International Journal of Management and Fuzzy Systems
2020; 6(4): 59-63
http://www.sciencepublishinggroup.com/j/ijmfs
doi: 10.11648/j.ijmfs.20200604.11
ISSN: 2575-4939 (Print); ISSN: 2575-4947 (Online)

SciencePG
Science Publishing Group

Review Article

Determinants of Inflation in Africa: A Systematic Review

Wondimu Ereda Melaku

Department of Economics, Mekdela Amba University, Mekane Selam, Ethiopia

Email address:
wondimuereda@yahoo.com

To cite this article:
Wondimu Ereda Melaku. Determinants of Inflation in Africa: A Systematic Review. *International Journal of Management and Fuzzy Systems*. Vol. 6, No. 4, 2020, pp. 59-63. doi: 10.11648/j.ijmfs.20200604.11

Received: September 4, 2020; **Accepted**: September 25, 2020; **Published**: December 31, 2020

Abstract: Inflation refers to increase in general level of price of a basket of goods and services that is representative of an economy over a period of time. When there is a general rise in price level the entire economy will be affected. Rising price known as inflation impact the cost of living, the cost of doing business, borrowing money and every other facet of the economy. Several factors are responsible for rise in price level in a given country/nation. The main aim of this study is to assess the determinants of inflation in Africa based on empirical studies conducted in the past and give insights for other researchers. For this purpose, concentrated and careful literature review was done on 13 papers conducted in 13 African countries. Seven variables were considered for analysis such as broad money supply, GDP, price of imported goods and services, exchange rate, interest rate, price expectation and population growth. The result shows that output/national income, broad money supply, price of imported goods and services and exchange rate are the critical variables affecting the performance of inflation. The others variables: interest rate, price expectation and population growth are also slightly important in explaining inflation. In the literature selected for review it is observed that almost all are used macro variables without considering other factors such as political, social institutional and others. The study finally recommends that countries should seriously work in creating moderate inflation to grow their economy by increasing their national income in addition to stable fiscal and monetary policy and also focusing on the aforementioned factors is crucial. I declare that this is my own work and it is original.

Keywords: Inflation, Determinant, Long Run

1. Introduction

Inflation lowers the purchasing power of the people as they need more money to purchase one unit of good or service. Hence, people spend huge amount of money for consumption. Saving and investment decline as result: resulting in higher unemployment and lower economic growth.

However, to overcome the hindrance of inflation in economy, most of central banks in developed and developing countries have the core objective to keep inflation at minimum rate for achieving and maintaining high economic growth [13].

For most of African countries it is challenging for monetary authorities to control inflation even if there is a political will, due to weak institutional frameworks, thin financial markets and imperfect competition among banks [11].

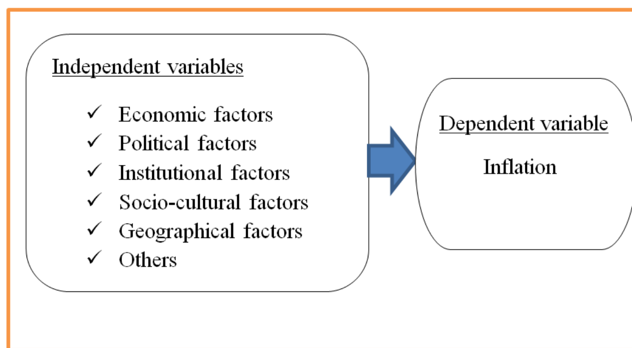
High and volatile inflation can be damaging not only to businesses and consumers, but to the economy as a whole. The social and economic consequences of inflation are diverse and difficult to measure accurately. Inflation causes instability and inefficiency in the economy as it has the potential of slowing down economic growth in the long run. While the country is faced with other macroeconomic problems such as high unemployment and inequality, it is indicated that a high and volatile inflation rate increases uncertainty about future relative prices and also reduces the competitiveness of a country's exports [10].

African countries, like Ethiopia double digit inflation has become worrisome for policy makers as well as the society. The optimal level of inflation in Ethiopia around which inflation affect economic growth optimally. The study has applied threshold approach. By doing so on the data from 1971-2010 inflation level of about 8%-10% is optimal for Ethiopia. Any inflation level, greater or less than the estimated threshold level, may not allow long-term and sustainable economic growth. Inflation rate between the years 2017-2019

in Ethiopia was not below 10 per cent and reaches maximum rate of 20.8 percent in November 2019 [15].

Understanding the status and determinants of inflation is essential for successful and effective implementation of sustainable development goals (SDGs). So far, various studies were conducted to identify the determinants of inflation. In view of that, the primary aim of this systematic review is to investigate the main factors affecting inflation in developing countries, particularly Africa. This review may helpful in providing relevant information about policy options for concerning body such as government, policy makers, and other institutions working on production and distribution of goods and services.

