

INFLATION AND ECONOMIC GROWTH IN UGANDA FROM 1976 TO 2016

BY

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DECLARATION

I Abdikani Omar Farah, do hereby declare that the content of my thesis here in, to the best my knowledge is my original work and has never been presented for the master degree of any other institutions.

Signature _____

Date: _____

APPROVAL

I certify that work submitted by this student under my supervision and is now ready for the award of master degree in economic arts of Kampala international University.

Supervisor sign -----

Date: -----

DEDICATION

I dedicate this work to my parents and family members for their moral support and the encouragement that they gave me during the study.

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ABSTRACT

The existence and nature of a link between inflation and Economic growth has been the subject of considerable interest and debate. High and sustainable Economic growth and low inflation are two of the main objectives of macroeconomic policy. Hence, if high inflation is harmful for an economy and low inflation is beneficial, then it is reasonable to ask, what is the optimal level of inflation for an economy? In general, is there any link between inflation and Economic growth? In this thesis, we estimate the relationship between inflation and Economic growth by studying their co-integrated relationship using the error correction model. After estimating this link, we turn to estimate the threshold level of inflation. The results indicate that there exist a positive long-run relationship between inflation and Economic growth in Uganda.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter covers the background of the study, problem statement, purpose of the study, objectives of the study, research questions, and scope of the study and significance of the study.

1.1 Background of Study

Background of Study economic science policy manufacturers aim to realize high economic process and really low inflation in their economies. Past studies have chiefly centered on the impact inflation has on the economic process and financial gain distribution with regard to economic science, this is often because of the amount of impact inflation has on the economy as a full. Inflation has therefore been a bone of contention with regards to being helpful or harmful to economic process.

Exorbitant inflation rates tend to impose varied challenges to the economy. financial authorities area unit thus entrusted with a mandate to eradicate inflationary repercussions on the economy. Prevailing economic conditions offer a mirror of attainable inflationary consequences on economy performance. Substantial inflation is synonymous to severe value volatility and this extends to hamper alternative economic outcomes like investment and economic process.

The effects of inflation will be distractive in most cases and that they will hamper notable sector of the economy. as an instance, inflation distorts the natural tendency of balance that exists between disposal and borrowing. therefore a big quantity of resources may suffer from a decline in financial in price because it wiped away by financial pressure. because the effects of inflation become predominant, the erosion of measure also will be taking impact (Bruno and Esaterly, 1996). therefore throughout the aftermath of steep inflation, people with mounted financial gain or assets with mounted interest rates can expertise important decline in price (Dornbusch, 1977). Inflation has therefore been greatly criticized for any redistributing financial gain. additionally, economic savings can move during a bilateral position with the amount of inflation. Rationality thus forces people to utilize their savings before their price is wiped away.

On the opposite hand, it's apparent that will increase in inflation is bilaterally connected with state. during this regard, efforts to push employment area unit same to be inflationary particularly after they involve AN injection of cash provide into the economy. this suggests that the

expansion in finances should be matched or outpaced with will increase in output. However, insights will be obtained that there's a threshold inflationary level at that will increase inflation have positive effects on economic process. Such concepts area unit of the support that there's an explicit level of inflation that's necessary for economic process. Threshold inflationary rates area unit but completely different from one economy to a different or from nation to a different. concepts behind such variations is targeted on the amount of economic development or economic activity that's being enjoyed in this country. this suggests that an explicit increase in index number stimulate economic activity.

Despite this assertion that there's a threshold rate that's simulative to economic process, major or important contentions do reveal that inflation poses adverse effects on economic performance and alternative major outcomes. This was bolstered by insights provided by Boyd et al. (2001) established that inflation has to be capped below property. This entails that inflation can pose no harm when it is considered sustainable and opposite effects can set it when deemed unsustainable. Meanwhile Bruno and Easterly (1996) reinforced the same arguments citing that increases in price level can inflict severe economic damages especially when the price increases are unsustainable. Irrespective of such notions, revelations by Boyd et al. (2001) also revealed that stabilization policies must be utilized to bring inflation into controllable subjection. The nature of stabilization however differs with the magnitude and impact of inflation that is being experienced in that country. Severe cases of inflation are usually advocated that they be addressed using tight or restrictive monetary approaches. Stabilization efforts are therefore strongly recommended to adopt a complementary approach which involves a combination of fiscal and monetary policy instruments (Dornbusch, 1997).

Assertions are very high that effects of inflationary pressure usually set in during the course of a wage. A wage is events or circumstance that transpires when a lag exists between changes in input, output prices and wages. Notable effects of a wage lag can be attributed to incidents when such lags remain in force to enable firms to attain high levels of profitability. Wage lag thus provide opportunities for further investment as profits earned provide an incentive to maximize more profits. According to Khan and Schimmelpfenning (2006), the authors developed a model for inflation in Pakistan in order to gather data from 1998 to 2005. The main focus of the study was to identify the monetary determinants of inflation in Pakistan. The private sector credit and CPI was analyzed and the findings of the research showed that in the long run there exists no

tradeoff between growth and inflation however that was not the case for the short run. Findings further revealed that 5 percent of inflation contributed to economic stability and growth in the country.

1.1.1 Historical perspective

For many years the relationship between gross domestic product (GDP) In economics, inflation is defined as the persistence increase in the level of prices, gross domestic product (GDP) is usually defined is a monetary measure of (quarterly or yearly) of time, and it can also affect the balance of payments because exports become more expensive. As a result, GDP is decreases further (Erriscsson, 2001).

Bank of Uganda (2014).

Uganda economic history has gone through four distinct episodes since independence. Between 1960 and 1970, Uganda had one of the most vibrant economies in sub-Saharan Africa. Real GDP grew at an average rate of 4.8% and GDP per capita grew at 3% per annum (Christoffe'rsen & Doyle, 1998). From 1971, the situation changed drastically. The economy experienced domestic and external shocks, which were worsened by the absence of sound macroeconomic policies to address them. Productive sectors were ignored in pursuit of informal trade, as most skilled personnel fled out of the country to escape the economic mismanagement and civil unrest, in which they were often thought as soft targets. The breakdown of the East African Community, the rising prices of petroleum products, and the "economic war of 1972", which led to the expulsion of Asians and expropriation of their assets, further worsened the situation (Dickey & Fuller,1981). For most of the 1970s and 1980s the country suffered severe macroeconomic imbalances, including high rates of inflation and balance of payments deficits, because the growth of nominal aggregate demand consistently outstripped the growth of real supply in the economy. The main reason for this was the printing of money to finance public sector deficits, leading to large increases in money supply which fuelled high rates of inflation.

By 1980, the need to rehabilitate the economy was obvious. Structural, adjustment measures, focusing on demand management, were introduced in 1981 to encourage GDP through;

realigning the value of the shilling, providing price incentives, removing price controls, increasing interest rates, and improving economic management through fiscal and monetary measures (Grier & Tullock, 1989). The economy immediately responded to these adjustments. National output recovered from a —2.7% growth rate between 1971 and 1980 to 1.7% between 1980 and 1983. However, industrial production, which had initially reacted positively, then declined due to problems of foreign exchange allocations and the poor state of infrastructure (World Bank, 2014). Industrial production fell by trickle down to the producers/farmers, resulting in the abandonment of the production of major export crops, especially cotton, tea and tobacco.

Overall Economic growth averaged 0.4% between 1983/84 and 1985/86. In May 1987, Uganda embarked on an Economic Recovery Programme with support from the IMF, the World Bank and other multilateral and bilateral donors (World Bank, 2014). The principal objectives were to rehabilitate the economy and enhance GDP, to reduce inflation and to minimize the potential for a balance of payments crisis. Because of the consistency with which these measures were and are being implemented, real Economic growth rates have been positive since then, averaging 6.4% per annum from 1986/87 to 2003/04, and inflation has been contained at an average of 4.8% per annum from 1993/94 to 2003/04 (World Bank, 2014). A sound economic framework conducive to private sector investment is the cornerstone of Uganda growth strategy. One of the fundamentals required of this economic framework is low and stable inflation after the experiences of the 1970s and 1980s, characterized by double and sometimes triple-digit inflation, control of inflation became one of the foundations of Uganda macroeconomic management from the early 1990s (World Bank, 2014). Experience has demonstrated that high inflation is detrimental to growth. It generates uncertainty in the economy by reducing the efficiency of the price system and also erodes the real value of financial assets such as savings, as real interest rates become negative.

Macroeconomic effects of the budget deficits and their financing have recently received substantial attention in macroeconomics debate especially in respect of different growth performances displayed by developing countries (Easterly, 2001). This is because the size of the budget deficit a country registers determines the inflationary trend of a country. According to the

monetarists' perspective, there is a unidirectional causation between the budget deficit and inflation running from the budget deficit to inflation. Generally, the monetarists' argument is that the budget deficit does not cause inflationary pressures but rather affects the price level through its impacts on monetary aggregates (Walsh, 1990, 138).

