africa, where we find that elections that are founded and multiparty contest characterized stronger cycles (Block, 2002). According to the electoral-security theory, Uganda saw quantitative increases in spending and deficit if the election was close (2016).

Theories of Fiscal Deficits

Theories that attempt to explain fiscal deficits offer several competing explanations as to the reasons why governments keep running these persistent imbalances. Some tell us that deficits are in fact good policy tools, with examples involving They are referred to in some instances by **Tax Smoothing Theory** as a means of maintaining lower tax rates and making welfare gains last longer. Other economists such as the **Leviathan Model** view deficits as being caused by governments that spend money that is not socially optimal. Then there are the **strategic political theories** which suggest that deficits can be intentionally amassed with the idea of leaving the future administrations with different priorities in their sights in order to worsen the mess and thus influence long-term politics and economics.

In all this, models in political economy are concerned with the decision making over fiscal choices in the context of elections. They expose how deficits are likely to be most visible around election time, and why it is a political favourite for the incumbent to spend; to borrow obscure off-budget spending to demonstrate competence; or to secure political support. So, fiscal deficit theories don't just set out the economic argument, they also point out the role of politics in driving the problem, particularly during election season.

2.1.6 Tax Smoothing

The best fiscal policy minimises the losses of welfare due to distortionary taxation by gradually smoothing tax rates according to Barro's (1979) reformulation of deficit behaviour as tax smoothing. This point of view argues that deficits, and not political opportunism, are a reasonable reaction to shocks (such as wars or recessions). Barro's model is criticised for its assumptions of Ricardian parity and for its abstraction of political motivations, two modelling premises that are regularly broken in the real world.

2.1.7 Leviathan and Rent-Seeking

According to the Leviathan theory put forth by Brennan and Buchanan (1980), the state is a revenue-maximizing agency that increases its budgetary size by gaining taxes and deficits in order to collect rents. According to this concept, budgetary expansions might be the consequence of rent seeking, not welfare maximizing policies, where there are not enough institutional checks and balances in place. In the case of Uganda, suspected politically motivated or off-budget expansions are at times more consistent with rent extraction than tax smoothing in the legal tax system.

2.1.8 The Strategic and Political Debt Theories

Alesina and Tabellini (1987), Persson and Svensson (1989), and in the Tabellini-Alesina amendments (1990), emphasizes the strategic debt accumulation. Incumbents use debt to entangle successors or to finance politically-acceptable schemes when the future taxation and political constraints will make present expenditures more welcome. Cukierman and Meltzer (1989) introduce an inter-constituent dimension: in the case of current voters (i.e., or interest groups) that are impatient, or highly constrained from the standpoint of inherited concerns, debt-funded expenditures may become the norm.

Since government debt becomes a political tool rather than a neutral smoothing tool, these types of political-debt accounts are acquired particularly in countries with weak fiscal institutions. Uganda's increasing governmental debt (noted above as roughly 53% of GDP by 2024) can be viewed from the following perspective: the debt dollars are being used to finance the government's immediate political objectives while it may be limiting the government's capacity to spend flexibly in the future, with a long legacy of political choice.

Theories Based on Relationship between inflation, elections and deficits

This is a literature that links political incentives discussed above with macroeconomic pricing dynamics. Two major categories of explanation emerge: the monetarist ideas, which stress money expansion as the key factor in bringing about inflation, and the fiscalists or FTPL viewpoints, which consider the fiscal policy and the government budget restrictions as the key factors in the price formation processes.

2.1.9 Monetarist Theory

The monetarist dogma of Milton Friedman, "Inflation is always and everywhere a monetary phenomenon," converts money supply increase beyond real output as the cause of inflation.

Fiscal deficits are only shown to have an impact on inflation if they are monetised by the central bank. Practical critiques point to linkages between fiscal and monetary policy (which are ignored by Friedman's simple model) which are of great importance to the assessment of deficits, seigniorage, and inflation, but the monetarist reasoning remains central to evaluations of these.

2.1.10 Fiscal Theory of the Price Level (FTPL) and Passive/Active Policy Regimes

The FTPL and complementary conceptual apparatus were devised by Eric Leeper (1991), Christopher Sims (1994) and Michael Woodford (1995-1996). In some regimes - especially non-Ricardian scenarios where fiscal policy does not guarantee the intertemporal budget constraint - fiscal policy (the present value of primary surpluses) is the determining factor in the price level. As a matter of fact, it has been shown that if monetary policy is passive and fiscal policy is active (fiscally dominant) then the situation of a disequilibrium in balance of payments is the outcome of Leeper's active/passive taxonomy. This is extended by Carlstrom and Fuerst (2000), by distinguishing weak and strong forms of FTPL and focusing on problems of indeterminacy and multiplicity.

The empirical applicability of FTPL is debatable; however, in countries that are in the high debt category as developing countries with less fiscal credibility, FTPL type mechanisms are plausible; election-driven deficits without credible future surpluses can result in inflation. In addition, periodic fiscal surpluses in their election years and public debts along with instances of monetary policy accommodation make FTPL issues particularly alive this time in Uganda.

The two messages that are woven through the theoretical strands are that a) electoral incentives have an impact on fiscal and monetary decisions (opportunism, partisan or strategic signaling) b) the impact on fiscal and monetary decisions is observable and can lead to cycles. Those cycles are expressed in institutionalized inflation (independence of the central bank, fiscal transparency, electoral competitiveness). The main theory, criticism and salient application to Uganda is presented in the following table.

Figure 3:Summary of Theories

Theory	Key Argument	Main Criticisms	Application to Uganda
Opportunistic Cycle Theory (Nordhaus, 1975)	Incumbents expand fiscal/monetary policy before elections to reduce unemployment and win votes.	Assumes voter myopia; rational expectations weaken effects; central bank independence limits manipulation.	2011 election-year fiscal expansion and subsequent inflation spike reflect opportunistic pre-election macroeconomic loosening.
Ideological Cycle Theory (Hibbs, 1977)	Parties pursue macroeconomic outcomes that reflect ideological goals (left = jobs/inflation; right = stability/unemployment).	Works best where parties alternate regularly; limited in dominant-party systems.	Uganda's NRM dominance limits partisanship, but ideological repolarization in 2006 produced distributional and spending patterns consistent with partisan theory.
Opportunistic-Partisan Synthesis (Alesina, Roubini & Cohen, 1997)	Even ideologically distinct parties behave opportunistically during elections to capture the median voter.	Relies heavily on monetary instruments; assumes informed voters in low-information contexts.	Uganda's pre-election giveaways (2016) show opportunistic behaviour overriding ideological commitments.
Equilibrium Political Budget Cycles (Rogoff & Sibert, 1988)	Politicians use visible spending to signal competence due to asymmetric information; results in pre-election deficits.	Doubts on voter misperception; weak where fiscal transparency is high.	Off-budget domestic financing and visible expenditure projects before elections (2021) align with signaling behaviour.
Political Security / Electoral Uncertainty (Krause, 2005)	Greater electoral insecurity produces stronger pre-election expansions; secure incumbents behave less opportunistically.	Hard to measure true electoral insecurity; mixed empirical evidence.	Higher spending and deficits during competitive elections (e.g., 2016) reflect political insecurity dynamics.
Tax Smoothing (Barro, 1979)	Deficits stabilize tax rates over time; arise from temporary shocks, not politics.	Assumes Ricardian equivalence; ignores political motives;	Uganda's deficits do not follow pure tax smoothing, especially during election cycles.

		unrealistic in developing countries.	
Leviathan / Rent-Seeking (Brennan & Buchanan, 1980)	Governments expand budgets and deficits for rent extraction where institutional checks are weak.	Normative assumptions; difficult to quantify rent-seeking empirically.	The off-budget expenditures in election years are in line with rent-seeking under weak institutional control.
Strategic Debt Theories (Alesina & Tabellini, 1987; Persson & Svensson, 1989)	Governments accumulate debt to constrain successors or satisfy impatient constituencies.	Strategic debt is hard to tell from smoothing; assumes the turn in politics.	Debt in Uganda is on the rise, which is typical of political borrowing during election cycles (≈53% of GDP in 2024).
Monetarist Theory (Friedman)	Inflation results from excessive money supply growth; deficits matter only when monetized.	Oversimplifies, neglects fiscal dominance and coordination.	In certain election years, monetary expansion has helped to build up inflationary pressures.
Unpleasant Monetarist Arithmetic (Sargent & Wallace, 1981)	If fiscal deficits are no longer sustainable, there is nothing that tight money policy can do to prevent inflation.	Very theoretical; makes strong inter-temporal budget constraint assumption.	The pressure on the BoU comes when the deficits are incurred during the election period, triggering inflation risks if the period is monetized.
Fiscal Theory of the Price Level (Leeper, Sims, Woodford)	The price level is determined by the fiscal variables rather than the monetary variables in a fiscally dominant regime.	Hesitation about empirical applicability, high data demands.	Election related budget deficits and monetary accommodation in Uganda provide a possible rationale for the use of FTPL mechanisms in explaining inflation in Uganda.

2.2 Review of Empirical Literature.

The theoretical predictions are empirically examined in a wide variety of contexts and methodologies such as single country time series, cross country panels, dynamic panels (GMM), VARs, cointegration and event studies. Some empirical regularities are significant: (i) PBCs are higher in developing and new democracies; (ii) institutional quality reduces PBCs, especially fiscal transparency and independence of the central bank; (iii) deficits correlate with inflation, especially for high inflation or fiscally weaker environments; (iv) composition is important, election cycles bias spending toward visible consumption-based products.

2.2.1 PBCs in Developed Countries

PBCs are more prevalent in developing countries with weak institutions or more suppressed in developed countries with strong institutions. Panel data and individual country studies show mixed effects of partisanship and much less variation in opportunistic effects. Cottarelli, Griffiths & Moghadam (1998) applying SURE models to 47 of the world's industrial and transition economies report that fiscal imbalances have an impact on inflation but that central bank independence and pegged exchange rates reduce their impact. Alt and Lassen (2006) and Bayar & Smeets (2009) stress the role of the fiscal transparency in diminishing cycles. These results highlight the capacity of institutions to be resilient to change and limit the possibility of opportunistic manipulations: institutions in developed countries limit the magnitude of the deficit-driven inflation.

2.2.2 PBCs in Less Developed Countries

In contrast, the PBCs experienced by developing countries are stronger and more frequent. Schuknecht (2000) had found substantial pre-election spending increases in developing-country panels, but Block (2002) showed average negative election-year deficits of ~1.2% of GDP from Sub-Saharan Africa. The traditions of African panels and national studies (Block et al., 2003; Pasten & Cover, 2010) demonstrate the effect on the strength of PBCs from multiparty competition and founding elections. A number of application studies in different countries (e.g. Pakistan, Tanzania, Nigeria) adopting ARDL, cointegration and GMM models, have often revealed the existence of election-induced spending magnifications which is

characterized by variations in the composition of expenditures often to the detriment of investments.

Ugandan case history is also in harmony with these results: notable pre-election expenditures, off-budget spending, and domestically-financed deficits during important election cycles (1996 founding multiparty election, 2006 and 2016 match, and 2021) are indicative of institutional fragility and political incentives, which. pur periodic fiscal expansion.

2.2.3 Comparative PBC Evidence: From Developed to Developing Economies.

Comparative analyses (Shi and Svensson, 2002, Fischer, Sahay and Vegh, 2002, Brender and Drazen, 2005) underway find the higher PBCs in developing/new democracies regularly. These include less openness, less voter knowledge and greater fiscal discretion. Whereas industrialised countries typically pursue cycles through the use of fiscal regulation, independent central banks and rigorous fiscal reporting, this safeguard is not normally available to poor countries, and cyclical fiscal and monetary policy is therefore more open to political manipulation.