2. Conceptual Framework



Source: Literatures (2019)

Figure 1. *Conceptual Framework.*

Inflation creates distortion in the allocation of resources and definitely hurts certain groups. It tends to discourage saving and encourage consumption at fast rate to stay ahead of rising prices. Moreover, the declines of saving rate discourage the capital investment. Unfortunately, it means the economic growth at side of productivity tends to slow down, the fall in productivity means that the supply of new goods and services cannot keep pace with rising demands, putting further upward pressure on price leading to what is known as inflation [1].

It is important to examine the main determinants of inflation. Based on the literature review, this study has identified both dependent and independent variables. It is expected that dependent variable is affected by multiple factors like economic, social, political, institutional, cultural, geographical and etc. This study, however, focuses mostly on macroeconomic factors affecting inflation.

3. Methodology of the Study

In order to get all the necessary information on the area under which the research is conducted systematic review was used. As regard to sampling, random sampling was used to enhance the representatives of sample. The criteria of selection were relevance of the topic and geographical area of studies. In this procedure, first geographical area and then studies were selected. The variables for this study, dependent and independent, were collected from thirteen (13) studies conducted in thirteen (13) African countries. The review mainly focuses on the variables affecting long run inflation. Indeed, the majority of them are also the determinants of inflation in the short run. The study used descriptive statistical tool (percentage), to differentiate the most influential variables.

Table 1. *Reviewed literatures.*

S. N	Author/s	Country	Title
1	Teamrat (2017)	Ethiopia	Determinants of Inflation in Ethiopia: A Time-Series Analysis
2	Patrick & Emmmanuel (2014)	Ghana	Macroeconomic Determinants of Inflation In Ghana: A Co-integration Approach
3	Kabbashi (2012)	Sudan	The Determinants of Inflation in Sudan
4	Fatukasi (2010)	Nigeria	Determinants of Inflation in Nigeria: An Empirical Analysis
5	Haile (2012)	Botswana	The determinants of inflation in Botswana and bank of Botswana’s medium-term objective range
6	Kamel et al (2015)	Algeria	The main determinants of inflation in Algeria: an ARDL model (2015)
7	Mansaray (2015)	Sierra Leone	The determinants of inflation in Sierra Leone: a co-integration analysis
8	Osborn (2016)	Kenya	The determinants of inflation in the Kenyan economy
9	Oatlhotse & Nicholas (2018)	South Africa	The determinants of inflation in South Africa: an empirical investigation
10	Carren (2012)	Zimbabwe	Monetary reforms and inflation dynamics in Zimbabwe
11	El Baz (2014)	Egypt	Determinants of inflation in Egypt: an empirical study (1991-2012)
12	Ruzima et al (2015)	Rwanda	A study on determinants of inflation in Rwanda from 1970-2013
13	Konan (2017)	Cote d’Ivoire	Inflation and economic growth in Cote d’Ivoire

Source: Reviewed Literatures (2020).

4. Results and Discussions

4.1. Description of Reviewed Literatures

This topic describes some of the general characteristics of literatures in terms of country, nature of data, periods under study and models for analysis.

Table 2. *Characteristics of Reviewed Literatures.*

S. N	Author/s	Country	Nature of data	Time	Models
1	Teamrat (2017)	Ethiopia	Time series	1975-2014	Co-integration ECM
2	Patrick & Emmmanuel (2014)	Ghana	Time series	1964 – 2008	Co-integration ECM
3	Kabbashi (2012)	Sudan	Time series	1970-2002	Co-integration ECM
4	Fatukasi (2010)	Nigeria	Time series	1981-2003	OLS
5	Haile (2012)	Botswana	Time series	1990-2010	ARDL
6	Kamel et al (2015)	Algeria	Time series	1980-2012	ARDL
7	Mansaray (2015)	Sierra Leone	Time series	1990-2013	Co-integration ECM
8	Osborn (2016)	Kenya	Time series	1999-2011	OLS
9	Oatlhotse & Nicholas (2018)	South Africa	Time series	1970-2015	Co-integration ECM
10	Carren (2012)	Zimbabwe	Monthly data	Jan 2009-Dec 2011	ARDL
11	El Baz (2014)	Egypt	Time series	1991-2012	VAR
12	Ruzima et al (2015)	Rwanda	Time series	1970-2013	OLS
13	Konan (2017)	Cote d'Ivoire	Time series	1985-2010	ARDL Co-integration

Source: Reviewed Literatures (2020).

The above table shows that all studies are conducted in Africa between Years 2010 to 2017. All studies were conducted in the second decade of 21th century. Therefore, they provide us the recent phenomena of inflation in Africa. All of the studies used time series data for their analysis and applied an appropriate econometrics models.