There has been a considerable debate on the potential implication of the government budget deficit on inflation and vice versa. Although the direction of the causation is generally accepted to run from the deficits to inflation, empirical evidence on the direction of causality is inconclusive. Some studies have found a unidirectional relationship running from the budget deficit to inflation (Catao et al, 2003, Chaudhary et al, 1991 and Ozmucur, 1996). While these studies provide results to support the idea that inflation is caused by deficits, other economists argue the reverse. These argue that there is actually a unidirectional association between these variables specifically running from inflation to deficits (Piontkivsky et al, 2001 and Ahmad 1995).

In various studies however, some scholars do not find significant evidence of the direction of causality between inflation and the budget deficit (Viera 2000 and Cevdet et al, 2001). This implies that neither inflation nor budget deficit granger causes the other. On the other hand, other studies find bidirectional causation between deficits and inflation (Aghevli et al 1978, Barnhart et al, 1988, Sarchs et al, 1993 and Hondroyiannis et al, 1997). These argue that there is a self-strengthening process which may well destabilize an economy and lead to a very high inflation. These proponents were actually testing the Olivera-Tanzi effect which argues that the budget deficit does not only lead to inflation but inflation also provides a feedback through lags in tax collection which leads to a reduction of real tax revenue and further leads to an increase in the budget deficit hence self-strengthening phenomenon (Tanzi, 1991).

1.1.2 Theoretical perspective

The theory is related to the study since it indicates an increase in inflation or inflation expectations immediately reduces peoples' wealth

1.1.3 Conceptual Perspective

Inflation, according to Parkin (2000), is an increase in the average price level, not a change in any specific prices. So a common measure of the price level is the consumer price index (CPI). The CPI tells how the average price of all goods and services bought by a typical urban household changes from month to month. The major purpose of the CPI is to measure changes in the cost of living and in the value of money (Grier & Tullock, 1989). If the price of the goods rise, the cost to firms of producing final goods and services rises which makes firms to increase the prices of goods and services purchased by consumers.

Gross domestic product (GDP) is the market value of all final goods and services produced within a country in a given time period (Barro & Sala-I-Martin, 1995). However the independent variable in this study (inflation) was looked at in relation to money supply, exchange rate and tax revenue collected. Whereas the dependent variable (GDP) was looked at in relation to government expenditure, investment expenditure, consumption expenditure and net exports.

1.1.4 Contextual Perspective

Uganda is a developing country therefore a correct signals about the course of actions of the economic agents in short run and long run in developing countries like Uganda. In this context the examination of inflation – growth relationship in developing countries is imperative. Thus the research seeks to examine the short run and long run impact of inflation on GDP in Uganda (UBOS, 2015).

In 2015, Uganda gross domestic product (GDP) was projected to grow at 6.2 percent. Ugandans did not want to celebrate yet, though: Despite this favorable forecast, Uganda still faces three major obstacles that do raise inflation, which in turn may cause depreciation of the shilling as well as rising interest rates (Bank of Uganda, 2015). In fact, in 2015, inflation was projected to grow to 5.4 percent from 4.5 percent. Uganda economy has experienced bad times this year unless these major challenges are tackled head-on.

In fairness, the Bank of Uganda, by raising interest rates, has so far reacted successfully to developments that threaten to raise 2017 inflation above its target of 5 percent. More immediately, the Bank of Uganda has indicated that it will fund any rising government domestic

borrowing requirement by issuing government securities to the market, and not by central bank financing. In this case, there was no monetary financing of fiscal deficits (World Bank, 2016). However, a study by the Economic Policy Research Centre disagrees with this policy, by arguing that domestic borrowing by government crowds out private sector investment. Whereas controlling inflation is important, Bank of Uganda should also exploit modalities of using monetary policy instruments, such as interest rates, to stimulate private investments, exports and private sector competitiveness in 2017.

1.2 Statement of the Problem

and demographic trends combined with short-run issues, comparable to inclemency, speculation, high oil costs, and export bans during a variety of states (Baffer and Hanioti 2010). At a similar time, less is thought concerning however world food costs have an effect on domestic food costs in individual developing countries; notably in geographical region (Minot, 2010).

Previous studies on inflation - economic process relationship have disclosed the complexness of the difficulty.

They show that there may well be no-relationship, negative relationship and positive relationship between inflation and economic process per completely different conditions. Most empirical studies support negative inflation - economic process relationship particularly once inflation is on top of the brink level. except for the low or moderate inflation, there's distinctive disagreement. Some studies show zero-relationship, whereas others shows a statistically positive inflation – economic process relationship. From the side of causative direction, 2 opposite points of read exist. One believes inflation might be causative to growth Fischer (1993). Other argues that growth could cause inflation Gokal and Hanif (2004); Wang Zhiyong (2008).

Furthermore, Faria and Carneiro (2001) believe that inflation - economic process is simply a short-term development. However, Mallik and Chowdhury (2001) proof that inflation absolutely relates to growth within the end of the day.

A few studies within the context of Uganda have already investigated the existence of a relationship between inflation and economic process. However, these studies centered solely on the existence of relationship and threshold impact between these 2 variables and unheeded the channel through that inflation may relate to economic process. because the literature stresses that capital accumulation is that the necessary

channel through that inflation affects economic process, therefore, this study goes to fill that gap by exploring the character of the connection among inflation, capital accumulation, and economic process

1.3 Research Objectives

during this study, important attention is devoted towards analyzing the impact of inflation on economic process. continuing objectives can thrive to realize the following; i) to work out the responsiveness of economic process to changes in inflation. ii) to determine the existence of a long run relationship between economic process and inflation in Uganda.

iii) To explore policy initiatives that can be put in place to promote Economic growth without igniting an inflationary response.

To explore policy initiatives which will be place in situ to market economic process while not igniting associate inflationary response.

1.4 analysis queries so as to accomplish the analysis objectives declared higher than, this study makes an attempt to answer

the following analysis questions: i) What the impact of inflation on economic process in Uganda? ii) what's the responsiveness of economic process to changes in inflation in Uganda? iii) Is there a protracted run relationship between economic process and inflation in Uganda? iv)

What area unit the policy initiatives which will be place in situ to market economic process while not igniting associate inflationary response?

1.5 Hypothesis the subsequent hypothesis are going to be tested; H0: rate of inflation has no vital result on economic process of Uganda. H1: rate of inflation encompasses a vital result on economic process of Uganda.

1.6 Significance of the Study vital importance may be connected to the current study in ascertaining

the result of inflation on economic process in Uganda. this can be with regard to elucidating the responsiveness of economic process to changes in

inflation. in and of itself can position financial authorities and students in a very higher position to know the

inter linkages

that exist between threshold inflation levels and economic process. it's during this regard that applicable economic measures may be undertaken to rectify and alleviate the adverse effects of inflation.

1.7 Scope and Limitation of the Study The enterprise of this study is principally focused on analyzing the results that area unit exhibit by inflation on economic process. this may be power-assisted by the use of secondary information that runs from 1976 to 2016. in and of itself can endeavor to ascertain the responsiveness of Uganda's economic process to changes in inflation.

1.8 Organization of the Study The study

will assume a 5 chapter structure. Chapter one is an overview of the matter and its setting. Literature review is addressed in chapter 2 whereas chapter 3 provides the analysis methodology whereas chapter four appearance at the analysis and presentation of results findings. Chapter 5 concludes this chapter by gazing conclusions, policy recommendations and suggestions for future studies.

CHAPTER TWO

THEORETICAL AND EMPIRICAL LITERATURE REVIEW

2.0 Introduction

This chapter shows what other scholars have been writing about inflation and economic growth in Uganda in (1976-2016). This chapter is presented based on the theoretical review, conceptual framework, and other related studies on the independent and dependent variables plus an assessment for the research gaps

Theoretical Literature Review a pair of.1.1 Classical Growth Theory The Classical Growth Theory forms a base upon that a big range of economic process models square measure primarily based. The formulator of the Classical Growth Theory Adam Smith asserts that economic process will be expressed within the type of a provide facet model. underneath this model, the availability facet model is assumed to be determined by capital, labor and technology and expressed within the type of a production operate and it assumes the subsequent nature;

$$Y = f(K, L, T)$$

Where K is capital, L is labor and T is technology. therefore total output made is set by capital, labor and technology. This model any asserts that output (Y) is primarily influenced by investment (Ik), changes in productivity (α), land growth (Lt) and increment (PL). As a result,

$$Y = f(Ik, Lt, PL, \alpha)$$

This theory implies that growth will exhibit increasing returns to scale as a result of it's self-reinforcing. It conjointly contends that investment determined by quantity of savings within the economy which investment ultimately have an effect on growth levels or patterns (Haslag 1995). the idea any posits that the speed at that the economy grows is driven by financial gain distribution. additionally, it reveals that it's competition for staff among capitalists that causes a decline in profits through will increase in wages and not decreasing marginal rate of productivity. This theory doesn't clearly provides a elaborate description of the character of association between economic process and inflation however outlines that inflation is as a results of increase in taxes and high wage and salaries that hamper profit levels. It so contends that the character of association between economic process and inflation is bilateral.