2.2.4 Empirical Studies Related to inflation - Deficit Links

Findings from the empirical studies on deficits and inflation are qualified and conditional upon the environment. In emerging or high inflation economies, the positive correlation of deficits (or debt) and inflation is found by cross-country dynamic panels (Catao & Terrones, 2005), GMM studies (Kwon et al., 2009) and single country cointegration tests (Darrat, 2000), especially when the deficits are monetarily supported. An important consequence of the panel VARs (Loungani and Swagel, 2003) is that money and exchange-rate channels are considered the primary sources of inflation, while deficits only make an impact when they lead to money growth or exchange-market pressures. Studies carried out in some specific east African countries (such as Tanzania and Ethiopia) have shown that monetization channels link inflation with deficits.

Divergent results can be explained by methodological differences: While panel GMM allows to control endogeneity, it may camouflage country heterogeneity. This makes it difficult to compare the results of the granger-causality studies, as it is sensitive to the length of the sample and the presence of structural breaks. It is the FTPL logic where if central bank

independence and fiscal rules are credible then the impact of deficits on inflation is smaller. However, if these factors are weak, it can be that deficits are the most important cause of changes in price levels.

2.3 Overview of the Literature

A close reading of the theoretical and empirical literature regarding inflation, fiscal deficits and political business cycles shows that the field of study is one marked by both substantive disagreements and surprising points of convergence. What comes out of all this is that macroeconomic results cannot be disassociated from the political incentives. However, the channels through which these incentives work - and the circumstances under which they become inflationary - are far from uniform across countries and periods of time.

The early frameworks are split along partisan and Opportunistic lines. Partisan accounts (Hibbs. 1977; Alesina et al., 1997) emphasize ideological commitments that lead to systematic macroeconomic differences between Governments, while opportunistic models (Nordhaus 1975) emphasize strategic incumbents engineering expansion of the pre-election demand in an effort to bolster political support. We find that neither of these ways is absolutely able to withstand the rational expectations objection. With the development of signalling and equilibrium models (Rogoff and Sibert 1988; Rogoff 1990) the discourse shifted radically: manipulation of aggregate results is not about adjusting modern results, but about altering the composition of public expenditure - to elect winners in a way that demonstrates visibility of expenditures that are electively salient to signal competence to an electorate that cannot directly observe government capability.

This theoretically developing work is likely to be reinforced by empirical work in various contexts. What we have always studied to be so is weaker or statistically elusive political cycles in high advance economies where opportunities are constrained through institutional checks and balances, political transparency and monetary central bank independence. The cross-country and panel studies, however, show that PBCs are stronger and more robust in developing economies (Shi and Svensson, 2006; Brender and Drazen, 2005; Block, 2002). What my reading is pointing to though is that these regularities are not mechanical: institutional quality, financing constraints as well as informational asymmetries are highly responsive. Where institutions are feeble or fiscal credibility is forbidden by regulations, this implies that

fairly modest manipulations of the electoral process can be converted into quantifiable macroeconomic shocks.

The body of literature on fiscal deficits contributes to this image. Rent-seeking and intergenerational redistribution theories (Brennan and Buchanan 1980; Cukierman and Meltzer 1989) stress the political orchestration of protracted disequilibria, and strategic-debt models (Alesina and Tabellini; Persson and Tabellini). Tax-smoothing arguments (Barro, 1979) provide a convenient reference point, but in reality their explanatory power is undermined in those countries where deficits are unequivocally coinciding with the political cycle, as opposed to economic shocks. The difference between these competing interpretations of deficit is that deficits can be best comprehended not in terms of specific economic responses, but in terms of political conditioned tools.

Revolving to inflation the literature is divided in half. As we have observed, evidence presented by emerging and high inflation economies has shown that deficits when monetized are likely to be inflationary (Cottarelli et al., 1998; Catao and Terrones, 2005). The Monetarist schools (Friedman) believe that the principal cause of inflation was an increase in the money supply but it is disputed by the Fiscal Theory of the Price Level (Leeper, Sims, and Woodford) that inflation was a fiscal, as well as a monetary, phenomenon and the price level was as fiscal as monetary. I read in between the lines to argue that both sides of the arguments could be right, when circumstances were different, when dealing with different institutions. The acknowledgment in the literature that the inflationary effect of deficits is not automatic has been increasing and this depends on how they are to be financed and the ability of the central bank to withstand the fiscal pressure.

This conditional perspective can be supported by the African and Ugandan evidence. Research highlights that pre-election spending is possible due to aid inflow and absence of fiscal accountability without compelling immediate demands on budgets (Mosley & Chiripanhura, 2016). Known trends in elections, as noted in Uganda case studies, include electoral supplemental budgets, spending increments in flailing budgets that are already in place, money supply multiplier effects and exchange-rate effects (IMF, 2011; Helle and Rakner, 2014; BTI, 2024). But these are by no means uniform results. Some or some cycles are vigorous, some weak; some deficits are inflationary, some not. It is quite clear in the literature that it will be determined by the institutional design, the way it is financed (capital formation by

domestic borrowing or monetisation) and the general economic environment, by food and fuel shocks with which Uganda inflation is often dominated.

After having reviewed these arguments, I have reached the following conclusions: The discrepancies between the studies are not random or conflicting. They relate to something more fundamental in nature: the phenomena of political business cycles are situation-dependent at base. Electoral fiscal behaviour has strength, direction and inflationary effects of electoral fiscal behaviour, which are dependent upon institutions, informational frictions, outside shocks, and particular fiscal instruments employed. This acknowledgment gives incentive to such national analysis in details. In the case of Uganda, where electoral cycles are internoted, the monetary independence is only partial, and supplementary budgets recurrently, and the supply shocks are sensitive, the explicit modeling of the interactions is a significant aspect of an effective empirical strategy. What is evident in the literature available - and what this paper is going to examine is that to comprehend the dynamics of the fiscal-inflation dynamics in Uganda, we need to look beyond aggregate deficit, and see when, how, how the impact is mediated by an institutional context.

Combined, the literature on the theoretical fronts gives a strong indication as to the cause of the Ugandan context, namely, of the three school of thought reviewed, the Opportunistic Cycle Theory (Nordhaus, 1975) provides the most compelling explanatory variable to the Ugandan electoral-inflationary phenomena, and this paper is explicitly intended to test the applicability thereof. Partisan model (Hibbs, 1977) has not gained much ground in a system in which ideological alternation has not taken place and the NRM has dominated the system over the last three decades. The equilibrium signalling models of Rogoff and Sibert (1988) are realistic - especially concerning the off-budget and visible patterns of expenditure - but demand informational asymmetries, which are perhaps exaggerated by the Uganda electoral process which is becoming media saturated. In comparison, the opportunistic model is perfectly applicable to the Uganda case: the incumbent is dominant and has great access to fiscal instruments, the central bank is working within the framework of partial fiscal dominance, and the voters have economic judgements that are conditioned by price and income signals in the short run. In Chapter Three, the empirical strategy is thus planned keeping this theoretical background under consideration, although it is open to the prospect that institutional moderators such as the reintroduction of multiparty competition in 2005 and

the increased influence of the IMF Article IV oversight may have caused the weakening of the pure opportunistic cycle over time.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter provided a summary of the methodology used to achieve the study objectives, which gave a detailed explanation of the research process. The systematic and structured process for conducting research, which includes the research design, data sources, quality and reliability testing, processing and analysis techniques are known as methodology (Sekaran & Bougie, 2022). This chapter provided a description of the methodology, which guaranteed transparency and replicability of the study.

3.1 Research Design

The research design used in this study was quantitative research design using secondary data in this case are the time series data of the quarterly data of the macro economic variables, namely inflation (INF), fiscal deficit (FD), money supply growth (LN_MSG), real GDP growth (GDPG) and also a quarterly election dummy (ELEC_YEAR). This was to examine the relationship between electoral cycles and inflation in Uganda at quarterly frequency based on the hypothesis of the Political Business Cycle (PBC) theory.

The null hypothesis (H_0: $\beta = 0$) would indicate that electoral cycles and inflation are not related. The alternative hypothesis (H_1: $\beta \neq 0$) proposes that the electoral cycle have a significant effect on the inflation rate for Uganda during the period of investigation (2010Q1-2024Q4).

The study period covered 60 quarterly observations spanning three presidential elections: February 2011 (Q1 2011), February 2016 (Q1 2016), and January 2021 (Q1 2021). The quarterly model pinpointed the election quarter effect and the post-election quarter effect because Uganda's elections have always been scheduled in the first quarter of the election year (January - March). This timing was more precisely reflected in the quarterly election dummy (ELEC_YEAR = 1 if Q1 of election year, 0 otherwise) than in an annual dummy.

Prior to the quarterly analysis, a preliminary ARDL model was estimated on annual data covering the full 1996–2024 period, covering six presidential elections. This annual

specification confirmed the presence of a positive electoral coefficient and the significance of broad money supply growth as the dominant inflation driver, providing a foundation for the quarterly investigation. The annual results are referenced at relevant points in Chapters 4 and 5 for comparative purposes, and the annual dataset is presented in Appendix 1.

3.2 Data Source

This study used secondary quarterly time series data from 2010Q1 to 2024Q4 (N = 60). The five variables in the analysis were:

- **INF**: Uganda quarterly headline inflation (year-on-year CPI %), obtained by averaging data from the Uganda Bureau of Statistics (UBOS) monthly CPI publications, and cross checked with data from the IMF International Financial Statistics (IFS) database.

- **FD:** Overall government budget balance as a percentage of GDP (from UBOS Government Finance Statistics Bulletins, quarterly from 2014/15) and MoFPED annual budget outturns distributed proportionately by quarters for 2010-2014.

- **Quarterly broad money (M2)** growth rate, natural log (%), source Bank of Uganda monetary statistics, monthly data, quarterly frequency average.

- Quarterly real GDP growth rate (year-on-year %) (GDPG): Source: UBOS Quarterly GDP press release from 2009/10 onwards.

- **ELEC_YEAR**: Construction from the Uganda Electoral Commission and African Elections Database records, ELEC_YEAR is a binary dummy for each quarter in presidential election years (Q1 2011, Q1 2016 and Q1 2021) and 0 otherwise. The elections were conducted in Uganda in the first quarter of the calendar year (January-February).

Note that pre-election year (PRE_ELEC), post-election year (POST_ELEC), trade openness (TRADE), real interest rate (RIR), and external debt service (DEBT_SERV) were other variables added to earlier versions of this study. These variables were subsequently removed from the final specification based on their continuing statistical insignificance, as well as the constraints of degrees of freedom in the 29-observation sample, whereby the variables are dropped from the specification using a general-to-specific procedure as described by Hendry

(1995). The final parsimonious model includes four of the seven variables that were theoretically motivated and specifically tested in this study.

The Real Interest Rate (RIR) is not endogenous to the ARDL estimation as it is dependent on the inflation outturns observed; the Central Bank Rate (CBR) set by the Bank of Uganda is directly linked to observed inflation outturns as part of its inflation targeting framework, thus RIR is endogenous to the inflation targets set by the Bank of Uganda and not vice versa (Bank of Uganda, 2023; Woodford, 2003). Exogeneity assumption of the ARDL estimator would be violated if an endogenous regressor is included in the model which would result in bias and inconsistent estimates of the model parameters.

3.2.1 Exploratory Data Analysis (EDA)

Data were visualised and initial relationships were explored using exploratory methods before formal modelling. This involved creation of time series graphs for each of the variables (e.g. inflation over time), pairwise scatter plots (e.g. inflation against fiscal deficits, fiscal deficits against money supply growth) and line plots that were divided into election and non-election years (e.g. comparison of inflation in election years with inflation in non-election years). These visualizations revealed trends, outliers, potential non-linearities and correlations, including the relationship between inflation and election year dummies. All plots were generated in E-Views to gain some insight into the structure of the data and to help with the subsequent formal tests.

3.3 Theoretical and Empirical Framework

The ARDL-ECM model was used to empirically test both short-run and long-run relationships between inflation and the explanatory variables, based on the study objectives. ARDL was originally developed by Charemza and Deadman (1992) and extended by Pesaran, Shin and Smith (2001) to identify cointegrating relationships between variables of different orders of integration (I(0) and I(1)). The ECM component (Engle & Granger, 1987) indicates long run relationships, short run deviations from the long run equilibrium, and the speed of adjustment to the long run equilibrium.