4.2. Factors/Determinants of Inflation

Inflation can affect growth negatively because it can be considered to be a tax on Investment and therefore could increase the profitability required to undertake an investment projects and would reduce the real interest rate relevant for saving. High inflation may lead to excessive resources being devoted to transaction and cash management instead of the production of goods and innovation, i.e., overall inflation provides an incentive for firms and households to devote more resources to activities' that are not the engines of sustained growth. Inflation causes distortion that affects the search intensity of individual and monopoly power of firms and increases uncertainty, which affects adversely public's ability to make their best decision uncertainly about macroeconomic policy increases with inflation [2].

Different factors are expected to affect inflation, especially in the long run. In this study, however, seven influential variables are selected from literatures as of the following table. The sign (√) shows that the variables have been found significant in the long run from reviewed literatures.

Table 3. *Determinants of inflation [Long run].*

S. N	Author/s	Independent variables						
		GDP	BMS	IR	ER	PG	IGS	PE
1	Teamrat (2017)	√	√					
2	Fatukasi (2010)		√	√	√			
3	Patrick & Emmanuel 2014)					√		
4	Kabbashi (2012)		√		√			
5	Haile (2012)	√	√					
6	Kamel et al (2015)		√		√		√	
7	Mansaray (2015)	√	√	√			√	
8	Osborn (2016)	√						
9	Oatlhotse M. & Nicholas (2018)	√			√		√	√
10	Carren (2012)	√	√		√		√	√
11	El Baz (2014)				√			√
12	Ruzima et al (2015)					√	√	
13	Konan (2017)	√						
Summary		7/13	7/13	2/13	7/13	2/13	5/13	3/13

Key: GDP-GDP/real output/income/GDP per capita BMS-broad money supply IR-interest rate ER-exchange rate PG-population growth IGS- price of imported goods and services PE-price expectation.
Source: Reviewed Literatures (2020).

According to Table 3, the main factors affecting inflation are GDP (national output, national income, GDP per capita) (53.85%), broad money supply (53.85%), exchange rate (53.85%) and price of imported goods and services (38.5%). They are found significant in the majority of the studies. The others variables: interest rate (15.4%), population growth (15.4%), and price expectation (23.07%) are also slightly important in explaining inflation.

Now let us discuss the impacts of change in independent variables on dependent variable (inflation).

GDP is one of the most influential variables affecting inflation. GDP/real GDP/Economic growth/Real Income has negative influence on inflation. Increase in GDP results in decrease in the rate of inflation because of increase in supply

of goods and services. As supply of goods and services increase price level will decrease [9, 11, 12].

On the other hand GDP is found to be directly related to inflation. It is suggested that this positive relationship may be due to the economic situation in the country. That is, to support the economy to grow fast enough; the central bank lowers interest rates to make borrowing more attractive. The logic behind this is that it will encourage spending, which will lead to a rise in GDP. The drawback of this move is that it will also prompt inflation [3, 7, 16].

Rise in money supply in the economy was supposed to result in a rise in the inflation since increases in money supply lead to increase in the aggregate demand. The explanatory variable was statistically significant in influencing inflation in Africa as variation in money supply is a major factor responsible for inflation at any given point in time since there would not be a corresponding increase in the available goods and services. It is found that due to higher money supply, more funds will be available to invest in the economy, investment will be take place, more employment will be generated, aggregate demand will increase, and finally there will be increase in inflation in the economy. It affects price level through demand side [3, 5, 6, 8, 16].

Price of imported goods and services was found to have a significant positive impact on inflation in each country the study is selected. They suggested that increase in price of imported goods and services will increase inflation in the economy. That is as the price of imported goods and services increase their demand will decrease and hence the demand for domestic goods and services increase and then inflation [3, 8, 9, 11, 14].

Interest rate has positive impact on inflation, increase in interest rate results in increased cost of production that led to decrease in the supply of goods in the market. Limited supply of goods had to compete with the available money in circulation and then may lead to rise in price [6].

However, on the other hand interest rate have a negative impact on inflation in that as interest rate increases demand for money will decrease and then people wants more to make deposit in the bank rather than circulating in the economy. Therefore, decrease in interest rate will decrease inflation [9].

With increases in the exchange rate, inflation increased moderately. With devaluation, imports became more expensive. Regarding to finished goods and services as there is devaluation the supply of foreign products in that nation will decrease because of their expensiveness. Therefore the demand for foreign products will shift to domestic goods and services and hence will lead to inflation. On the other hand because of devaluation raw materials imported from abroad for the purpose of producing domestic goods and services becomes expensive and hence cost of production increases. This rise in cost of production increases price [3, 6, 8].

The other variables that have significant impact on inflation are price expectation and population growth. Price expctation by the people in that it will rise in the future todays demand will be high and leads to rise in price level. Population growth increase demand for goods and services also increase and this high demand will shift price up [4, 11, 13].