2.1.2 Neo- Classical The Neo-classical theory is predicated on the concept by Mundell (1963) that outlines that there's a linkage between economic process and inflation. Mundell asserts that changes in inflation or inflationary expectations have an impact on wealth. a rise in inflation is therefore same to scale back wealth through a decrease within the rate of come back. Mundell posit that the requirement to amass a lot of assets causes individuals to save lots of and within the method the costs of assets rise as their demand will increase inflicting interest rates to fall. However, the upper the savings out there the upper the extent of capital accumulation and therefore a high level of growth.

Tobin (1965) created enhancements to the Neo-classical theory to return up with what's called the „Tobin Effect'. This model outlines that buyers hold over current consumption by either finance in capital or holding cash. therefore people square measure assumed to carry cash for either speculative or preventive motives.

The model suggests that as individuals switch from cash they switch to capital that causes a rise in capital stock that causes the steady state to extend still. the rise in output is temporary because the economy is assumed to be in an exceedingly amount of adjustment or rummaging a transition. The changes caused by inflation on capital accumulation and economic process square

measure termed the „lazy dog effect’ were it causes were each capital accumulation and economic process can rise however can fall once the speed of come back on capital starts to say no. Inflation is therefore same to be having associate upward impact on economic process through capital accumulation

However, recent models have exhibited that a bilateral association between inflation and economic process may also exist. to Illustrate, sodbuster (1991) argued that inflation causes the steady state to say no. this is often supported the notion that inflation erodes the buying power of each capital and commodity therefore people can slow down their purchases and as a result the extent of the steady state falls. It may also be noted that inflation negatively impacts the labor returns and cause people to substitute leisure for consumption. The marginal rate of come back of labor falls in line with the rise in inflation and each the extent of the steady state and capital returns can decline.

The classical models will turn out models with totally different theoretical results concerning the association between economic process and inflation. to Illustrate, the “Stockman Effect” contends that associate upswing in inflation causes output to fall. alternative assertions argue that output won't modification whereas the „Tobin Effect’ contends that output can increase. These variations will cause researchers to adopt totally different approaches which can build it troublesome to match or apply study results.

2.1.3 Neo-Keynesian The Neo-Keynesian assumes that there exist associate output level wherever production levels square measure optimum

given the prevailing natural

and institutional constraints. This optimum level of output is comparable to the natural rate of state (

NAIRU) (Haslag 1995). At the NAIRU level, inflation is stable, that is, it neither falls nor rises.

This theory asserts that inflation is determined by the natural rate of employment and also the level of GDP. 3 basis assertions will be deduced from this model and these are;

The first assertion outlines that presumptuous all alternative things stay constant, if GDP levels outweigh the state level at grade wherever the state level trails the NAIRU, inflation can cause suppliers to extend costs that any propels costs upwards (Blanchard and Kiyotaki 1987). inflationary pressure can build and shift towards inflation wherever each state and inflation square measure larger.

The second assertion contends that once state stands higher than the natural rate and GDP stands below its potential level ceteris paribus, suppliers can expand capability inflicting costs and inflation to fall. The Phillips curve shifts to mirror low inflation and state levels (Blanchard and Kiyotaki 1987).

The last assertions is predicated on the concept that inflation won't modification once actual GDP equals is adore expected level and is state adore the natural rate (NAIRU) presumptuous that there aren't any provide shocks. This theory posits that the Phillips can assume a vertical form at the NAIRU.

It will be deduced that the natural level of state and potential output will be determined with preciseness. Moreover, it will be criticized on the bases that inflationary behavior isn't symmetrical and it changes unsymmetrically. this is often as a result of downward changes in costs square measure rigid.

2.1.4 economic theory economic theory is a plan developed by Friedman and centers on long-term provide. Friedman contends that there square measure long-term provide parts that may be wont to relate finances to growth (Gomme, 1993). to Illustrate, {the quantity|the number|the quantity} Theory of cash establishes a linkage between economic process and inflation by leveling the overall amount of cash in circulation to the economy's total disbursal. per Friedman, the equation will be nominal as follows;

$MV = PY$ wherever M = cash stock in circulation V = speed of circulation P = value Y = output
victimization the higher than equation the rate of inflation will be determined as follows; $p = v + m - y$ wherever p = rate of inflation v = speed of circulation m = cash stock y = output rate of growth

From this equation, Friedman postulated that was aggravated by will increase in speed and provide of cash that square measure larger than the prevailing level of economic process. He any argues that the consequences of inflation on economic process obsessed on whether or not inflation is anticipated or not. Anticipated inflation causes customers to regulate their patterns of consumption and lobby for wages will increase specified the rise in inflation may match the rise in wages (Gomme, 1993). once this is often the case a rise in inflation can don't have any impact on either employment or growth and this condition is thought as neutrality of cash. during this case inflation will be same to be harmless. It will so be deduced from the economic theory

approach that money growth affects long-term costs and not growth which inflation happens as a result of finances being more than the extent of economic process.

2.1.5 Endogenous Growth Theory This theory is predicated on the concept that economic process is set by factors that square measure inherent of the assembly operate equivalent to technological modification and economies of scale or returns to scale and not exogenous factors. The endogenous growth model is predicated on the construct of one regression model wherever the variable is economic process and also the freelance variables will either be capital accumulation or inflation (Haslag, 1995). the many distinction endogenous growth model and also the neo-classical model is that within the endogenous growth model capital returns tend to fall because the level of capital accumulation rises and can not fall to below negative values. The model will contemplate the concept of the impact of externalities on capital selections and returns to scale effects on the assembly method.

The endogenous growth model contends that economic process is set by capital returns, wages and salaries however taxes square measure seen as inducement a negative impact on rates of come back on capital investments. High taxes can propel people to substitute work for leisure whereas imposing taxes on capital hinders economic process. Arguments are placed concerning the extent to that inflation affects economic process (Gomme, 1993). The study disclosed that the inverse relationship between inflation and employment induces negative shifts in growth levels. The channels through that inflation affects economic process square measure marginal rate of productivity of labour and capital accumulation that diminish with the rise in inflation. Gomme (1993) any points to the actual fact that efforts to scale back inflation can have minimum impact on economic process. Haslag (1995) but argues that inflationary effects square measure usually witnessed through a decline in deposits that eventually reduces savings, capital accumulation and thence ultimately economic process.

2.1.6 Keynesian This theory is posits that the association between economic process and inflation will be analyzed victimization mixture provide and mixture demand curves. it's supported the concept that the short run mixture provide curve is upward sloping and thence modifications in demand can solely cause a change in costs. therefore shifts within the AS curve can impact changes in each output and costs (Dornbusch et al., 1997). this is applicable within the short run amount as a result of output and inflation square measure determined by plenty of things equivalent to financial and or economic policy, changes aborning force and expectations.

The model assumes that because the economy enters the long-term “steady state”, factors equivalent to financial and or economic policy, changes aborning force and expectations can have a reconciliation impact. The steady state therefore implies that there aren't any changes however changes within the AS and AD curves lead to what's called the “adjustment path”. The model any asserts that there'll be

a positive relationship between inflation and economic process within the “adjustment path” or throughout the “adjustment period”. A negative relationship will therefore be solely witnessed once the “adjustment period” or “adjustment path”.

The positive relationship between inflation and economic process is as a results of time inconsistency. this implies that producers are perceiving that their costs square measure more than those of other turn outrs within the economy and however all costs have gone up inflicting them to still produce a lot of output. The positive relationship between inflation and economic process will be attributed to promote agreements between suppliers and customers to provide product at a later date. therefore modifications in costs of products won't cause a change in output since the provider must provide the united amount of products at the united value (Blanchard and Kiyotaki, 1987).

It may also be determined that in the “adjustment period” the bilateral relationship between inflation and economic process is termed inflation. this is often a scenario that happens once costs rise however inflicting output to either fall or stay identical. The model conjointly recommend that in the “adjustment period” inflation doesn't essentially increase however follows associate “adjustment path” of temporal increase and so it falls.

2.2 Empirical Literature Examining the Link between Inflation and economic process

The existence and nature of the link between inflation and economic process have

extensively been investigated within the economic literature.

The main focus of analysis disbursed has been done on a global level but there's ought to contextualize this analysis so as to derive the most effective policies and techniques.

According to Barro (1995) there's a correlational statistics between economic process and inflation. They research worker conducted a study primarily based of quite a hundred sample information economies for the year 1960 to 1990. so as to research the impact inflation has on economic process variety or regression equations were employed by while a number of the determinants were ceteris paribus. The study disclosed that there was a correlational statistics between growth and inflation. a ten % increase in inflation showed that there was associate adverse relationship of zero.2 to 0.3 % decrease in economic process.

Another study disburshed by Bruno and Easterly (1995) investigated the determinants of economic process of twenty six countries that encountered a high level of rate of inflation throughout bound time frames. supported their study, associate rate of inflation that was over forty % is taken into account as associate inflation crisis. The study finished that, so as to pass though inflation crisis, a discount within the rate of inflation would be useful to associate economy. More so, the study finished that a high rate of inflation doesn't essentially harm the economy.