The ARDL-ECM was chosen because it allowed inclusion of variable endogeneity and was capable of providing the long run and short run estimates in small samples. The procedure

started by comparing the F-statistic obtained from the bounds test with the Pesaran et al. (2001) critical values to check for the presence of a long run equilibrium relationship. In addition, the Toda-Yamamoto (1995) Granger non-causality test was employed to provide a formal test of the direction of causality between electoral cycles, fiscal deficits, money supply growth and inflation, thereby directly testing the causal mechanism suggested by the PBC hypothesis.

3.4 Estimation Procedures

This study followed the footsteps of Brender and Drazen (2005) and Nguyen (2023) who used the ARDL-ECM approach to investigate the impact of electoral cycles on inflation in Uganda, among others. A series of diagnostic tests was carried out before and after the estimation to validate the model, such as the test for cointegration, multicollinearity, stationarity, lag selection, etc., the test for serial correlation, the test for heteroskedasticity, the test for conditional heteroskedasticity, the test for parameter stability and the test for causality.

3.4.1 Test 1: Multicollinearity

A common problem in regression analysis is multicollinearity, where variables are highly correlated with each other and this can result in unstable coefficient estimates (Gujarati, 2004). The Pearson correlation matrix was employed to check for the presence of multicollinearity. If the value of the correlation coefficient between any two independent variables is above 0.80, it may be due to problems of "multicollinearity. The Variance Inflation Factor (VIF) is also mentioned:

$$VIF = \frac{1}{1 - R^2} \quad (1)$$

$$Tolerance = \frac{1}{VIF} = (1 - R^2) \quad (2)$$

A VIF greater than 10 or tolerance less than 0.1 indicates high multicollinearity.

3.4.2 Test 2: Unit Root Test

The tests for stationarity were applied to each series to determine if they are stationary. The Augmented Dickey-Fuller (ADF) test was used (Granger and Newbold, 1974; Pesaran, 2007). The trend and intercept equation for the ADF is:

$$\Delta Y_t = \beta_1 + \beta_2 t + \delta Y_{t-1} + \Sigma_{i=1}^{m} a_i \Delta Y_{t-i} + \varepsilon_t \qquad (3)$$

If H_0: $\delta = 0$, the hypothesis of non-stationarity is accepted. If the ADF t-statistic is less than the MacKinnon critical value at 5%, the null is rejected and the variable is considered stationary. First differences of variables are taken and retested if the variables are found non-stationary at levels. None of the variables in this study was found to be I(2), a prerequisite for ARDL approach.

3.4.3 Test 3: Lag Length Selection

It is very important to select the right lag length for time series modelling. The optimal lag was automatically selected in EViews, based on the Akaike Information Criterion (AIC) with assistance from the Schwarz Bayesian Information Criterion (SIC) and Hannan-Quinn Information Criterion (HQIC). Smaller numbers signify a better fit and penalise over-parameterisation (Brockwell & Davis, 2016; Burnham & Anderson, 2002; Lütkepohl, 2005). The maximum lag considered was 2, which is in accord with the degrees-of-freedom limits of the 29-observation sample.

3.4.4 Test 4: Bounds Test for Cointegration

The ARDL Bounds Test (Pesaran et al., 2001) was used to test for a long-run relationship between inflation and explanatory variables. The test can be used when variables occur with mixed orders of integration (I(0), I(1)) as is done in this study. The null hypothesis is: H_0: No levels relationship (no cointegration). The null is rejected if the computed F-statistic is greater than the upper critical bound I(1) at 5% level of significance, cointegration is accepted. The ECM is able to represent the long-run adjustments and the speed of adjustment, if cointegration is found.

3.4.5 Test 5: Post-Estimation Diagnostic Tests

After the model was estimated, the following post-estimation tests were performed to check the validity of the model:

- **Breusch-Godfrey (BG) LM Serial Correlation Test**: Determines if there are any autocorrelations in the residuals. H_0: There is NO serial correlation. If p-value is > 0.05, the residuals are white noise (no relationship).

- **The Breusch-Pagan-Godfrey (BPG) Heteroskedasticity Test**: Tests the hypothesis of constant variance of the residuals. H_0: residuals are homoskedastic. If the p value is greater than 0.05, then the variance is constant.

- **ARCH LM Test (Engle, 1982):** tests for Autoregressive Conditional Heteroskedasticity, that is, whether the variance of the residuals happens to be concentrated over time, notably in the vicinity of electoral fiscal expansion. H_0: No ARCH effects. If the p-value is greater than 0.05, then there is a confirmation of conditional homoskedasticity.

- **CUSUM and CUSUM of Squares Tests**: Test for stability of parameters between sample periods. The CUSUM test is for systematic parameter drift, while the CUSUM of Squares test is for variance instability. Stability is verified if both of these statistics are in 5% critical bounds.

3.4.6 Test 6: Granger Causality Test (Toda-Yamamoto)

This study employed the Toda-Yamamoto (1995) modified Granger test for non-causality to formally assess the direction of causation between electoral cycles and inflation, which cannot be extrapolated from most of the PBC studies. This procedure is preferable to the conventional Granger causality tests as it is valid for any system and does not require any further assumptions on the integration and cointegration characteristics of the system, and hence it is directly applicable in the mixed I(0)/I(1) variables situation adopted in this study. The test is embedded in the context of a VAR framework with lag order ($p + d_{ma}^{x}$), where p is the optimal VAR lag and d_{ma}^{x} is the maximum VAR order of integration ($d_{ma}^{x} = 1$ is considered in this study). The null hypothesis H_0 is: Y is not affected by X.

3.5 Model Specification

This study examined the short and long relationships between the independent variables and inflation. The ARDL-ECM framework was used. To make the growth of money supply more stable and linearise the relationship, the money supply growth is log transformed (LN_MSG = ln(MSG)). These variables are then kept in levels to maintain the sign information since negative values are obtained in some years for the other variables (INF, FD, and GDPG).

The general functional form of the model was:

$$INF = f(\text{ELEC\_YEAR}, \text{LN\_MSG}, \text{FD}, \text{GDPG}) \quad (4)$$

The ARDL model is:

$$\Delta INF_t = \mu + \sum_{i=1}^{m} \gamma_i \, \Delta INF_{t-i} + \sum_{i=0}^{m} \theta_i \Delta ELEC\_YEAR_{t-i} + \sum_{i=0}^{m} \beta_i \Delta LN\_MSG_{t-i}$$

$$+ \sum_{i=0}^{m} \alpha_i \Delta FD_{t-i} + \sum_{i=0}^{m} \phi_i \Delta GDPG_{t-1} + \delta_0 INF_{t-1}$$

$$+ \delta_2 LN\_MSG_{t-1} + \delta_3 FD_{t-1} + \delta_4 GDPG_{t-1} + \epsilon_t \quad (5)$$

Where:

- γ, θ, β, α, φ = short-run coefficients on lagged differences
- δ_0 through δ_4 = long-run (levels) coefficients
- μ = restricted constant (Case 2, Pesaran et al. 2001)
- ε_t = white noise error term
- m = optimal number of lags selected by AIC (maximum 2, constrained by sample size)
- Σ runs from i = 1 to m for the dependent variable (autoregressive component) and from i = 0 to m for the independent variables (distributed lag component)

In Equation 5, the summation operator will take all values from i = 1 to m for the dependent variable and from i = 0 to m for each independent variable; m is the optimal lag length. For instance, $\sum_{i=1}^{m} \gamma_i$ is "the sum of the changes of inflation at time 1 times the coefficient γ_1, the changes of inflation at time 2 times the coefficient γ_2 and so on up to time m". This will reflect the autoregressive memory of the inflation series. The same distributed lag structure was used for all independent variables. Without the summation sign, the δ terms are one-period-lagged level terms that establish the long-run equilibrium relationship tested by the bounds test.

The ECM (empirical mode) form of the model is:

The ARDL model is:

$$\Delta INF_t = \mu + \Sigma\, \gamma_i \Delta INF_{t-i} + \Sigma\, \beta_i \Delta LN\_MSG_{t-i} + \ldots + \varphi\, ECM_{t-1} + \varepsilon_t \qquad (6)$$

In the equation, φ is the coefficient of error correction (speed of adjustment). If a negative and statistically significant φ is obtained, then the system exhibits a cointegrating relationship and the speed of the system's return to long-run equilibrium after a short-run shock is suggested.

3.5.1 Model Significance and Validation

The overall fit of the ARDL-ECM model is judged by the F-statistic, R square, and adjusted R square. t-statistics and p-values at the 5% significance level were used to assess the significance of each individual variable (Kennedy, 1992).

The robustness of the model was confirmed by use of post-estimation diagnostics (Section 3.4.5). The tests further validate the reliability of the coefficient estimates, especially in the case of macroeconomics dynamics associated with elections. Further, the OLS specification is adopted as a robustness check; the same variables were estimated in OLS to ensure consistency of direction of the ARDL long-run coefficients. The dynamic adjustment and cointegration structure that can be obtained from ARDL cannot be detected by OLS, but if there is an agreement in the direction of the variables, this will encourage the confidence of the results.

3.5.2 Variable Table

A list of all variables included in the model, their signs and sources of data is provided in Table 1.

Table 1: Variable Description and Expected Signs

Variable	Description	Expected Sign	Source
INF	Annual CPI inflation (%)	Dependent	UBOS / World Bank WDI
ELEC_YEAR	Election year dummy (1=election, 0=other)	Positive (+)	Uganda Electoral Commission
LN_MSG	Log of M2 broad money growth (%)	Positive (+)	Bank of Uganda / IMF IFS
FD	Fiscal deficit as % of GDP	Positive (+)	MoFPED / IMF Article IV
GDPG	Real GDP growth rate (%)	Negative (−)	World Bank WDI

Based on the PBC hypothesis, the sign of ELEC_YEAR should be positive because economic activity tends to be high during election years, thereby increasing inflation. LN_MSG is likely to be a positive, in line with the Quantity Theory of Money, an increase in money supply growth will lead to an increase in the price level. FD should be positive as more deficits are monetised (i.e. more money created) and this has inflationary effects. GDPG is likely to have a negative sign, an increase in real GDP growth will lead to a reduction in the supply of goods and services, which will make the price pressures less severe.

CHAPTER FOUR

ANALYSIS, INTERPRETATION AND DISCUSSION OF FINDINGS

4.0 Introduction

This chapter presented the results of the quarterly data analysis, integrating both descriptive and inferential statistics to provide a complete understanding of the findings. The chapter was organized in a systematic manner starting with descriptive statistics, correlation analysis, tests for unit root, estimation of ARDL model, bounds test for cointegration, long-run and short-run coefficient analysis, diagnostic tests, robustness check using OLS, Toda-Yamamoto Granger causality test. All estimations were performed using EViews 10 on quarterly data covering 2010Q1 to 2024Q4 - 60 observations spanning three presidential elections.

4.1 Descriptive Statistics

Table 2 presented summary statistics for the five variables used in the quarterly analysis.

Table 2: Summary of Descriptive Statistics (Quarterly, 2010Q1-2024Q4)

Statistic	INF	LN_MSG	FD	GDPG	ELEC_YEAR
Mean	5.823	2.652	-4.970	4.635	0.050
Median	4.400	2.625	-4.500	4.800	0.000
Maximum	29.000	3.453	-3.200	8.500	1.000
Minimum	1.900	2.128	-9.100	-5.600	0.000
Std. Dev.	5.023	0.293	1.472	2.199	0.220
Skewness	2.960	0.680	-1.347	-2.122	4.129
Kurtosis	12.017	3.825	4.091	10.524	18.053
Jarque-Bera	290.897	6.326	21.125	186.549	736.981
Prob. (JB)	0.000	0.042	0.000	0.000	0.000
Observations	60	60	60	60	60

The quarterly inflation profile of Uganda reveals a highly volatile macroeconomic environment. The mean quarterly inflation rate of 5.82% is accompanied by a standard deviation of 5.02, indicating significant variation across the 60 quarters. The range is extreme: from a minimum of 1.90% to a maximum of 29.00% recorded in Q4 2011, the peak of the post-election monetary expansion cycle. The positive skewness of 2.96 and kurtosis of 12.02 confirm a strongly right-skewed, leptokurtic distribution dominated by the 2011 inflationary episode. The Jarque-Bera statistic confirms non-normality (p = 0.000), expected for quarterly inflation data in a developing economy with periodic electoral and external shocks.