However, it is found that as population growth increase more and productive peoples will be created and hence there will not be shortage of goods and services and hence no rise in price level [14].

5. Recommendation

Most of the time increase in GDP results in decreasing inflation, leads to a moderate inflation. Therefore increasing their GDP should be the primary option for all African countries. However, in doing that the effect of fiscal and monetary policy tools should be considered. In this review money supply is a significant factor. If money supply is increased as the same time when GDP is increasing the joint effect will be rising price level for such types of developing countries since most of the peoples are poor and as money supply increases their demand for money will increase.

Also the effect of interest rate depends on the nature of other factors. For instance if the central bank decreases interest rate to promote investment and spending to increase GDP the immediate effect will be increasing price level. Regarding to the effect of price of imported goods African countries should promote manufacturing sectors to initiate export and have to have moderate inflation. That is because African countries are mostly known in importing finished goods from abroad and they faced trade deficit. This trade deficit has its own effect on level of inflation. Thus they could try to have trade balance to launch moderate inflation.

If all the above responsible factors are the cause for inflation in these developing African countries the first thing should be adjusting these economic factors to get a moderate or balanced inflation to support the economy. However reasons for inflation in most developing countries are beyond this.

However beyond these factors I recommend other investigators to research other factors that affect inflation for instance the effect of institutional, political and geographical factors such as illegal cartels, political situations, rules and regulations on inflation. For example in Ethiopia interest rate was constant for the past several years, if interest rate decreases many economic agents will borrow and inject huge amount of money to the economy and this may cause to inflation, but this is not the case. On the one hand, national bank didn’t announce whether there is any additional money to be circulated in the economy or not. Even if the national bank induces this additional money without aware of agents the possibility to follow inflation is low.

General increment of salary is not made in the public as well private sectors. In fact, government workers are complaining in that they cannot make up their living as inflation is growing. Even if there is a wage increase, inflationary rate may be on selected commodities. Prices of basic items may decrease. The government has not been able to raise or lower the value of money. Also there has been no legislative change in taxation.

Perhaps most of us may think that rise in price is due to increase in demand and shortage of supply. However, mostly shortage of consumption goods is not experienced. So how can inflation be in the absence of change in the above factors (interest rate, tax law, foreign exchange, money supply and, wage and salary's).

References

[1] Abdi Halim M., M. (2018). Determinant and Impacts of Dynamic Inflation in Somaliland.

[2] Atnafu, G. (2020). Transforming Ethiopia: Big Goals and Big Upheavals. *Ethiopian Economics Association (EEA)*. Addis Ababa.

[3] Carren, P. (2012). Monetary Reforms and Inflation Dynamics in Zimbabwe. *International Research Journal of Finance and Economics*.

[4] El Baz, O. (2014). The Determinants of Inflation in Egypt: An Empirical Study (1991-2012). *Munich Personal RePEc Archive*.

[5] Emirta, A. (2013). Inflation and Economic Growth: An Estimate of the Threshold Level of Inflation for Ethiopia. Addis Ababa, Ethiopia: Ethiopian Economic Association (EEA).

[6] Fatukasi, B. (2010). Determinants of Inflation in Nigeria: An Empirical Analysis. *International Journal of Humanities and Social Science*.

[7] Haile, K. (2012). The Determinants of Inflation in Botswana and Bank of Botswana's Medium-Term Objective Range. *Botswana Journal of Economics*.

[8] Kamel, Si Mohammed, Kheira Benyamina, Abderrezzak Benhabib. (2012). The Main Determinants Of Inflation In Algeria: An ARDL Model. *International Journal of Management, IT and Engineering*.

[9] Mansaray-Pearce, E. A. (2015). The Determinants of Inflation in Sierra Leone: A Cointegration Analysis. *Journal of Economics and Sustainable Development*.

[10] Marcus, G. (2012). Monetary Policy and Inflationary Challenges in the Face of the Global Economic Crisis.

[11] Oatlhotse, Madito and Nicholas M. Odhiambo. (2018). The Main Determinants of Inflation in South Africa: An Empirical Investigation.

[12] Osborn, O. (2016). The Determinants of Inflation in the Kenyan Economy. *International Journal of Economics*.

[13] Patrick Enu, Emmanuel Dodzi K. Havi. (2014). Macroeconomic Determinants of Inflation In Ghana: A Co integration Approach. *International Journal of Academic Research in Business and Social Sciences*.

[14] Ruzima, Martin and Veerachamy, P. (2015). A Study on Determinants of Inflation in Rwanda from 1970-2013. *Int. Journal of Management and Development Studies*.

[15] Suliman, K. M. (2012). The Determinants of Inflation in Sudan.

[16] Teamrat, K. (2017). Determinants of Inflation in Ethiopia: A Time-Series Analysis. *Journal of Economics and Sustainable Development*.