Sarel (1996) utilized secondary information within the investigation of the existence of nonlinear inflationary consequences on economic process victimization OLS estimation to analyse observations collected from eighty seven countries from the periods 1971-1995. Study findings disclosed that marginally helpful outcomes exist below the structural break which adverse impacts will set in at levels on the far side the structural break.

Fisher (1993) analysed the association between inflation and economic process supported panel information collected from ninety three countries. The study utilized statistical procedure analysis and also the results showed that the negative effects of inflation on economic process square measure within the type of reduced productivity and a decrease in investment levels. Conclusions drawn by Fisher (1993) made public that inflation causes a misallocation of resources because it affects the worth mechanisms.

Khan and Senhadji (2001) examined the consequences of inflation on economic process primarily based developing countries and industrial sectors for a hundred and forty countries. The statistic information from the amount 1960-1998. The study established that there's a threshold underneath that inflation imposes negative effects on economic process. the edge was established to be among the vary of 11-12% for developing countries and 1-3% for developed

countries. The study any showed that industrial countries have lower thresholds than developing economies.

Mubarik (2005) found that the edge tends to vary from one country to the opposite and is influenced by economic activities that embrace the extent of economic development and industrial enterprise. The study by Mubari (2005) was supported a study conducted concerning the impact of inflation on economic process in Pakistan. The study made public that the inflation threshold for Pakistan is September 11 and levels on the far side that square measure related to bilateral association between inflation and economic process.

Malik and Chowdhury (2001) postulated that the consequences of inflation on economic will be positive and this was supported VECM results for Srilanka, Pakistan, Asian nation and People's Republic of Bangladesh. The results any showed that there's a protracted run association between inflation and economic process. it had been conjointly made public that moderate inflation is critical for economic process.

Bruno and Easterly (1995) found that there's no empirical support of the interrelatedness between inflation and economic process. The study but established that economic process tends to say no sharply particularly at levels wherever the rate of inflation surpasses four-hundredth. At levels higher than four-hundredth the link between economic process and inflation is postulated to be negative however temporal which economic process rebounds back to a positive trend at levels below four-hundredth.

Ghosh and Phillips (1998) postulated that at low levels of inflation, makes an attempt to lower the rate of inflation have negative effects on economic process. The results were supported panel information from 1960-1996. 2 non-linearity associations were discovered to exist between inflation and economic process. the primary non-linearity was related to positive relationship between economic process and inflation at 2-3% levels of inflation whereas the second non-linearity asserts that at 10-40% levels of inflation, economic process and inflation square measure bilaterally connected.

Results by Neil (2000) contend that inflation invariably inflicts adverse effects on economic process. This assertion was backed by a study conducted in respect to Republic of South Africa covering the amount 1960-99. The study utilized a volt-ampere analysis procedure and also the results disclosed that single digit inflation has positive effects on economic process as critical whole number inflation.

Faria and Carnerio (2001) investigated

the relationship between inflation and economic process within the context of the

Brazilian economy. A volt-ampere model was utilized to analyse statistic information from the amount 1980-1995. The results established

that there's no existent long-term relationship between inflation and economic process.

It was established that within the long-term productivity and output don't seem to be relating to inflation within the long-term however short run relationships do exist.

Gillman et al. (2002) explored the impacts of inflation on economic process through a discount in capital. The study was supported the analysis of OECD countries from 1961-97.

The study results exhibited

that there's a negative association between inflation and economic process

but the

effects tend to vary with the speed of inflation. therefore at terribly low levels of inflation the magnitude of impact tend s to be terribly low however doubles because the rate of inflation will increase among the vary of 0-10%.

Khan and Qasim (1996) made public that regardless of disaggregates of inflation that square measure being checked out, finances is that the major instrument behind inflation. The study was focused on examining food and non-inflationary effects in Pakistan. Insights drawn advised that the worth of electricity and wheat, and devaluation were major parts behind will increase in inflation in Pakistan.

Boyd et al. (2001) undertook a cross sectional study supported statistic information from 1960-1995. The study examined the impact of inflation on economic process by incorporating variables equivalent to commerce volume, securities market capitalization, bank liabilities and domestic credit to the personal sector. The results of the study disclosed that a property rate of inflation was related to insignificant domestic credit to the personal sector. The study any showed that inflation and money development have a non-linear association. Established results showed that repercussions from the interaction between inflation and economic process square measure restricted to an explicit purpose and have a tendency to decrease because the level of inflation continues to rise. additionally, it will be noted that there's associate association between economic process, inflation and investment. Studies by Barro (1995) disclosed that investment

and economic process square measure unilaterally connected and this means that investment causes a rise in economic process. Insights disclosed by Barro (1999) asserts that yearly will increase inflation by a magnitude of ten can resultantly cause a rise in economic process by zero.2-0.24%.

Hasanov (2010) used annual statistic information from the amount 2001-2009 to look at the consequences on inflation on economic process in Azerbajdzhan. The study incorporated gross fastened capital formation as a further variable and also the results showed sturdy proved that the linkage between economic process and inflation was related to threshold effects. Threshold results any disclosed that the association between economic process and inflation is non-linear and positive effects of inflation on economic process were discovered at levels below thirteen. At levels on the far side thirteen the link between economic process and inflation tends to be considerably positive. therefore will increase within the rate of inflation to levels on the far side thirteen were probable to limit economic process by three. This was strengthened by Umaru and Zubairu (2012) World Health Organization established that

economic growth husbandman causes inflation however inflation doesn't husbandman cause economic process

and at low levels of inflation, will increase inflation have a input response on economic process. This conjointly augments study findings by leader and Chowdhury (2001) World Health Organization powerfully posited that inflation and economic process square measure powerfully unilaterally connected which higher levels of inflation hamper economic progress. Meanwhile, Frimpong and Abayie (2010) made public that the edge revolves around Martinmas in African country. The study examined the link between economic process and inflation from the periods 1960-2008 however the results indicated that the association between inflation and economic process is insignificant. the link is but, considerably positive at low levels of inflation. This study doesn't reveal the character of sensitivity between the 2 variables. Khan and Senhadji (2001) undertook a cross sectional analysis of 124 corporations to look at the edge effects of inflation on economic process. The study was supported threshold models that used statistic information from the periods 1950-2004 and also the results showed that inflation targeting of terrorist organization and a couple of for developing and developed economies were necessary.

Khan et al. (2001) extensively utilized panel information to look at the link between inflation and economic process. The study was supported information that spans from 1960-1999 associated

was supported an examination of 168 countries. Results from the NLLS was undertaken victimization non-instrumental and instrumental variables showed that the link between inflation and economic process is related to

a threshold during which the consequences of inflation on economic process square measure substantial up to an explicit level. The results conjointly disclosed that there square measure bilateral associations between inflation and indicators of monetary depth.

It will be deduced from the higher than analysis that the consequences of inflation square measure effectively transmitted through money establishments. However, the transmission effects square measure invariably non-linear and adverse. it's undoubtable that money development is additionally considerably tangled with economic process. Having inflation poignant money development implies that the power of monetary development to impact positive changes in growth is additionally undermined. Such effects square measure discovered in respect to capital accumulation, technological innovation because the role of monetary intermediaries is undermined. therefore the consequences of inflation is so viewed as negatively impacting capital accumulation, innovation and money intermediary roles.

Empirical support of the link between inflation and economic process is inconclusive and most of those studies haven't established a standard accord concerning the impact of inflation on economic process. Such studies have differed in terms of the inflation threshold, non-linearity of the link between inflation and economic process. It will be established still that transmission mechanisms of the impacts of inflation on economic process although comparatively joined to money establishments and capital accumulation, tend to vary. this means that there's ought to conduct studies that address these 2 aspects either one by one or combined. Meanwhile, queries will be raised concerning the fascinating level of inflation. although most studies have highlighted that at low levels of inflation economic process tends to extend in comparatively lower proportions. therefore higher rates of inflation square measure viewed as obstacles to economic performance and thence the requirement to curb them. Conditions have but not been established, that's underneath that conditions do lower levels of inflation absolutely have an effect on economic process.

2.2.1 Recent Inflation Developments in Uganda

Inflation continued to moderate further, with annual core and headline inflation falling to 1.7 and 2.1 per cent, respectively, in February 2018, from 2.6 and 3.0 per cent in January 2018, and from

5.7 and 6.7 per cent, respectively, in February 2017. Overall decline in inflation is mainly driven by significant moderation of food crop prices. Annual food crop inflation fell to (*minus*) 0.7 per cent in February 2018, from 1.4 per cent in January 2018 and from 18.8 per cent a year ago. Annual services inflation also eased to 1.8 per cent in February 2018, from 3.0 per cent in January 2018 while annual Energy, Fuel and Utilities (EFU) inflation increased to 11.2 per cent from 9.8 per cent over the same period. The increase in EFU inflation in February 2018 was mainly driven by the price increase in liquid fuels in addition to increases in prices of solid fuels (charcoal and firewood). Annual non-food inflation decreased to 2.6 per cent in February 2018 from 3.1 per cent in January 2018, while other goods inflation continued to decline to 1.6 per cent from 2.3 per cent, respectively, over the same period. Developments in domestic inflation are shown in **Table 2.1**.