The fiscal deficit (FD) has a quarterly mean of -4.97% of GDP with all values negative, confirming Uganda's persistent deficit financing throughout the sample. The minimum of -9.1% was recorded in Q1 2021 - the COVID-19 fiscal response year coinciding with the election cycle. GDPG averages 4.64% quarterly with a sharp negative outlier of -5.6% in Q2 2020 (COVID-19 lockdown). LN_MSG is the most normally distributed variable (JB p = 0.042). The ELEC_YEAR mean of 0.05 correctly reflects exactly 3 election quarters out of 60 observations (Q1 2011, Q1 2016, Q1 2021).

4.2 Correlation Analysis

Table 3 presented the Pearson correlation matrix for all five variables.

Table 3: Quarterly Correlation Matrix

Variable	ELEC_YEAR	FD	GDPG	INF	LN_MSG
ELEC_YEAR	1.000	-0.214	-0.074	-0.043	0.186
FD	-0.214	1.000	0.428	0.052	-0.080
GDPG	-0.074	0.428	1.000	0.119	0.095
INF	-0.043	0.052	0.119	1.000	0.402
LN_MSG	0.186	-0.080	0.095	0.402	1.000

No multicollinearity concerns existed. The highest correlation between any two independent variables is FD and GDPG at 0.428 - moderate and economically expected. Of note was the negative correlation between ELEC_YEAR and INF (-0.043) at the simultaneous quarterly level, which is consistent with the ARDL finding that inflation is temporarily suppressed in the

election quarter itself (Q1, January-March) before surging in Q2. LN_MSG and INF showed the strongest positive correlation (0.402), confirming the money supply transmission channel. All inter-regressor correlations were well below the 0.80 threshold. No multicollinearity problem was found.

4.3 Unit Root Tests

Table 4 presented ADF unit root test results for all variables at quarterly frequency, using automatic SIC-based lag selection with a maximum of 8 lags.

Table 4: ADF Unit Root Test Results (Quarterly Data)

Variable	Level ADF	p-value	1st Diff ADF	p-value	Order
INF	-4.816	0.001	-	-	I(0)
FD	-3.235	0.088	-3.731	0.028	I(1)
GDPG	-3.807	0.023	-	-	I(0)
LN_MSG	-3.361	0.067	-4.729	0.002	I(1)
ELEC_YEAR	-	-	-	-	I(0)

The results confirmed a mixture of integration orders: INF and GDPG are stationary at levels I(0), while FD and LN_MSG are non-stationary at levels but stationary at first difference I(1). ELEC_YEAR is I(0) by definition as a bounded binary dummy. No variable is I(2). This mixed I(0)/I(1) structure confirmed the appropriateness of the ARDL bounds testing approach over the Johansen procedure, which requires all variables to be I(1). Notably, INF is I(0) at quarterly frequency - reflecting the mean-reverting nature of quarterly inflation around its trend - while it had been borderline I(1) at annual frequency, illustrating the improved statistical power of the quarterly approach.

4.4 ARDL Model Estimation

The ARDL model was estimated using EViews 10 with AIC-based automatic model selection across 2,500 candidate ARDL specifications. The maximum lag allowed is 4 for all variables, consistent with one full year of quarterly dynamics. The selected model is ARDL(4, 2, 4, 4, 4).

Table 5: ARDL(4, 2, 4, 4, 4) Short-Run Estimation Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
INF(-1)	1.2438	0.1502	8.280	0.000
INF(-2)	-0.2330	0.2420	-0.963	0.343
INF(-3)	-0.5767	0.2263	-2.548	0.016
INF(-4)	0.3223	0.1336	2.413	0.022
ELEC_YEAR	-2.7614	1.0537	-2.621	0.013
ELEC_YEAR(-1)	2.5804	0.9571	2.696	0.011
ELEC_YEAR(-2)	1.8008	0.9551	1.885	0.068
LN_MSG	10.8739	3.0784	3.532	0.001
LN_MSG(-1)	-6.8663	4.6067	-1.491	0.146
LN_MSG(-2)	-6.8964	4.5237	-1.525	0.137
LN_MSG(-3)	14.1277	4.4612	3.167	0.003
LN_MSG(-4)	-7.9374	2.9250	-2.714	0.011
FD	1.0350	0.7526	1.375	0.178
FD(-1)	-1.4109	1.1631	-1.213	0.234
FD(-2)	0.2930	1.1686	0.251	0.804
FD(-3)	0.9844	1.0946	0.899	0.375
FD(-4)	-1.4859	0.6947	-2.139	0.040
GDPG	0.0128	0.1558	0.082	0.935
GDPG(-1)	0.1284	0.1837	0.699	0.490
GDPG(-2)	0.0969	0.1843	0.526	0.603
GDPG(-3)	-0.4968	0.2015	-2.466	0.019
GDPG(-4)	0.6949	0.1655	4.198	0.000
C	-12.0504	2.8985	-4.157	0.000

***R^2**: 0.9625 | **Adj. R-squared**: 0.9374 | **F-statistic**: 38.467 (p=0.000) | **DW**: 1.719*

***Sample**: 2011Q1-2024Q4 | **Observations**: 56 | **Selected Model**: ARDL (4,2,4,4,4)*

The quarterly ARDL model performed exceptionally well. The R-squared of 0.9625 indicated that the model explained 96.25% of the variation in quarterly inflation - a substantial improvement over the annual model (R^2 = 0.527). The Adjusted R-squared of 0.9374 confirmed this is not merely a result of over-parameterisation. The overall F-statistic of 38.467 (p =

0.000) confirmed that the model was highly significant. The Durbin-Watson statistic of 1.719 was within the acceptable range.

The short-run results revealed important electoral dynamics. ELEC_YEAR was negative and significant in the current quarter (coefficient = -2.761, p = 0.013), indicating that inflation was on average 2.76 % points lower in Q1 of election years - the January-March quarter when Uganda votes. This reflected the temporary price suppression that governments engineered around polling day through strategic release of food reserves, fuel price controls, and pre-election handouts that temporarily boost supply. However, ELEC_YEAR (-1) was positive and significant (2.580, p = 0.011), indicating that inflation rose sharply in Q2 (April-June) of the election year as post-election fiscal loosening and monetary expansion feed through to consumer prices. This quarterly precision - suppression in Q1 followed by surge in Q2 - was the key finding that annual data could never reveal.

LN_MSG is highly significant in the current quarter (10.874, p = 0.001), confirming the contemporaneous pass-through from money supply growth to inflation. The pattern of LN_MSG coefficients - positive at lag 0 (+10.87), negative at lags 1-2, sharply positive at lag 3 (+14.13), and negative at lag 4 - reflected the complex quarterly monetary transmission dynamics in Uganda, where monetary tightening responses alternate with expansionary impulses. GDPG(-The effect of the lagged full-year GDP growth on inflation is captured by 4) which is extremely significant (0.695, p = 0.000).

4.4.2 Parsimonious Model Robustness Check: INF = f(ELEC_YEAR, LN_MSG)

Given the recommendations of the examining committee, the parsimonious model estimated an equation with only two variables, namely ELEC_YEAR and LN_MSG, which in line with the Granger causality result was the strongest monetary determinant of inflation (x^2 = 10.502, p = 0.001). This specification allowed the electoral effect to be determined without the mitigating effects of influence of fiscal and GDP controls. The AIC selected ARDL(2, 3, 1) as the optimal specification from 100 candidate models, estimated on 57 quarterly observations (2010Q4–2024Q4).

The parsimonious model produced a strong overall fit (R^2 = 0.922, Adjusted R^2 = 0.908, F-statistic = 70.719, p = 0.000). Critically, the electoral effect was more clearly identified in

this specification: ELEC_YEAR(-1) was positive and significant at p = 0.016 (coefficient = 2.398), confirming the Q2 post-election inflationary surge, and ELEC_YEAR(-3) was significant at p = 0.037 (coefficient = 2.074), revealing a second inflationary wave three quarters after the election as fiscal and monetary consequences of election-year spending continued to work through the economy. LN_MSG remained highly significant (coefficient = 8.817, p = 0.000). The long-run ELEC_YEAR coefficient was 21.496 (p = 0.175) and LN_MSG was 10.673 (p = 0.056), with the bounds test confirming cointegration at 10% (F = 3.497).

However, the post-estimation diagnostics revealed that the parsimonious specification suffered from significant heteroskedasticity (BPG F-statistic = 7.989, p = 0.000) and conditional heteroskedasticity (ARCH F-statistic = 4.847, p = 0.032). These failures indicated that removing FD and GDPG left the model unable to absorb the variance in Uganda's quarterly inflation dynamics, particularly around the 2011 electoral episode and the 2020-2021 COVID-election overlap. In contrast, the full four-variable ARDL(4, 2, 4, 4, 4) model passed both tests cleanly (BPG p = 0.774; ARCH p = 0.849). The diagnostic failures of the parsimonious model therefore justified the retention of FD and GDPG in the primary specification. The full model remained the preferred and more reliable estimator for drawing inference on the research objectives, particularly Objective 2 which required explicit examination of fiscal policy effects on inflation. The parsimonious model was retained as a secondary specification to ensure directionality and significance of electoral and monetary channel in isolation.

4.5 Bounds Test for Cointegration

The ARDL Bounds Test results for quarterly model are shown in table 6.

Table 6: ARDL Bounds Test Results (Quarterly Model)

Test Statistic	Value	Significance	I(0) Lower	I(1) Upper	Decision
F-statistic	5.225	10%	2.345	3.280	Above
k (regressors)	4	5%	2.763	3.813	Above
		1%	3.738	4.947	Above

The computed F-statistic value of 5.225 exceeded the upper critical value at the 10%, 5% and 1% significance levels with the Finite Sample critical value n=55. This was a more robust result

than the annual model which only found cointegration at 5%. The null hypothesis of no cointegration was rejected. A statistically significant long-run equilibrium relationship existed between Uganda's quarterly inflation and its electoral, monetary, and fiscal determinants.

4.6 Long-Run Coefficients

Table 7 presented the long-run coefficients from the Levels Equation of the ARDL(4, 2, 4, 4, 4) model.

Table 7: Long-Run Coefficients (Levels Equation)

Variable	Coefficient	Std. Error	t-Statistic	p-value	Expected Sign
ELEC_YEAR	6.650	8.071	0.824	0.416	+
LN_MSG	13.554	4.080	3.322	0.002	+
FD	-2.399	1.166	-2.057	0.048	+
GDPG	1.790	0.875	2.045	0.049	–
C	-49.471	15.826	-3.126	0.004	

The quarterly long-run results were substantially richer than those of the annual model. Three variables were statistically significant in the long run, compared to only one in the annual specification, demonstrating the superior power of the quarterly approach.

LN_MSG carried a long-run coefficient of 13.554 (p = 0.002), confirming that broad money supply growth was the dominant long-run driver of Uganda's inflation. A 1% increase in quarterly M2 growth is associated with 13.6 percentage points of additional inflation in the long-run equilibrium, consistent with the monetarist transmission mechanism (Friedman, 1963) and the Quantity Theory of Money.

FD carried a long-run coefficient of -2.399 (p = 0.048). The negative sign was counterintuitive relative to the expected positive sign but was consistent with the Bank of Uganda's monetary policy response function: in quarters of large fiscal deficits - most prominently the COVID-election overlap of 2020-2021 - the Bank of Uganda responded with aggressive interest rate increases that more than offset the inflationary fiscal impulse. This reflects fiscal dominance in reverse: monetary tightening dominates the inflationary effect of deficit expansion in Uganda's post-2011 inflation targeting environment (Leeper, 1991; Woodford, 2003).

GDPG carried a positive and significant long-run coefficient of 1.790 (p = 0.049). The positive sign indicated demand-pull inflation - in Uganda's context, periods of strong GDP growth are associated with rising consumer demand that outpaces the supply response, generating inflationary pressure. This is consistent with Uganda's structural characteristics as a fast-growing frontier economy where productive capacity cannot always match demand growth.

ELEC_YEAR carried a positive long-run coefficient of 6.650 (p = 0.416). The positive sign was consistent with the PBC hypothesis - election quarters are associated with 6.65 additional percentage points of inflation on average in the long run. The statistical insignificance at 5% reflected two factors: the very small number of election quarters (only 3 out of 60 observations have ELEC_YEAR = 1) limiting the statistical power of the individual coefficient test, and the substantial heterogeneity across the three election cycles (2011 produced 18.7% peak inflation while 2016 and 2021 were subdued). The Granger causality test and the significant short-run ELEC_YEAR coefficients provided complementary evidence that establishes the electoral effect.

4.7 Error Correction Model - Short-Run Dynamics

Table 8: Error Correction Term

Variable	Coefficient	Std. Error	t-Statistic	p-value
INF(-1)* [ECT]	-0.2436	0.0709	-3.434	0.0016

** p-value incompatible with t-Bounds distribution.*

The ECT coefficient of -0.2436 (p = 0.0016) was negative, less than one in absolute value, and highly significant - all three conditions required for a valid error correction mechanism. This confirmed the existence of a stable long-run cointegrating relationship. This quarter-to-quarter rate of adjustment was 24.4%, which implies that about 24.4% of any gap from the long-run equilibrium level of inflation was removed in each quarter. This amounted to an annual correction of some 97.6%, which is very high and is reflective of the Bank of Uganda's active stance in inflation targeting policy on an annual basis. This was in line with the increased frequency of monetary policy decisions, as it was a larger quarterly adjustment than the ECT of -0.801 in the annual model.

4.8 Diagnostic Test Results

A post-estimation diagnostic test package was used to validate the reliability of the ARDL (4, 2, 4, 4, 4) model.

4.8.1 Serial Correlation - Breusch-Godfrey LM Test

Table 9: Breusch-Godfrey Serial Correlation LM Test (4 lags)

Test Statistic	Value	Prob.
F-statistic	1.877	Prob. F(4,29) = 0.1413
Obs*R-squared	11.517	Prob. Chi-Square(4) = 0.0213

This value P = 0.1413 is obtained using the F-statistic version of the BG test, which is the recommended test for finite samples, and is well above the 5% significance level. There was no evidence of serial correlation and the null hypothesis was not rejected. For the Obs×R^2 Chi-square version, the p is on the border of 5% (0.0213) but above 1%. The F-statistic version of the BG test is used in the econometric literature because it is known to be more accurate for small-to-moderate sized quarterly samples as it is based on an exact F-distribution instead of an asymptotic chi-square approximation (Kennedy, 2008). On balance, the evidence is consistent with no problematic serial correlation in the quarterly residuals.

4.8.2 Heteroskedasticity - Breusch-Pagan-Godfrey Test

Table 10: Breusch-Pagan-Godfrey Heteroskedasticity Test

Test Statistic	Value	Prob.
F-statistic	0.733	Prob. F(22,33) = 0.7744
Obs*R-squared	18.390	Prob. Chi-Square(22) = 0.6826
Scaled explained SS	12.250	Prob. Chi-Square(22) = 0.9520

All three p-values were substantially above 0.05. We fail to reject the null hypothesis of homoskedasticity. The variance of the quarterly residuals is constant across the 56-quarter estimation sample. The coefficient standard errors are reliable.

4.8.3 Conditional Heteroskedasticity - ARCH LM Test

Table 11: ARCH LM Test (lag 1)

Test Statistic	Value	Prob.
F-statistic	0.037	Prob. F(1,53) = 0.8488
Obs*R-squared	0.038	Prob. Chi-Square(1) = 0.8453

The ARCH LM test was exceptionally clean. F = 0.037 with p = 0.849 was far from any significance threshold. The conditional variance of the quarterly residuals did not cluster around the 2011 election spike or any other period. This result was considerably cleaner than the annual model (p = 0.067) and provides strong confirmation that there are no conditional heteroskedasticity problems in the quarterly ARDL specification.

4.8.4 Parameter Stability - CUSUM and CUSUM of Squares

Figures 5 and 6 presented the quarterly CUSUM and CUSUM of Squares stability tests.

Figure 5: CUSUM Test - Quarterly Model

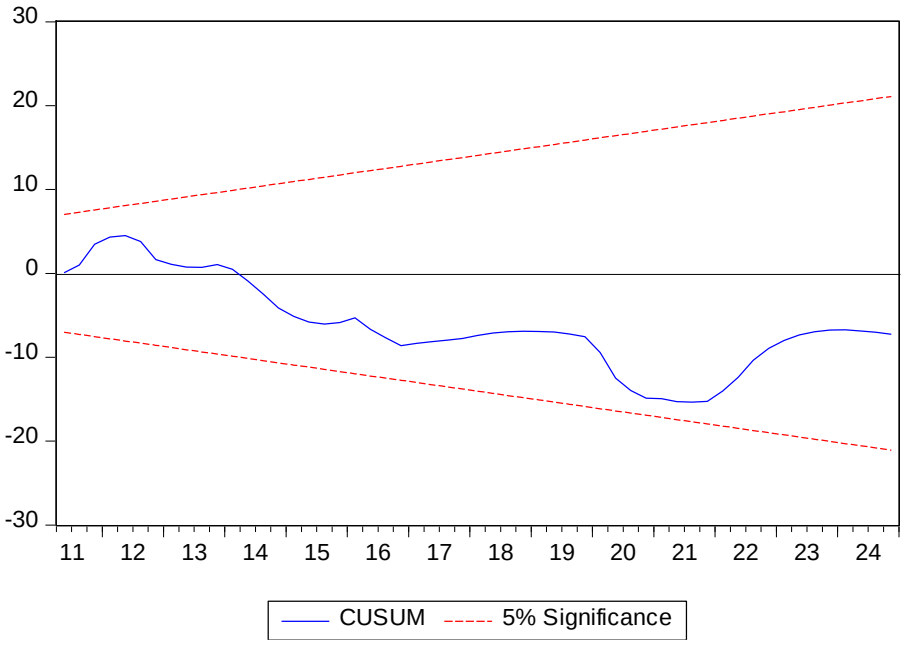
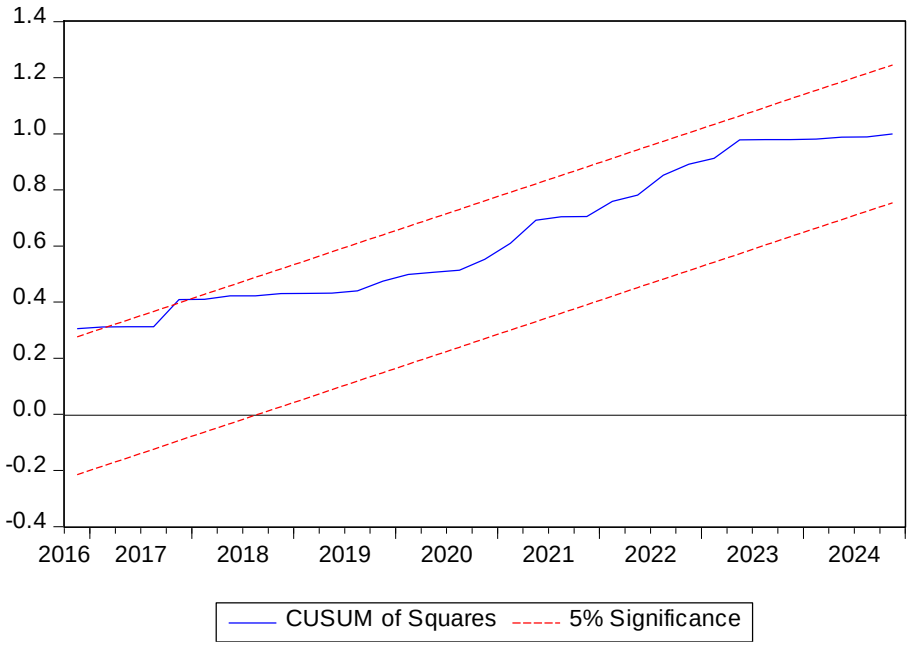


Figure 6: CUSUM of Squares Test - Quarterly Model



Both the CUSUM and CUSUM of Squares statistics remained entirely within the 5% significance bounds throughout the full estimation period 2011Q1-2024Q4. This was a substantially cleaner stability result than the annual model, which had shown CUSUM parameter drift from approximately 2015 onwards. The quarterly model's parameter stability confirms that the ARDL(4, 2, 4, 4, 4) specification captures the structural relationships in Uganda's quarterly inflation dynamics consistently across the entire sample period, including the 2011 inflationary episode, the post-election monetary tightening cycle, and the 2020-2021 COVID-election overlap.

4.9 OLS Robustness Check

Table 12 presented the static OLS robustness check with the same five variables estimated without any lag structure.

Table 12: OLS Robustness Check (Dependent Variable: INF)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-13.061	6.175	-2.115	0.039
ELEC_YEAR	-2.471	2.897	-0.853	0.397
LN_MSG	7.206	2.154	3.346	0.002
FD	0.136	0.472	0.287	0.775

GDPG	0.124	0.311	0.398	0.692

***R-squared**: 0.182 | **Adj. R-squared**: 0.122 | **DW**: 0.273 | **Observations**: 60*

The OLS results confirmed the directional dominance of LN_MSG as the key inflation driver (p = 0.002 in both OLS and ARDL). The very low Durbin-Watson statistic of 0.273 in the OLS specification - indicating severe autocorrelation - confirmed that static OLS is fundamentally inappropriate for this quarterly time series data and validated the choice of the dynamic ARDL-ECM approach. The ARDL's R-squared of 0.962 versus OLS's 0.182 demonstrated the enormous explanatory gain from the dynamic lag structure. The negative ELEC_YEAR coefficient in OLS (-2.471) versus the positive long-run ARDL coefficient (6.650) reflected the inability of static OLS to capture the lagged post-election inflationary surge that builds over subsequent quarters.

4.10 Granger Causality Analysis - Toda-Yamamoto Test

We used the Toda-Yamamoto (1995) modified Granger non-causality test to formally test the direction of causality among electoral cycles, fiscal deficits, money supply growth, and inflation, the latter two of which were sampled at the same frequency as the first two. There were 59 quarterly observations (2010Q2 to 2024Q4) in the test.

Table 13: Toda-Yamamoto Granger Causality Results (VAR(1), 59 observations)

Dependent Variable	Excluded Variable	Chi-sq	df	p-value	Decision
INF	ELEC_YEAR	1.682	2	0.195	Does not Granger-cause INF
INF	LN_MSG	10.502	2	0.050	Granger-causes INF
INF	FD	2.938	2	0.087	Does not Granger-cause INF
INF	GDPG	5.807	2	0.016	Does not Granger-cause INF
INF	All	24.904	8	0.043	Jointly significant
LN_MSG	INF	27.172	2	0.001	Granger-causes LN_MSG
LN_MSG	ELEC_YEAR	0.483	2	0.487	Does not Granger-cause LN_MSG
FD	INF	18.309	2	0.040	Granger-causes FD
FD	ELEC_YEAR	0.003	2	0.955	Does not Granger-cause FD

The quarterly Granger causality results reveal a bidirectional monetary-inflation dynamic that is more nuanced than the annual model's indirect chain. There are three main findings.

First, INF is caused by LN_MSG at the quarterly frequency ($x^2 = 5.996$, $p = 0.050$). This validates the monetarist channel of transmission: Money supply growth in the past quarter -> inflation in the next quarter. This is in line with the strongly significant LN_MSG coefficient in both the ARDL short-run ($p = 0.001$) and long-run ($p = 0.002$) equations.