Table 2.1: Developments in Domestic Inflation

	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18
	Annual Per cent change							
Headline	5.7	5.2	5.3	4.8	4.0	3.3	3.0	2.1
Core	4.5	4.1	4.2	3.5	3.3	3.0	2.6	1.7
<i>Food crops And Related Items</i>	12.9	11.7	9.6	7.9	2.3	-0.7	1.4	-0.7
<i>Other Goods</i>	4.9	4.7	4.3	4.3	3.7	3.3	2.3	1.6
<i>Services</i>	4.0	3.3	4.1	2.3	2.8	2.6	3.0	1.8
<i>Energy Fuel And Utilities</i>	7.8	7.8	10.6	14.1	13.7	12.5	9.8	11.2
	Quarterly moving average							
Headline	6.4	5.8	5.4	5.1	4.7	4.0	3.4	2.8
Core	4.9	4.5	4.3	3.9	3.7	3.3	3.0	2.4
<i>Food crops And Related Items</i>	18.0	14.2	11.4	9.7	6.6	3.1	1.0	0.0
<i>Other Goods</i>	5.4	5.1	4.6	4.4	4.1	3.8	3.1	2.4
<i>Services</i>	4.1	3.8	3.8	3.2	3.1	2.6	2.8	2.5
<i>Energy Fuel And Utilities</i>	6.9	7.1	8.8	10.8	12.8	13.4	12.0	11.2

Source: Uganda Bureau of Statistics (UBOS)

2.2.2 Inflation Outlook

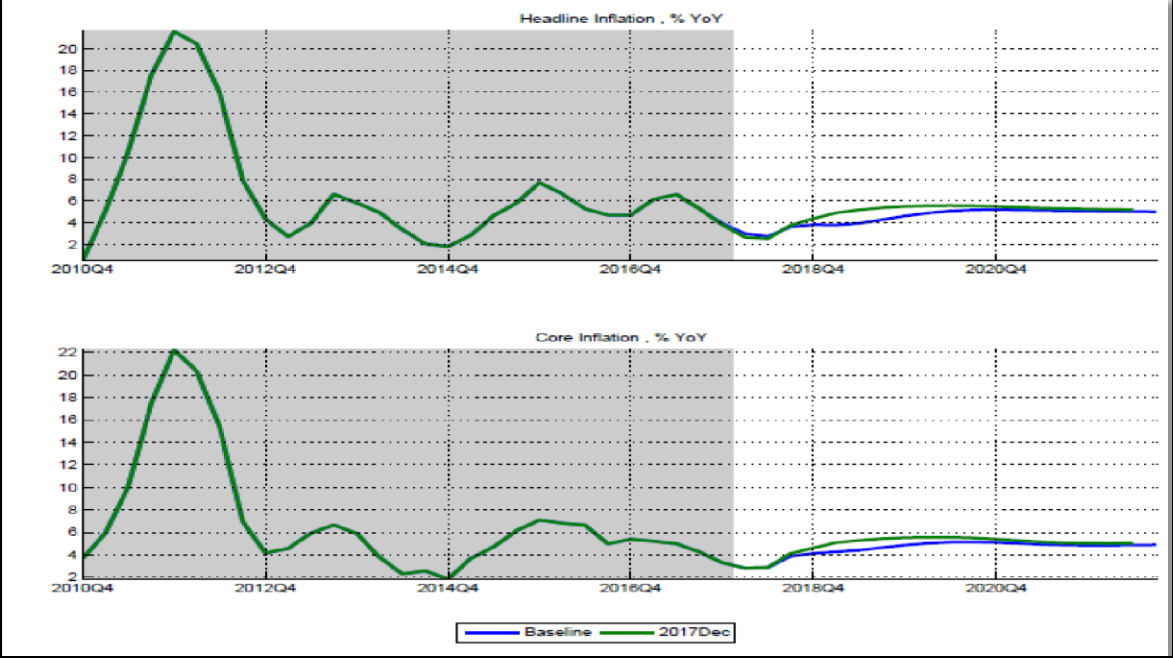
The outlook for the external economic environment remains for stronger broad-based growth, projected to pick up both in 2018 and 2019, supported mainly by anticipated strong growth in AEs, where economic activity is now expected to expand at an annual rate exceeding 2 per cent over the two-year period. In addition, growth in EMDEs is also projected to firm further,

supported by strong growth in China and India and steady recovery in Brazil, Russia and Nigeria. In SSA, the destination to over half of Uganda's exports, growth is expected to increase although it is yet to match up to previous trends. Risks to the outlook, while balanced in the near term, remain tilted to the downside, in the medium term, stemming mainly from more rapid and sizeable tightening of the currently easy global financial conditions, persistently low inflation and a likely shift to protectionist policies.

In the short term, global inflation expectations are generally stable although on an upward trajectory following the start of the recovery in commodity prices, particularly those of Oil. Global inflation is projected to rise in 2018 and 2019, largely supported by sustained recovery in global oil prices, with headline inflation in AEs rising slightly above 2.0 per cent and to about 4.5 per cent in EMDEs. A stable global inflation environment supports low domestic inflation.

The inflation outlook remains unchanged in the near term, and is projected to improve in the medium term. The outlook is shaped by a number of factors which include international crude oil prices which have firmed up since June 2017, global financial market conditions which affect the exchange rate and domestic weather conditions. Consequently, both headline and core inflation are forecast to converge to the 5.0 per cent target in the medium term. These inflation forecasts are depicted in **Figure 2.1**.

Figure 2.1 Inflation forecast



Source: Bank of Uganda

There are risks to the inflation outlook, which are however relatively balanced. On the upside, the expansionary fiscal policy in FY 2017/18 is likely to push up headline inflation in FY 2018/19. , The pickup in global economic activity may also continue to spur upward commodity price movements which may contribute to higher domestic inflation, and normalization or tightening of AEs monetary policies may tighten global financial market conditions resulting in net FDI outflows and domestic exchange rate depreciation. These factors would drive up domestic inflation; however, their full impact could be mitigated by the currently low capacity utilization and lower-than-expected increase in commodity prices curtailed by possible interruptions on the supply side.

According to fig 2.1 the effects of inflation on financial intermediaries is a direct effect but the effect on economic growth is posed in two ways which are efficiency of investment and capital accumulation. These are the elements that pose a direct impact on economic growth.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter deals with estimation procedures that will be undertaken to ascertain the association that exists between Economic growth and inflation. As such, will encompass stationarity tests, co-integration, granger causality and diagnostic tests.

3.1 Model Specification

Due to the formidable increases in initiatives to promote Economic growth by the Ugandan government, policies and schemes targeted at promoting both foreign investment and domestic production have been taking toll in the Ugandan economy. Meanwhile patterns in imports of producer goods and gross savings have dramatically changed as well. This study therefore incorporates these elements to ascertain their impact on the association between Economic growth and inflation. This is because these variables have shown significant variations in the Ugandan economy. Hence, excluding them from analysis will not project the real impact and transmission channels on Economic growth. Thus in this study the following model will be used and will be based on time series data from the periods 1976 to 2016;

$$\text{GDP} = \beta_0 + \beta_1\text{GS} + \beta_2\text{IMP} + \beta_3\text{INFL} + \mu \quad (3.2)$$

Where, GDP = Gross domestic product

GS = Gross savings IMP = Imports μ = error term

The study will also attempt to ascertain the responsiveness of Economic growth to a change in both the independent variables. Such responsiveness is termed elasticity and this is essential in determining the responsiveness of Economic growth to a change in inflation. Converting the data to logs also helps to deal with the problem of heteroscedasticity. There the model can be remodeled as follows'

$$LGDP = \beta_0 + \beta_1LGS + \beta_2LMP + \beta_3LINFL + \mu \quad (3.3)$$

3.2 Stationarity Tests

Gudjarat (1997) outlined that stationarity is a condition that exists when the data's covariance, variance and mean have do not have a unit root. This implies that the variables' mean and variance are time invariant biased. Implications of stationarity can be noted in spurious results will can contain a high R square and the coefficients are associated with high t-statistics as well. Unlike regression, co-integration requires that there be a unit root in the model variables but becomes stationary when integrated at first difference, I (1). Thus to ascertain the presence of unit root in the model data variables, Augmented Dickey Fuller (ADF) and Phillips Perron (PP) tests will be employed.