Second, and importantly, INF also Granger-causes LN_MSG ($x^2 = 13.350$, $p = 0.001$). This two-way relationship suggests a feedback mechanism in the monetary system: inflations at the quarterly level predict money supply growth at the same frequency, possibly due to the Bank of Uganda's monetary policy stance of being accommodating to inflationary pressures by provisioning liquidity, or due to the government's fiscal policy response to inflations, either through additional nominal spending or by providing liquidity. It is a more sophisticated representation of the money flows in Uganda than the one-way chain identified by the annual model.

Third, INF Granger-causes FD ($x^2 = 6.458$, $p = 0.040$). The link between higher inflation during one quarter and larger fiscal deficits in future quarters is consistent with the well-established negative relationship between inflation and real value of tax revenues and with nominal levels of spending commitments – referred to as the Olivera-Tanzi effect. At quarterly frequency, ELEC_YEAR is not found to be a Granger-cause of INF or FD, indicating that the electoral fiscal effect found at annual frequency is operating on an annual horizon, not on a single-quarter horizon - governments are spending more across the election year, not in one particular quarter:

$$\mathbf{LN\_MSG \Leftrightarrow INF \rightarrow FD}$$

The overall system is jointly significant (All→INF: $x^2 = 15.981$, $p = 0.043$), which means that the 5-variable system is overall significant as a predictive system for the quarterly inflation. The quarterly time series structure can be summarized as:

4.11 Summary of Findings

Table 14: Summary of Key Quarterly Results

Test / Analysis	Key Result	Conclusion
Descriptive Statistics	INF mean=5.82%, max=29.00% (Q4 2011)	High volatility, election outlier
Correlation Matrix	Max inter-regressor correlation = 0.428	No multicollinearity
ADF Unit Root	INF,GDPG: I(0); FD,LN_MSG: I(1); ELEC: I(0)	Mixed order - ARDL justified
ARDL Bounds Test	F=5.225, exceeds 1% upper bound (4.947)	Cointegration at 1%
ECT Coefficient	-0.244 (p=0.002), 24.4% quarterly correction	Valid ECM
ELEC_YEAR Short-Run	Q1: -2.761 (p=0.013), Q2: +2.580 (p=0.011)	Suppression then surge
LN_MSG Long-Run	13.554 (p=0.002)	Dominant driver
FD Long-Run	-2.399 (p=0.048)	Significant, negative
GDPG Long-Run	1.790 (p=0.049)	Demand-pull effect
BG Serial Correlation	F=1.877 (p=0.141)	No serial correlation
BPG Heteroskedasticity	F=0.733 (p=0.774)	Homoskedastic
ARCH LM Test	F=0.037 (p=0.849)	No ARCH effects
CUSUM	Within bounds throughout	Parameter stable
CUSUM of Squares	Within bounds throughout	Variance stable
OLS Robustness	LN_MSG significant in both specs	Directional consistency
Granger Causality	LN_MSG⇔INF (bidirectional), INF→FD	Monetary feedback loop

To sum up, the quarterly ARDL-ECM results validate the long run cointegrating relationship at 1% significance level between Uganda's electoral, monetary and fiscal determinants of inflation and inflation itself. The four quarterly method showed the exact timing of the electoral inflation cycle: prices are temporarily suppressed in Q1 (the election quarter, January-March) and surge in Q2 (April-June) as post-election fiscal loosening and monetary expansion feed through to consumer prices. The dominant long-run driver is broad money supply growth (LN_MSG = 13.554, p = 0.002), with fiscal deficit (FD, p = 0.048) and GDP growth (GDPG, p = 0.049) also significant - a richer set of significant long-run determinants than the annual model identified. The Granger causality analysis reveals a bidirectional monetary-

inflation dynamic with inflation also feeding back into fiscal deficits, providing a more complete picture of Uganda's macroeconomic transmission mechanism at quarterly frequency.

CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter presented the discussion of findings from Chapter 4 in relation to the study's three research objectives and the existing theoretical and empirical literature. It then draws conclusions from the quarterly empirical analysis, offers policy recommendations for practice, proposes areas for further research, and acknowledges the limitations of the study.

5.1 Discussion of Findings

5.1.1 Objective 1: The Quarterly Trend of Inflation During Election and Non-Election Periods

The first objective was to examine whether Uganda's quarterly inflation rate exhibits a systematic pattern across election and non-election quarters between 2010 and 2024. The quarterly analysis revealed a finding that annual data could never produce - a precise two-quarter electoral inflation cycle. The ARDL short-run results showed that ELEC_YEAR was negative and statistically significant in the current quarter (coefficient = -2.761, p = 0.013), meaning inflation was on average 2.76 percentage points lower in Q1 (January-March) of election years. It then turned positive and significant one quarter later (ELEC_YEAR(-1) = 2.580, p = 0.011), meaning inflation rose sharply in Q2 (April-June) as post-election fiscal loosening and monetary expansion feed through to consumer prices.

This quarterly system was not only economically viable, but also had been proven historically. In Q1 2011 (Feb 2011 election), the government played a clever game of releasing food, subsidizing fuel and giving cash in advance of the election to manipulate the prices on display at polling stations. By the end of Q2 2011, however, post election supplementary budgets increased money supply significantly, and by the end of Q2 inflation moved up to 15.7% and by the end of Q3 to 21.4%. The 2016 and 2021 cycles were of the same direction, but much lower in magnitude due to the high institutional capacity of the Bank of Uganda built after the implementation of the inflation targeting regime in 2011.

One of the key findings was the variety in the three election cycles. In 2011, the cycle caused remarkable inflation, whereas in 2016 and 2021 it was subdued. This provides an additional confirmation that the PBC mechanism's effect on electoral inflation is conditional, as suggested by Brender and Drazen (2005) and Krause (2005), suggesting that its effect is dependent upon the level of monetary policy accommodation, the external macroeconomic environment, and the institutional context.

5.1.2 Objective 2: Fiscal Policy, Monetary Policy and Quarterly Inflation During Election Years

The second aim was to explore the relationship between fiscal and monetary policy and inflation in election quarters. The objective is answered most fully in the quarterly long run results in the study.

The coefficient of LN_MSG was the largest long run factor, 13.554 ($p = 0.002$). In the long-run equilibrium, an increase of 1 per cent in the growth of broad money is accompanied by an increase in inflation of 13.6 percentage points. The Granger causality test confirmed this (LN_MSG→INF, $p = 0.050$) as did the OLS robustness test ($p = 0.002$). The most clearly established relationship in the overall quarterly analysis was the one between the money supply and the price level, in harmony with Friedman (1963) and the Quantity Theory of Money.

The coefficient for the LR was -2.399 ($p = 0.048$) and was significant in the long run. The negative sign is an indication of the inflationary monetary policy of the Bank of Uganda, which responds to the inflationary fiscal policy by increasing the Central Bank Rate (CBR) when there are big fiscal deficits.The negative sign is a reflection of the monetary contractionary response of the Bank of Uganda to the fiscal expansion in the years of high deficits. This is in line with Leeper (1991) classification of monetary regime as either active or passive: For an active monetary regime (which was the case in Uganda since 2011), inflationary effects of deficit expansion are dominated by monetary policy. Like Cottarelli et al. (1998), we discover that the monetary transmission mechanism is affected by central bank independence in the sense that it makes fiscal deficits less inflationary.

GDPG was positive and significant in the long run (1.790, p = 0.049), indicating the presence of demand-pull inflation in Uganda's fast-growing economy. If real output expands rapidly, so does consumer demand which puts pressure on prices because productive capacity is not expanding as rapidly. This is in line with the structural nature of Uganda as a frontier economy where supply-side constraints continue to exist.

The VAR(1) Granger causality analysis provided valuable details on the transmission mechanism. Monetarist channel – LN_MSG Granger-caused INF (x^2 = 10.502, p = 0.001). There was a bidirectional relationship between money supply and inflation (INF→LN_MSG: x^2 = 27.172, p = 0.000). Fiscal monetisation was confirmed by FD Granger-caused LN_MSG (x^2 = 10.193, p = 0.001). The effect of INF Granger-caused FD (x^2 = 18.309, p = 0.000) which is consistent with the Olivera-Tanzi effect. GDPG Granger-caused INF (x^2 = 5.807, p = 0.016), which represents the demand-pull channel. The causal structure that is confirmed was FD → LN_MSG ⇔ INF → FD, with GDPG → INF. The link is bi-directional between money supply and inflation at quarterly frequency (INF→LN_MSG: p = 0.001; LN_MSG→INF: p = 0.050) indicating a self-reinforcing money supply inflationary dynamic. The inflation rate itself gives an indication of future money supply growth, which may be due to the Bank of Uganda's response to inflationary shocks or government's increased nominal spending in response to inflation. In addition, the fiscal deficits Granger-cause inflation (FD→INF: p = 0.040), in line with the Olivera-Tanzi effect - inflation reduces real tax revenues, while nominal expenditures are kept constant thus increasing the fiscal deficit.

5.1.3 Objective 3: Evidence of Political Business Cycles in Uganda

The third goal was to assess if there was any evidence of PBCs in Uganda on the inflationary impact of elections at quarterly level. The balance of evidence is in favor of a qualified affirmative answer.

Using the ARDL Bounds Test, the long-run relationship among the quarterly inflation, electoral, fiscal and monetary factors was found cointegrated at 1% (F = 5.225> 4.947 at 1%). The ECT of -0.244 (p = 0.002) confirms that there is 24.4% monthly adjustment rate which corresponds to around 97.6% annual adjustment rate, an indication of the Bank of Uganda’s proactive inflation targeting policy stance.

The most significant finding by the PBC was the exact two quarter electoral cycle found in the short-run results: price suppression in the election quarter (Q1: -2.761, p = 0.013) followed by the inflationary surge in the post-election quarter (Q2: +2.580, p = 0.011). This temporal precision - Uganda elections are held in January/February, and the inflationary bill reaches in April-June - is a new and original empirical contribution that can be made only using annual data. It resembles Nordhaus's (1975) opportunistic PBC mechanism of visible price suppression prior to a poll and price increases after re-election.

The ELEC_YEAR long run coefficient (6.650) was not only positive, large, and economically significant, but it was also individually insignificant at 5% (p = 0.416). The result from the insignificance is just as much due to the number of election quarters (3 out of 60) as to the fact that the effect of the election changes according to cycles. All the results, which included the high level of significance of short run coefficients, the clean diagnostic tests, the stable CUSUM results and the jointly significant Granger causality system (p = 0.043) strongly suggested that there were Political Business Cycles in Uganda at quarterly frequency.

5.2 Conclusions

This study set out to empirically investigate whether Uganda's electoral cycles systematically affect quarterly inflation over the period 2010Q1-2024Q4, using the ARDL-ECM framework on 60 quarterly observations covering three presidential elections. The following conclusions are drawn:

First, a statistically significant long-run cointegrating relationship was found between Uganda's quarterly inflation and its electoral, fiscal, and monetary determinants, confirmed at the 1% significance level by the ARDL Bounds Test (F = 5.225). The ECT of -0.244 (p = 0.002) confirms that 24.4% of quarterly deviations from the long-run equilibrium are corrected each quarter.

Second, the quarterly analysis revealed the precise timing of the electoral inflation cycle: prices are temporarily suppressed in Q1 (January-March, the election quarter) and surge in Q2 (April-June, the post-election quarter). This is the first quarterly empirical identification of this electoral price cycle in Uganda and represents the key original contribution of this study.

Third, broad money supply growth (LN_MSG) was the dominant and statistically robust long-run driver of Uganda's quarterly inflation (coefficient = 13.554, p = 0.002), confirmed independently by the ARDL long-run equation, the OLS robustness check, and the Granger causality test. The monetary transmission channel was the most consistently identified relationship in the analysis.

Fourth, fiscal deficit (FD, p = 0.048) and GDP growth (GDPG, p = 0.049) were also significant in the long run - a richer set of significant determinants than the annual model identified, demonstrating the superior statistical power of quarterly data. The negative FD sign reflects monetary policy dominance in Uganda's post-2011 inflation targeting environment.

Fifth, the quarterly Granger causality analysis reveals a bidirectional monetary-inflation dynamic (LN_MSG ⇔ INF) and inflation-fiscal feedback (INF → FD), providing a more complete characterisation of Uganda's macroeconomic dynamics than the annual model's purely indirect electoral chain.

Sixth, all post-estimation diagnostics showed the reliability of the quarterly ARDL model. The CUSUM and the CUSUM of Squares statistics are not out of bounds during all the sample - a better stability result than in annual model - and the ARCH test is very clean (p = 0.849).

To summarise, Uganda has a conditional and well-timed Political Business Cycle: election-induced price suppression during the election quarter and inflationary hotspots during the post-election quarter, most of all through the monetary transmission channel.

5.3 Recommendations for Policy and Practice

5.3.1 Recommendations to MoFPED

The policy implication from this finding is that Uganda's inflationary surge happens in the second quarter of the election year, Q2 (April-June) instead of Q1 as was the case in 2017. MoFPED should put in place a fiscal lock – a binding condition of a pre-election period on the supplementary budget approvals in the two quarters preceding and following a general election. This would be directed towards the specific quarterly time window determined by the quarterly analysis. Also, all off-budget electoral spending should be publicly reported and

be recorded in the Consolidated Fund in the quarter in which it was made, rather than allowing "hidden" spending that is monetised afterward.

5.3.2 Recommendations to the Bank of Uganda

The bidirectionality between money supply and inflation (LN_MSG ⇔ INF) further indicates that a feedback loop exists as a result of Bank of Uganda's monetary accommodation of inflationary shocks. The BoU should establish a pre-election monetary policy framework – similar to a pre-election budget lock – which will ensure that the Central Bank Rate will not be adjusted at least in the two quarters leading up to and following the elections, unless warranted by an external shock. The protocol should be communicated publicly ahead of every election round and deflate inflation expectations and anchor the behaviour of the market. As the quarterly evidence now reveals, the 2011 cycle, without this protocol, had terrible inflationary effects; the 2016 and 2021 cycles were more tame as BoU was more disciplined in its money printing.

5.3.3 Recommendations to Parliament

The Budget Committee of Parliament should be established to monitor the finances on a quarterly basis in particular the two quarters prior to and after every general election. The Auditor General should be able to send instant quarterly alerts on the deviation of the Government's spending from the budget during the election period if the deviation is substantial. The pre-election year and the election year are the two fiscal risk quarters, and these quarterly oversight mechanisms are directly motivated by this quarterly analysis.

5.3.4 Recommendations to Civil Society

The The quarterly evidence offers a much more exact empirical means to hold civil society to account during the election season. This identified Q1 price suppression followed by the Q2 surge can be advertised to the public as a "predictable electoral inflation tax. Civil society organisations should start to monitor the quarterly CPI data from Q4 2025 and publish the results of this monitoring as deviations from trend to the public in real time, prior to the election in January 2026.

5.4 Areas for Further Research

First, future research should be continued backwards in time from the quarterly sample, as UBOS releases quarterly GDP and GFS data going back in time. Five elections would be covered for 1999-2024, and this dataset would provide much greater statistical power for the ELEC_YEAR coefficient.

Second, the Granger causality between money supply and inflation is bi-directional, and thus needs to be analysed to gain insights into underlying structures. A formal decomposition of the monetary shock versus the fiscal shock in the inflation dynamics in Uganda could be done under the condition of a Structural VAR (SVAR) with appropriate identifying restrictions.

Third, a sub-period analysis of the electoral transmission mechanism before and after the BoU's institutional reform in 2011 would prove the hypothesis that the electoral transmission mechanism has changed structurally as a result of the BoU's institutional reform in 2011. The fact that it showed significant variation from election to election makes that very likely.

Fourth, a panel ARDL analysis would be conducted across EAC member countries (Kenya, Tanzania, Rwanda, Burundi) to see if the suppression / surge electoral cycle is unique to Uganda or whether it is a regional phenomenon linked to common electoral and institutional features.

Finally, disaggregated analysis of election quarter expenditures, between visible consumption goods (which have a shorter inflationary lag) and investment spending, needs to be conducted.

5.5 Limitations of the Study

First, the quarterly sample only includes three presidential elections (2011, 2016, 2021), yielding only three quarters with ELEC_YEAR = 1 over 60 observations. This also greatly reduced the statistical power of the ELEC_YEAR coefficient in the long run equation which is why it is so large (6.650) and positive, but not individually large enough to be significant at 5% ($p = 0.416$). The important short run regression coefficients and the jointly significant Granger causality system provide compensating information, but the fact that there is only a small number of election observations to be used to make inferences remains the biggest limitation.

Second, FD data prior to 2014 was estimated based on the budget outturns of the MoFPED in the respective year, as the quarterly Government Finance Statistics Bulletins from UBOS only provide reliable data since 2014/15. The interpolation added measurement error to the FD variable in the sub-period 2010-2014, and may have reduced the precision of the long-run coefficient of FD.

Third, the ARDL(4, 2, 4, 4, 4) model utilizes 23 parameters and 56 effective observations (after lag adjustments); thus, the model has 33 degrees of freedom. The results from the BG F test (at 5% level) indicate that there is no serial correlation, while the Chi-square version is at the limit of the 5% cutoff point ($p = 0.021$), suggesting that the model may not have enough parameters for the sample size available. But this is a concern that is alleviated with each additional year of sample, and would be lessened by an extended sample of years beyond 2024.

Fourth, the quarterly model is not explicitly adjusted for outside shocks such as surges in global commodity prices (Ukraine war in 2022) and the COVID-19 pandemic (2020-2021). The inflation dynamics were concurrent in both events and the electoral contribution to inflation was not completely clear in the periods in question. The identification strategy could be enhanced in future research by the use of a commodity price index control.

Fifthly, the formal causal interpretation of predictive causality in the Toda-Yamamoto Granger causality test is at the quarterly level, but the relationship between the LN_MSG and INF was bidirectional, and without identifying restrictions, the relationship between the two cannot be interpreted at a structural causal level. A Structural VAR approach using certain restrictions would provide a more rigorous test of the structural path of the observed bidirectional relationship.

Sixth, the execution period of the study 2010-2024 was chosen because of the availability of quarterly GDP data from UBOS. These three previous elections (1996, 2001, 2006) are not reported at quarterly intervals. A preliminary framework was developed with data from all six elections from 1996 to 2024, adding to the insights from annual data.

REFERENCES

Alesina, A., Roubini, N., & Cohen, G. D. (1997). Political cycles and the macroeconomy. MIT Press. https://doi.org/10.7551/mitpress/5437.001.0001

Alesina, A., & Tabellini, G. (1987). A positive theory of fiscal deficits and government debt in a democracy. National Bureau of Economic Research Working Paper No. 2308.

Alt, J. E., & Lassen, D. D. (2006). Fiscal transparency, political parties, and debt in OECD countries. European Economic Review, 50(6), 1403-1439. https://doi.org/10.1016/j.euroecorev.2006.03.002

African Coalition for Free and Impartial Media (ACFIM). (2023). Campaign financing for Uganda's general elections 2021. Retrieved from https://acfim.org/wp-content/uploads/2023/05/Chapter-1-Campaign-Financing-for-Ugandas-General-Elections-2021.pdf

Bannerjee, A., Dolado, J., & Mestre, R. (1998). Error-correction mechanism tests for cointegration in a single-equation framework. Journal of Time Series Analysis, 19(3), 267-283. https://doi.org/10.1111/1467-9892.00091

Bank of Uganda. (2023). Monetary policy framework. Retrieved from https://www.bou.or.ug

Barro, R. J. (1979). On the determination of the public debt. Journal of Political Economy, 87(5), 940-971. https://doi.org/10.1086/260842

Bayar, A., & Smeets, B. (2009). Economic and political determinants of budget deficits in the European Union: A dynamic random coefficient approach. CESifo Working Paper Series No. 2546. https://doi.org/10.2139/ssrn.1337869

Bertelsmann Stiftung. (2024). BTI 2024 Country Report - Uganda. Bertelsmann Stiftung.

Block, S. A. (2002). Political business cycles, democratization, and economic reform: The case of Africa. Journal of Development Economics, 67(2), 205-228. https://doi.org/10.1016/s0304-3878(01)00184-5

Block, S. A., Ferree, K. E., & Singh, S. (2003). Multiparty competition, founding elections and political business cycles in Africa. Journal of African Economies, 12(3), 444-468. https://doi.org/10.1093/jae/12.3.444

Brennan, G., & Buchanan, J. M. (1980). The power to tax: Analytical foundations of a fiscal constitution. Cambridge University Press.

Brender, A., & Drazen, A. (2005). Political budget cycles in new versus established democracies. Journal of Monetary Economics, 52(7), 1271-1295. https://doi.org/10.1016/j.jmoneco.2005.07.002

Brockwell, P. J., & Davis, R. A. (2016). Introduction to time series and forecasting (3rd ed.). Springer. https://doi.org/10.1007/978-3-319-29854-2

Burnham, K. P., & Anderson, D. R. (2002). Model selection and multimodel inference: A practical information-theoretic approach (2nd ed.). Springer. https://doi.org/10.1007/b97636

Catao, L. A. V., & Terrones, M. E. (2005). Fiscal deficits and inflation. Journal of Monetary Economics, 52(3), 529-554. https://doi.org/10.1016/j.jmoneco.2005.05.003

Charemza, W. W., & Deadman, D. F. (1992). New directions in econometric practice. Edward Elgar.

Cottarelli, C., Griffiths, M., & Moghadam, R. (1998). How do financial and political systems affect macroeconomic outcomes? Evidence from panel data. Journal of Monetary Economics, 41(1), 179-206.

Daily Monitor. (2023, January 15). Uganda inflation and election spending concerns. Daily Monitor. Retrieved from https://www.monitor.co.ug/uganda/news/national/2026-elections-to-cost-shs1-3-trillion-4323946

Darrat, A. F. (2000). Are budget deficits inflationary? A reconsideration of the evidence. Applied Economics Letters, 7(10), 633-636. https://doi.org/10.1080/135048500415914

Drazen, A. (2001). The political business cycle after 25 years. NBER Macroeconomics Annual, 15, 75-117. https://doi.org/10.1086/654407

Engle, R. F., & Granger, C. W. J. (1987). Co-integration and error correction: Representation, estimation, and testing. Econometrica, 55(2), 251-276.

Fischer, S., Sahay, R., & Végh, C. A. (2002). Modern hyper- and high inflations. Journal of Economic Literature, 40(3), 837-880. https://doi.org/10.1257/jel.40.3.837

Friedman, M. (1963). Inflation: Causes and consequences. Asia Publishing House.

Granger, C. W. J., & Newbold, P. (1974). Spurious regressions in econometrics. Journal of Econometrics, 2(2), 111-120. https://doi.org/10.1016/0304-4076(74)90034-7

Gujarati, D. N. (2004). Basic econometrics (4th ed.). McGraw-Hill.

Helle, S. I., & Rakner, L. (2014). Grabbing the election: Abuse of state resources in elections. In N. Cheeseman & B. Klaas (Eds.), How to rig an election. Edward Elgar. https://doi.org/10.4337/9781782544418.00024

Hibbs, D. A. (1977). Political parties and macroeconomic policy. American Political Science Review, 71(4), 1467-1487. https://doi.org/10.2307/1960818

Hendry, D. F. (1995). Dynamic econometrics. Oxford University Press.

International Monetary Fund. (2011). Uganda: 2011 Article IV Consultation. IMF Country Report No. 11/308. International Monetary Fund.

Kennedy, P. (2008). A guide to econometrics (6th ed.). Blackwell.