The utilization of a combination of ADF and PP tests stems from the notion that the PP has a capacity to detect and deal with autocorrelation whereas the use of the PP is flexible to changes in lags. The above figure can be used to econometrically give a detailed description of the ADF is given in express 1, 2 and 3 as follows;

$$\Delta X_t = \beta_1 + \beta_2 + \delta X_{t-1} + \sum \alpha_i \Delta X_{t-i} + \epsilon_t \quad (3.4)$$

In which, i is the current period, j is the previous period and ϵ_t is a white noise error term. Thus changes in the variable at lag 1 and 2 are determined as follows;

$$\Delta X_{t-1} = (X_{t-1} - X_{t-2}) \quad (3.5)$$

$$\Delta X_{t-2} = (X_{t-2} - X_{t-3}) \quad (3.6)$$

3.3 Co-integration

The notion behind the use of co-integration test is to determine if a long run relationship exists between the variables. Co-integration tests are undertaken using the Johansen Co-integration test which has a capacity to accommodate all possible co-integration vectors (Johannsen and Julius, 1990). According to Johannsen and Julius (1990), co-integration is based on the Vector Auto Regressive model can be illustrated using the following model expression;

$$X_t = C + \Pi_1 X_{t-1} + \dots + \Pi_K X_{t-K} + \varepsilon_t \quad (3.7)$$

Where: C = intercept vector
 X_t, X_{t-1} and X_{t-K} = current and lagged vectors $I(1)$
 Π_1 , and Π_K = $(n \times n)$ coefficient matrices
 ε_t = vector of random errors

3.4 Granger Causality

Granger causality seeks to determine if one variable causes a change in the other variable and the direction of causality between the two variables. Assuming that we have two variables X_t and Y_t , then granger causality can be employed to determine the causal relationship between the variables and their direction of causality. Specifically, a regression model of the nature which is shown below can be utilised to explain granger causality (Granger, 1988):

$$y_t = a_0 + a_1 y_{t-1} + a_2 y_{t-2} + \dots + a_m y_{t-m} + \text{ERROR}_t. \quad (3.8)$$

When lagged values of x are incorporated the expression can be expressed as follows:

$$y_t = a_0 + a_1 y_{t-1} + a_2 y_{t-2} + \dots + a_m y_{t-m} + b_p x_{t-p} + \dots + b_q x_{t-q} + \text{ERROR}_t. \quad (3.9)$$

It is pre-required that the lagged values of X are regressed in model must be enhance the explanatory power of the model and their t-statistics must be significant. The null hypothesis that x does not Granger-cause y is rejected when lagged values of x remain in the model.

Granger causality test will be utilized to research if there is causality Economic growth and inflation. Bidirectional causality from Economic growth to expansion is said to exist when the slacked GDP are factually not the same as zero and the arrangement of evaluated coefficients on the slacked Inflation is not measurably not quite the same as zero.

Then again, a unidirectional causality from monetary development to inflation happens if the arrangement of slacked financial development coefficients are not measurably not quite the same as zero and the arrangement of slacked expansion coefficients are factually unique in relation to zero. Two-sided Causality exists when both relapses of monetary development and expansion coefficients are factually essentially not the same as zero (Engle and Granger, 1987).

3.5 Stability Diagnostics

Stability tests are tests that are undertaken to determine if the utilised model is stable, that is, if it satisfactorily satisfies the OLS assumption. This requires that both the model and the residuals be subjected to recursive estimate tests. The recursive test requires that both the model and the residuals values lie within a stipulated band. If not so, then a structural break is said to exist and the model is not stable. A stable model cannot be used for policy decision making.

3.6 Definition and Selection of Variables

3.6.1 Gross Domestic Product (GDP)

The dependent variable used in the regression is denoted by GDP which measures the Economic growth of an economy. In this study, market prices GDP in US\$ were used to estimate the model using data collected from BOU and WDI from the period 1976 to 2016.

3.6.2 Inflation Rate (INFL)

Inflation rate represented by the annual percentage growth rate of consumer price index (CPI), inflation is defined as a sustainable increase in the general level of price for goods and services. The effects of inflation on Economic growth are strongly asserted to be negative and ravaging by Kasidi and Mwakanemela (2013). This study seeks to determine if such results hold in Uganda.

3.6.3 Imports (IMP)

Imports refer to goods and services that are purchased from other countries. Annual percentage changes in imports were used to estimate the model and spanned from the period 1976-2016 using data obtained from BOU and WDI. Kim et al. (2007) employed a VECM model to analyze the effect of imports on Economic growth in South Korea. Results from the study should strong evidence of positive contributions from exports towards Economic growth. A positive association is therefore expected between imports and Economic growth.

3.6.4 Gross Savings (GS)

Significant decline in gross savings was observed in 1998 when they submerged negatively below the 40% mark. Improvements are gross savings commenced in the early period of 2002 but such improvements have not maintained a constant favorable trend.

A summary of data source sources used in this study and the respective variable with their expected association with Economic growth is shown in table 3.1. Gross savings were observed to be catapulting Economic growth and hence a positive association between Economic growth and savings is anticipated

Table 3.1: Data Source and Expected Results

Variable	Data source	Period	Expected relationship
GDP	WDI and BOU	1976-2016
GFS	WDI and BOU	1976-2016	(+)
INFL	WDI and BOU	1976-2016	(-)
IMP	WDI and BOU	1976-2016	(+)

CHAPTER FOUR

ANALYSIS AND INTERPRETATION OF RESULTS

4.0 Overview

This chapter provides an experiential evidence of the exploited data analysis and diagnostic tests provided in chapter four. Such techniques include ADF and PP stationarity tests, co-integration test, impulse response functions and variance decomposition. The main shove behind this chapter is to offer mathematical support that can used to offer concrete support about the impact of inflation on Economic growth in Uganda. Such a solid base of empirical results is essential in proffering sound policy references. The obtained empirical results are herein discussed.

4.1 Stationarity Tests

Stationarity tests were performed to control if the data has a unit root. The presence of a unit root signifies that the data is not stationary and this suggests that the variance, covariance and mean are not stationary and thus results in bogus results especially in time series data. The ADF and PP were operated to determine if the data has a unit root based on the null hypothesis that the data has a unit root. The results are obtainable in table 4.1

Table 4.1: ADF Stationarity Tests Results

Augmented Dickey Fuller Test @ Level						
Variables	Interrupt no Trend			Intercept and Trend		
	Test	Critical	Prob*	Test		Prob*
	Statistic	Value		Statistic	Critical value	
		1%			1%	
<i>GDP</i>	2.77326	-3.5885	1	0.06851	-4.1809	0.996
<i>GS</i>	-2.0548	-3.588	0.2634	-2.4316	-4.1809	0.3591
<i>IMP</i>	0.07247	-3.5885	0.959	-1.219	-4.189	0.894
<i>LINFL</i>	-2.9205	-3.6268	0.0528	-2.9592	-4.235	0.1572
Augmented Dickey Fuller Test @ 1st Difference						
Variable	Intercept no Trend			Intercept and Trend		
	Test	Critical	Prob*	Test	Critical	Prob*

	Statistic	Value 1%		Statistic	Value 1%	
<i>GDP</i>	-5.6918	-3.5925	0.0000*	-6.8813	-4.1865	0.0000*
<i>GS</i>	-7.5522	-3.5925	0.0000*	-7.6012	-4.1865	0.0000*
<i>IMP</i>	-3.5925	-5.5509	0.0000*	-5.4995	-4.1865	0.0003*
<i>LINFL</i>	-5.7681	-3.6156	0.0000*	-5.6658	-4.2191	0.0002*
*	<i>Rejection of null hypothesis of unit root at 1% level of significance.</i>					

ADF tests results designate that the data has a unit root and hence it can be said to be non-stationary. However, stationarity is observed when the data is first differenced, that is, I(1). Comparable inferences can be made for the PP test but exclusions are observed with the variable inflation (LINFL) which is stationary at level and hence ADF test results are more preferable in this case.

Table 4.2: PP Stationarity Tests Results

PP Test @ Level						
Variables	Intercept no Trend			Intercept and Trend		
	Test	Critical Value 1%	Prob*	Test	Critical value 1%	Prob*
	Statistic			Statistic		
<i>GDP</i>	3.63726	-3.5885	1	0.17185	-4.1809	0.9971
<i>GS</i>	-3.5885	-2.0548	0.2634	-4.1809	-2.4575	0.3466
<i>IMP</i>	-0.015	-3.5885	0.952	-1.4716	-4.1809	0.8244
<i>LINFL</i>	-3.8579	-3.5885	0.0048	-4.2037	-4.1809	0.0094
PP Test @ 1st Difference						
Variable	Intercept no Trend			Intercept and Trend		

	Test	Critical	Prob*	Test	Critical	Prob*
	Statistic	Value		Statistic	Value	
<i>GDP</i>	-5.8263	-3.5925	0.0000*	-6.8813	-4.1865	0.0000*
<i>GS</i>	-7.8919	-3.5925	0.0000*	-8.2038	-4.1865	0.0000*
<i>IMP</i>	-5.5534	-3.5925	0.0000*	-5.5014	-4.1865	0.0003*
<i>LINFL</i>	-11.245	-3.5925	0.0000*	-10.3	-4.1865	0.0000*
*	<i>Rejection of null hypothesis of unit root at 1% level of significance.</i>					

4.3 Co-integration Test

Co-integration was conducted using the Johansen Co-integration test so as to regulate if a long run relationship exists between inflation and Economic growth. Therefore the following hypothesis was subjected to testing;

H₀: There is no long run relationship between inflation and Economic growth.

H₁: There is a long run relationship between inflation and Economic growth.