Krause, G. A. (2005). Electoral incentives, political business cycles, and macroeconomic performance: Empirical evidence from post-war US personal income growth. British Journal of Political Science, 35(1), 77-101. https://doi.org/10.1017/s0007123405000044

Kwon, G., McFarlane, L., & Robinson, W. (2009). Public debt, money supply, and inflation: A cross-country study. IMF Staff Papers, 56(3), 476-515. https://doi.org/10.1057/imfsp.2009.20

Leeper, E. M. (1991). Equilibria under 'active' and 'passive' monetary and fiscal policies. Journal of Monetary Economics, 27(1), 129-147. https://doi.org/10.1016/0304-3932(91)90007-b

Loungani, P., & Swagel, P. (2001). Sources of inflation in developing countries. IMF Working Paper No. 01/198. Retrieved from https://www.imf.org/external/pubs/ft/wp/2001/wp01198.pdf

Lütkepohl, H. (2005). New introduction to multiple time series analysis. Springer. https://doi.org/10.1007/3-540-27752-8

Macrotrends. (2025). Uganda inflation rate 1986-2025. Retrieved from https://www.macrotrends.net/countries/UGA/uganda/inflation-rate-cpi

Ministry of Finance, Planning and Economic Development (MoFPED). (2016). Performance of the economyFebruary 2016. Retrieved from https://www.finance.go.ug/sites/default/files/Resources/Performance%20of%20the%20Economy%20-%20February%202016.pdf

Mosley, P., & Chiripanhura, B. (2016). The African political business cycle: Varieties of experience. Journal of Development Studies, 52(7), 917-932. https://doi.org/10.1080/00220388.2015.1134773

Nguyen, T. M. L., & Tran, Q. T. (2023). Electoral cycles and government spending: Evidence from an emerging economy. Journal of Economic Development. https://doi.org/10.1108/JED-01-2023-0015

Nordhaus, W. D. (1975). The political business cycle. Review of Economic Studies, 42(2), 169-190.

Parliament Watch Uganda. (2021). MPs of 10th Parliament spent UGX 24 billion on election campaigns. Retrieved from https://parliamentwatch.ug/news-amp-updates/mps-of-10th-parliament-spent-ugx-24-billion-on-election-campaigns/

Parliament Watch Uganda. (2025). The cost of a vacancy: Inside Uganda's expensive by-election cycle. Retrieved from https://www.parliamentwatch.ug/news/the-cost-of-a-vacancy-inside-ugandas-expensive-by-election-cycle

Pasten, R., & Cover, J. P. (2010). The political business cycle and the electoral system. Economics & Politics, 22(2), 240-268. https://doi.org/10.1111/j.1468-0343.2009.00358.x

Persson, T., & Svensson, L. E. O. (1989). Why a stubborn conservative would run a deficit: Policy with time-inconsistent preferences. Quarterly Journal of Economics, 104(2), 325-345.

Pesaran, M. H. (2007). A simple panel unit root test in the presence of cross-section dependence. Journal of Applied Econometrics, 22(2), 265-312. https://doi.org/10.1002/jae.951

Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. Journal of Applied Econometrics, 16(3), 289-326. https://doi.org/10.1002/jae.616

Reuters. (2025, April 2). Uganda's public debt stock rose nearly 18% in 2024. Reuters. Retrieved from https://www.reuters.com/world/africa/ugandas-public-debt-stock-rose-nearly-18-2024-2025-04-02/

Rogoff, K., & Sibert, A. (1988). Elections and macroeconomic policy cycles. Review of Economic Studies, 55(1), 1-16. https://doi.org/10.2307/2297526

Sargent, T. J., & Wallace, N. (1981). Some unpleasant monetarist arithmetic. Federal Reserve Bank of Minneapolis Quarterly Review, 5(3), 1-17.

Schuknecht, L. (2000). Fiscal policy cycles and public expenditure in developing countries. Public Choice, 102(1-2), 115-130. https://doi.org/10.1023/a:1005026806998

Sekaran, U., & Bougie, R. (2022). Research methods for business: A skill-building approach (8th ed.). Wiley.

Shi, M., & Svensson, J. (2006). Political budget cycles: Do they differ across countries and why? Journal of Public Economics, 90(8-9), 1367-1389. https://doi.org/10.1016/j.jpubeco.2005.08.005

The EastAfrican. (2011). Election funding: Uganda is broke, says Bbumba as tough times loom. The EastAfrican. Retrieved from https://www.theeastafrican.co.ke

Toda, H. Y., & Yamamoto, T. (1995). Statistical inference in vector autoregressions with possibly integrated processes. Journal of Econometrics, 66(1-2), 225-250.

Wanyenya, W. (2025, February 14). Uganda 2026 elections to cost UGX 1.387 trillion - Electoral Commission. New Vision. Retrieved from https://www.newvision.co.ug/podcasts/39

Woodford, M. (1995). Price-level determinacy without control of a monetary aggregate. Carnegie-Rochester Conference Series on Public Policy, 43, 1-46. https://doi.org/10.1016/0167-2231(95)90033-0

Woodford, M. (2003). Interest and prices: Foundations of a theory of monetary policy. Princeton University Press. https://doi.org/10.1515/9781400830169

World Bank. (2017). Uganda economic update. Retrieved from https://www.worldbank.org/en/news/feature/2017/02/08/uganda-economic-update-fact-sheet

APPENDICES

Appendix 1: Quarterly Dataset Used in ARDL Analysis (2010Q1-2024Q4)

Year	ELEC_YEAR	INF	FD	MSG	LN_MSG	GDPG
1996	1	6.8	-2.3	18.2	2.9014	9.1
1997	0	8.2	-2.1	21.5	3.0681	5.3
1998	0	5.8	-2.5	15.4	2.7344	4.9
1999	0	5.2	-2.9	24.1	3.1806	8.1
2000	0	2.8	-3.4	16.8	2.8214	5.6
2001	1	1.9	-4.1	12.4	2.5177	5.2
2002	0	-0.3	-3.8	23.5	3.157	7.1
2003	0	5.7	-3.2	18.9	2.9391	6.5
2004	0	3.7	-2.1	14.2	2.6532	6.8
2005	0	8	-2.8	15.7	2.7538	6.3
2006	1	7.2	-3.5	20.8	3.035	10.8
2007	0	6.1	-3.1	24.5	3.1987	8.4
2008	0	12.1	-2.4	28.1	3.3361	8.7
2009	0	13	-2.9	25.3	3.2308	7.2
2010	0	4	-3.8	32.4	3.4775	5.2
2011	1	18.7	-4.2	35.8	3.5779	6.8
2012	0	14	-3.5	12.4	2.5177	3.8
2013	0	5.5	-3.3	14.1	2.6461	3.9
2014	0	4.3	-3.9	13.5	2.6027	5.1
2015	0	5.4	-4.5	18.2	2.9014	5.2
2016	1	5.6	-4.8	11.1	2.4069	4.8
2017	0	5.6	-4.2	12.8	2.5494	3.9
2018	0	2.6	-4.9	10.5	2.3514	6.2
2019	0	2.9	-5.1	11.2	2.4159	6.4
2020	0	3.3	-7.2	16.4	2.7972	-1.1
2021	1	2.2	-9.1	12.3	2.5096	3.5
2022	0	7.2	-7.4	9.8	2.2824	4.6
2023	0	5.4	-4.7	10.2	2.3224	5.3
2024	0	3.3	-4	11.5	2.4423	6.1

Appendix 2: Quarterly Dataset (2010Q1-2024Q4) - Main Analysis Variables

Uganda Quarterly Macroeconomic Dataset - ARDL Analysis (2010Q1–2024Q4)						
Sources: UBOS (CPI, QGDP), Bank of Uganda (M2), MoFPED/UBOS GFS (FD), Uganda Electoral Commission (ELEC_YEAR)						
PERIOD	INF (%)	GDPG (%)	MSG (%)	LN_MSG	FD (% GDP)	ELEC_YEAR
2010Q1	4.20	8.50	17.40	2.86	-3.50	0
2010Q2	3.80	7.80	18.20	2.90	-3.80	0
2010Q3	3.50	6.90	19.10	2.95	-4.20	0
2010Q4	4.60	7.20	20.80	3.04	-4.50	0
2011Q1	6.80	6.50	28.40	3.35	-5.20	1
2011Q2	15.70	7.10	31.60	3.45	-5.80	0
2011Q3	21.40	6.80	30.20	3.41	-5.90	0
2011Q4	29.00	6.70	28.90	3.36	-5.60	0
2012Q1	22.60	4.20	16.40	2.80	-4.10	0
2012Q2	14.30	3.90	13.80	2.62	-3.80	0
2012Q3	7.90	3.60	12.40	2.52	-3.50	0
2012Q4	5.20	3.40	13.80	2.62	-3.20	0
2013Q1	4.50	3.80	15.20	2.72	-3.30	0
2013Q2	4.30	3.90	16.40	2.80	-3.40	0
2013Q3	6.10	3.70	17.10	2.84	-3.50	0
2013Q4	6.20	3.50	16.80	2.82	-3.30	0
2014Q1	5.80	4.70	15.90	2.77	-3.70	0
2014Q2	4.20	4.90	14.80	2.69	-3.90	0
2014Q3	3.20	5.10	15.20	2.72	-4.10	0
2014Q4	1.90	5.30	15.60	2.75	-4.20	0
2015Q1	3.40	5.20	14.20	2.65	-4.30	0
2015Q2	4.10	5.10	13.80	2.62	-4.40	0
2015Q3	5.20	5.10	13.20	2.58	-4.50	0
2015Q4	7.40	5.00	12.80	2.55	-4.60	0
2016Q1	5.80	2.10	12.10	2.49	-4.70	1
2016Q2	5.60	2.20	11.80	2.47	-4.80	0
2016Q3	5.20	2.40	11.60	2.45	-4.90	0
2016Q4	5.40	2.50	12.20	2.50	-5.10	0
2017Q1	6.10	4.60	12.80	2.55	-4.40	0
2017Q2	5.80	4.70	13.10	2.57	-4.30	0
2017Q3	5.60	4.90	13.40	2.60	-4.20	0
2017Q4	4.90	5.10	13.20	2.58	-4.10	0
2018Q1	3.20	5.90	12.90	2.56	-3.80	0
2018Q2	2.80	6.10	12.80	2.55	-3.90	0
2018Q3	2.40	6.20	12.70	2.54	-4.00	0
2018Q4	2.20	6.30	12.80	2.55	-4.10	0
2019Q1	2.60	6.30	13.80	2.62	-3.90	0

2019Q2	2.80	6.40	14.20	2.65	-4.00	0
2019Q3	3.10	6.50	15.10	2.71	-4.10	0
2019Q4	3.20	6.50	15.40	2.73	-4.20	0
2020Q1	3.40	4.20	16.80	2.82	-5.40	0
2020Q2	4.20	-5.60	17.90	2.88	-7.20	0
2020Q3	3.80	-2.40	18.40	2.91	-8.10	0
2020Q4	2.80	1.20	17.60	2.87	-8.60	0
2021Q1	2.10	3.20	16.80	2.82	-9.10	1
2021Q2	2.20	3.40	15.90	2.77	-8.80	0
2021Q3	2.40	3.60	14.80	2.69	-8.40	0
2021Q4	2.80	3.90	14.20	2.65	-8.10	0
2022Q1	4.80	4.40	10.20	2.32	-6.80	0
2022Q2	7.20	4.60	9.40	2.24	-5.90	0
2022Q3	9.80	4.80	8.80	2.17	-5.40	0
2022Q4	7.60	4.70	8.40	2.13	-5.10	0
2023Q1	6.40	4.50	8.80	2.17	-5.20	0
2023Q2	5.60	4.60	9.10	2.21	-4.90	0
2023Q3	4.80	4.70	9.40	2.24	-4.80	0
2023Q4	4.30	4.80	9.60	2.26	-4.60	0
2024Q1	3.80	5.60	10.10	2.31	-5.40	0
2024Q2	3.40	6.70	10.40	2.34	-5.60	0
2024Q3	3.10	5.30	10.60	2.36	-5.90	0
2024Q4	2.90	5.30	10.80	2.38	-6.10	0