Table 4.3: Johansen Co-integration Test

Unrestricted Co-integration Rank Test(Trace test)			
Hypothesized	Trace	Sig. level: 0.05	
No of CE(s)	Statistics	Critical Value	Prob.**
None	47.5445	47.8561	0.0535
At most 1	21.2682	29.7971	0.3411
At most 2	5.45599	15.4947	0.7586
At most 3	0.85122	3.84147	0.3562

<i>Trace test indicate no co-integration at the 0.05 level</i>			
Unrestricted Co-integration Rank Test(Maximum Eigenvalue)			
Hypothesized	Max-Eigen	Sig. level:	
No of CE(s)	Statistics	Critical Value	Prob**
None	26.2763	27.5843	0.0728
At most 1	15.8122	21.1316	0.236
At most 2	4.60477	14.2646	0.7906
At most 3	0.85122	3.84147	0.3562
Max-eigenvalue indicates no co-integration at the 0.05 level			

Table 4.3 results display that both trace and (Maximum Eigenvalue) tests show strong evidence of the absence of co-integration. Hence we reject hypothesis that there is a long run relationship between inflation and Economic growth. Instead, the null hypothesis of no run lung relationship between inflation and Economic growth is accepted at 5%. The standardized equation results are presented as follows;

$$\mathbf{LGDP} = -1.007399\mathbf{LGS} - 4.487764\mathbf{LIMP} - 0.897013\mathbf{LINFL}$$

It can be distinguished that a unit increase in gross savings results in a decrease in GDP by 1.01 units. This reverses the results recognized in literature review which showed that there is a positive association between GDP and gross savings. Possible reasons suggest that savings are not being put to prolific uses or are being spent near consumption purposes at the expense of production. Imports can be observed to be negatively related with GDP by 4.488 which implies that a unit increase in imports results in a decrease in GDP by 4.488. This is in support of literature fallouts which have also shown that there is a negative linkage that exists between GDP and imports. Imports in this case can be said to drain monetary resources that can be used to finance domestic production and the alignment of those imports is not contributing suggestively to domestic production. A unit increase in inflation can be observed to cause a decrease in GDP by 0.897 and this contradicts study results established by Kasidi and Mwanemela (2013). This

suggest that the long run properties of inflation on Economic growth are negative. Thus inflation can be said to be a big obstacle to Economic growth.

4.4 Responsiveness of GDP to the Variables

The data was transformed to logarithms so as to outline the reaction of Economic growth to changes inflation. Such responsiveness is synonymously known as elasticity. Logs are also important in industry with heteroscedasticity in time series data thus making the data stationary. An ordinary least squares method was employed to determine the responsiveness of GDP to a change in the independent variables. An R^2 of 0.9428 signifies that 94.28% variation in GDP is explained by imports, gross savings and inflation. The results are presented in table 4.4 and 4.5.

Table 4.4 Model Data Summary Results

R ²	0.9428
F-statistic	0

Table 4.5 Receptiveness of GDP to the Variables

Variable	Coefficient	Std. Error	T-statistic	Prob
LGS	0.90371	0.305004	2.958558	0.0051*
LIMP	2.556407	0.137689	18.56659	0.000*
LINF	-0.0625	0.057104	-1.0999	0.2779
C	2.7177	1.097452	2.476159	0.0175

** Significant at 1% level of significance*

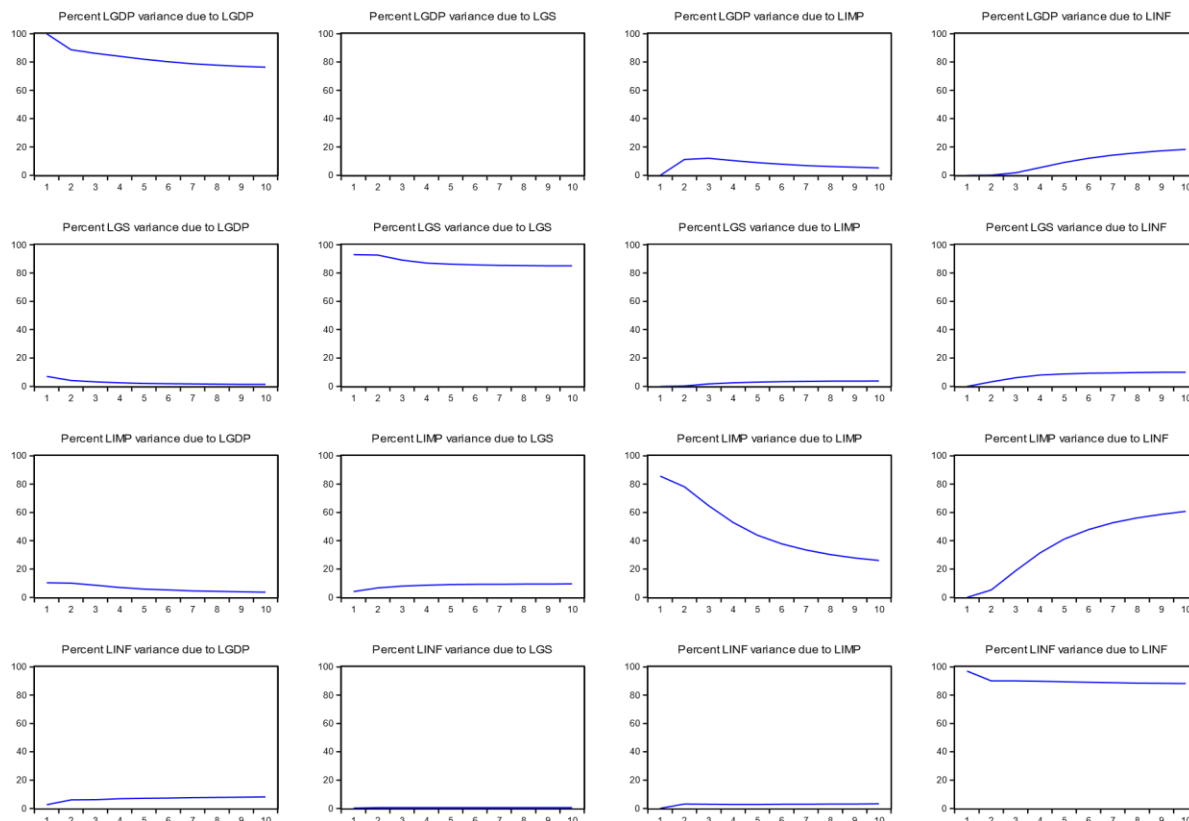
The elasticity coefficient of GDP to gross savings is inelastic (0.902) as it lies below 1. Though, the elasticity coefficient of GDP to inflation is elastic since -0.0628. LGS and LIMP are significant at 1% as different to LINFL which is not. This distinction results established by Kasidi and Mwakanemela (2013) which displayed that the elasticity coefficient is inelastic. Conclusions drawn by Kasidi and Mwakanemela (2013) revealed that inflation is an important basis of Economic growth in Tanzania. Consequently it can be concluded that inflation is a

relatively unimportant factor in the Ugandan economy. This can be maintained by the absence of no co-integrating equations in the long run.

4.5 Variance Decomposition

Variance decomposition shows the extent to which variations in variables is due to their associated innovations. From the above it can be noted that significant variations in GDP are due to variations in GDP itself and variations in imports and inflation. Innovations to GDP caused by imports commenced in the first year of the period under study while those caused by inflation commenced in the first half of year 2. The other variation is due to innovations in the other variables themselves. Significant variation in imports is positively related to changes in savings and inflation but variations caused by savings are less than those caused by inflation. Variations in inflation is slightly and positively attributed to inflation and insignificantly attributed to savings.

Figure 4.1 Variance Decomposition

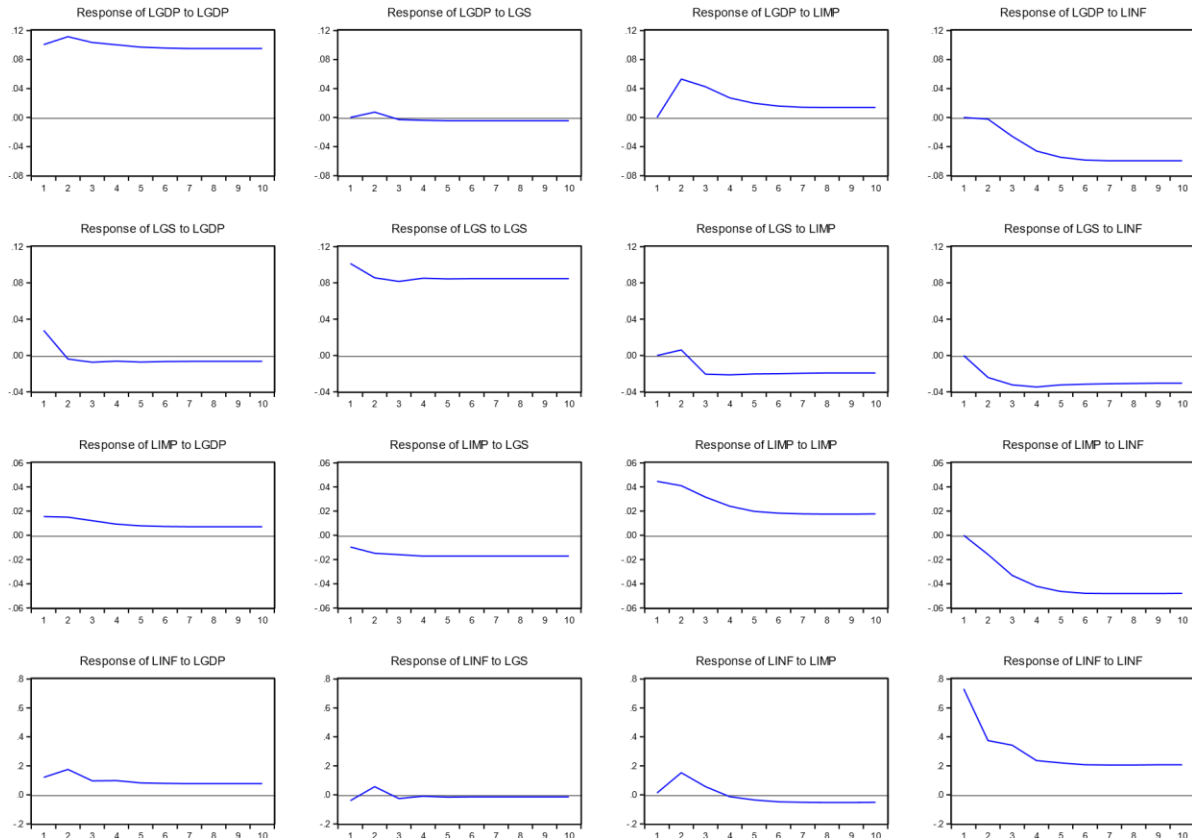


Variance Decomposition

4.6 Impulse Response Function

Impulse response functions are used to determine how endogenous variables react to each other. Impulse response functions were developed under VECM environment to determine how gross saving, imports and inflation react to each other. It can be noted that Economic growth is positively more responsive to changes in imports and negatively responsive to changes in inflation. This reinforces the notion that inflation negatively affects Economic growth. Possible reasons attributed to an increase in Economic growth following an increase in imports can suggest that the nature imports comprises of productive goods which are significantly contributing to Economic growth. Gross savings can be observed to be negatively responding to changes in imports and inflation. This entails that much of the savings are being spent towards imports and inflation is eroding the value of savings and hence people opt to not to save. It can further be observed that inflation is relatively to a large extent not responsive to changes in Economic growth. Thus in this respect Economic growth can be said not to cause inflation.

Figure 4.2 Impulse Response Functions



Response to Cholesky One S.D. Innovations

4.7: Granger Causality Table 4.6 Granger Causality

Null Hypothesis	Obs	F-statistics	Prob
LGS does not Granger Cause LGDP	43	1.03476	0.3651
LGDP does not Granger Cause LGS		2.09753	0.1367
LIMP does not Granger Cause LGDP		7.18211	0.0023
LDGP does not Granger Cause LIMP		3.64179	0.0357
LINFL does not Granger Cause LGDP	43	0.52989	0.593
LGDP does not Granger Cause LINFL		3.34476	0.0459
LIMP does not Granger Cause LGS		0.10106	0.9041
LGS does not Granger Cause LIMP		0.13419	0.8748

LINFL does not Granger Cause LGS	43	2.34728	0.1093
LGS does not Granger Cause LINFL		0.48249	0.621
LINFL does not Granger Cause LIMP		3.55249	0.0385
LIMP does not Granger Cause LINFL		3.77609	0.0319

It can be noted that gross savings do not granger cause Economic growth and that Economic growth do not granger cause gross savings. This is because their respective p-values are more than 5% and hence we can accept their null hypotheses. A contrasting analysis can be made for imports and Economic growth. Since their p-values are less than 5% we can reject their null hypotheses. Thus it can be concluded that imports do granger cause Economic growth and that Economic growth granger causes imports. Economic growth can be said not to granger cause inflation but inflation granger causes Economic growth. Thus there is a unidirectional relationship running from GDP to inflation. Bidirectional relationships can be said to exist between imports and gross savings; and inflation and gross savings while inflation and imports can be said to granger cause each other. The relationship between inflation and imports is thus bidirectional.

CHAPTER 5 outline, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction This chapter outlines policy implications which will be drawn from this study. As such, can proffer ideas which will be used to reinforce economic process and lower the negative consequences that are displayed by will increase within the rate of inflation. Such recommendations are going to be with regards to economic process, inflation, imports and gross

savings parts. This chapter will hesitate conclusions which will be drawn from this study and planned future areas of study.

5.1 outline of Major Findings The study used the Johansen co-integration technique to establish the presence of

a long run relationship between economic process and inflation. The results of the study discovered that economic process

is negatively connected with inflation. The OLS was conjointly used to work out the responsiveness of economic process to changes inflation, savings and imports. it had been discovered that within the short run economic process had associate elastic responsive efficiency to changes in gross savings, associated an insignificantly positive and inflexible responsive capability to changes in inflation. This implicit that low levels of inflation were necessary for economic process. Results from variance decomposition exhibited that major variations in value within the end of the day were attributed to changes in inflation and imports levels. Meanwhile, impulse response functions discovered that the end of the day economic process had high negative impulse responses to changes in inflation. Conclusions can thus be drawn on these results.

5.2 Conclusions victimisation the obtained results from this study, it will thus be ended that within the short run there's a strength at that the low levels of inflation rates have a simulative capability on economic process that is comparatively inflexible. Such a positive impact is being driven by sound and strategic capital merchandise import promotion and foreign direct investment policies that ar being instituted by the Ugandan government. Low value will increase ar thus setting in with associate inflated flow in imports of capital merchandise however the resultant increase in economic process is bigger than the will increase in value levels.

Thus it are often ended that there's a brief run threshold rate of inflation on the far side which can impose important negative effects on economic process. this implies that low levels of inflation ar necessary for economic process however the rise in economic process is comparatively inflexible. important decline in economic process are going to be discovered once the rate of inflation surpasses the edge rate.

It may also be ended that within the short run will increase in imports ar dynamic Uganda's economic process however the extent to that they resultantly cause will increase in economic

process is set by the composition of imports. this means that imports are often a negative driver of economic process if they're vastly dominated by trade goods.

Further conclusions are often drawn that gross savings have a positive impact on economic process within the in brief run. this can be as a result of Uganda's economic system is very varied associated thence features a larger capability to mobilize savings that ar being employed as an engine of economic process. it's during this regard that gross savings ar being fruitfully and effectively utilized in Uganda in areas that promote economic process.

In addition, it may also be ended that inflation and imports ar major forces behind the changes in Uganda's economic process. thence implications are often drawn that the flexibility of the Ugandan economy to grow depends on the flexibility to deal with import and inflation connected problems.

An increase in imports has negative implications on gross savings in Uganda and this being attributed to the notion that import incentives and schemes ar being granted for the importation of strategic product. so it are often aforesaid that import opportunities ar being considered remunerative and thence folks in Uganda ar disbursal resources to imports.

In overall, it are often ended that low levels of inflation have positive effects on economic process which unsustainable rates of inflation tend to limit economic process. it's during this regard that recommendations are going to be proffered.

5.3 Recommendations Results obtained have shown robust proof that low levels of inflation tend to negatively have an effect on economic process within the short run. this can be implies that resultant amendment in value output ar being outstripped by positive changes in costs. thus recommendations are often created that financial authorities ought to place measures which will promote positive changes in value. However, financial and monetary policies are often used to contain inflation inside the specified limits. this will be as well as subsidies to lower prices of production. In relevance this notion, one by one on firm level ar advocated to undertake measures that may end in increase in productivity. Such measures could embody investment in economical technology or higher strategies of production.

The increase in imports are often seen to be inflationary and so measures should be enforced to combat the soaring import levels. This may well be done therefore on discourage imports in favor of domestically created product. Such measures could embody availing incentives and different schemes to domestic producers so they continue to be competitive and manufacturing

quality product at reasonable costs and prices. Moreover, measures and schemes are often wont to promote imports of productive merchandise or merchandise that ar strategic to the functioning of the economy.

From the positive short run relationship between gross savings and gross domestic product policy implications should thus be designed in an exceedingly manner that promote people to save lots of a lot of. per se will cover increasing interest rates on deposits and lowering deposit fees. a rise in interest rates on savings deposit is thus a way to continually lure customers to save lots of a lot of. this could be as well as reduction in deposit fee.

Measures also are counseled that steps be undertaken to market economic process by making employment, investment in capital accumulation and technological advancement. Moreover, economic process initiatives are often increased through strategic imports promotion of capital merchandise that ar crucial to economic process. Such imports of capital merchandise are often incentivized or will involve import schemes being given to strategically necessary industries.

5.4 Suggestions for Future analysis This study has offered important insights concerning the impact of inflation on economic process with regards to

Uganda. However, it had been discovered throughout the course of the study that trade was moving absolutely with economic process however the out there knowledge was incomplete and hardly accessible to modify examination of the impact of trade on economic process. thence different studies will but incorporate trade as associate informative variable which will be wont to aid explaining the impact of inflation on economic process.

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