



## A review of inflation and economic growth

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### ABSTRACT

In economics, inflation is a sustained increase in the general price level of goods and services in an economy over a period of time. When the price level rises, each unit of currency buys fewer goods and services; consequently, inflation reflects a reduction in the purchasing power per unit of money – a loss of real value in the medium of exchange and unit of account within the economy. A chief measure of price inflation is the inflation rate, the annualized percentage change in a general price index, usually the consumer price index, over time. The opposite of inflation is deflation. If economic growth matches the growth of the money supply, inflation should not occur when all else is equal. A large variety of factors can affect the rate of both. For example, investment in market production, infrastructure, education, and preventative health care can all grow an economy in greater amounts than the investment spending

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## 1. Introduction

Macroeconomists, central bankers and policymakers have often emphasized the costs associated with high and variable inflation. Inflation imposes negative externalities on the economy when it interferes with an economy's efficiency. Examples of these inefficiencies are not hard to find, at least at the theoretical level. Inflation can lead to uncertainty about the future profitability of investment projects (especially when high inflation is also associated with increased price variability). This leads to more conservative investment strategies than would otherwise be the case, ultimately leading to lower levels of investment and economic growth. Inflation may also reduce a country's international competitiveness, by making its exports relatively more expensive, thus impacting on the balance of payments. Moreover, inflation can interact with the tax system to distort borrowing and lending decisions. Firms may have to devote more resources to dealing with the effects of inflation (for example, more vigilant monitoring of their competitors' prices to see if any increases are part of a general inflationary trend in the economy or due to more industry specific causes) (Gokal et al, 2004).

Having stated the theoretical possibilities, if inflation is indeed detrimental to economic activity and growth, then how low should inflation be? The answer to this question, obviously depends on the nature and structure of the economy, and will vary from country to country. Numerous studies with several theories have been carried out, which specifically aimed at examining the relationship between inflation and growth (Gokal et al, 2004). So according to what was said in the study to consider a review of inflation and economic growth

## 2. Inflation

According to Mishkin (2001) inflation is a rise in the general level of prices of goods and services in an economy over a period of time. When the general price level rises, each unit of currency buys fewer goods and services. Consequently, inflation also reflects erosion in the purchasing power of money a loss of real value in the internal medium of exchange and unit of account in the economy. A great measure of price level is the inflation rate, the annualized percentage change in a general price index normally the Consumer Price Index over time. Inflation's effects on an economy are various and can be simultaneously positive and negative (Munyeka, 2014).

## 3. Economic Growth

According to Nell (2000) economic growth is the most important single measure of the performance of an economy. It generally involves an increase in the volume of goods and services that an economy produces over a period of time. It is measured by the annual rate of change in the gross domestic product. According to McConnell (2000) economic growth is the increase in value of the goods and services produced by an economy. It is conventionally measured as the percent rate of increase in real gross domestic product, or GDP. Growth is usually calculated in real terms such as inflation adjusted terms, in order to net out the effect of inflation on the price of the goods and services produced perhaps since it tells them what happens in the economy.

## 3-1 Determinants of Economic Growth

There is a long debate in the theory of international economics regarding the relationship between trade and economic growth. One school of thought has tried to establish free trade as engine of economic growth whereas the other has criticized this doctrine. The theory of export-led strategy for economic growth has established that trade enhances economic growth of the developing countries. Growth of export increases productivity through expanding the economies of scale in the industries producing exportable goods. Open trade helps the country to make better allocation of its internal resources. It brings specialization and thereby efficiency in production. This will in turn reduce the cost of production of the exportable goods and services. Export growth creates the outlet for excess production and earns foreign exchange which helps the country expand import. Open trade provides the platform for the country to participate freely in the international market. Free interaction in international market imports the production technique and knowledge of management efficiency and therefore, increases productivity. On the other hand, import growth fosters capital accumulation importing capital goods and necessary intermediate factors of production. Therefore, export growth as well as import growth may have a stronger contribution to the economic growth of any country. Though empirical studies cited in section are not unanimous regarding the effect of openness (growth of trade volume) on economic growth, we expect that the growth of openness has a favorable effect on economic growth. The volume of trade is not the only indicator of openness. There are many policy parameters which have been used as indicator of openness. Due to lack of data we cannot consider all the policy parameters as indicators. However, in this study the inflow of FDI has been considered as another indicator of openness. Inflow of FDI makes possible to invest more than the domestic savings. It is favorable for economic growth if the productivity of investment remains positive. FDI brings advanced technologies and managerial excellence. Usually, FDI comes with the collaboration with the domestic capital. So, domestic producers can expand production using these advanced technologies. Inflow of FDI produces positive externalities through technology spillovers. Inflow of FDI reduces the gap between the domestic savings and the desired investment in developing countries which suffer from the problem of deficiencies of capital stock. Besides, inflow of FDI may create the employment opportunity of the country. Therefore, we can expect that FDI is likely to have a positive effect on economic growth. However, a handful empirical study regarding the relation between economic growth and FDI does not support this view. So far the relationship between the growth of FDI and economic growth is important for policy prescription. With this end in view, we are interested to find out the impact of the growth of FDI on economic growth in India. It justifies us to consider the growth of FDI as an important determinant of economic growth. We also incorporate two very important internal factors in the determination of the rate of economic growth. These are the growth of gross domestic capital formation and the growth of population. There is no point to deny that growth of capital formation enhances economic

growth increasing the productivity of labour. The impact of population growth in economic growth is still now a debatable question. One argument states that population growth helps to supply cheap labour and increases demand for goods and services. It accelerates the growth process. But another view asserts that population growth expands consumption expenditure which slows down the capital formation and thereby creates a leakage in the growth process. In order to determine the impact of population growth in India we take it as a determinant of economic growth. Therefore, we formulate a linear model where economic growth depends on the growth of population, growth of domestic capital formation, growth of FDI inflow and the growth of openness. Details of the methodological framework have been described in the next section (Bagli, 2014).

#### **4. What level of inflation is harmful to growth?**

Economic theories reach a variety of conclusions about the responsiveness of output growth to inflation. Theories are useful, as they account for some observed phenomenon. Historically, in the absence of what is termed 'persistent inflation', the early inflation-growth theories were built on cyclical observations. Persistent inflation is regarded as a post-World War II phenomenon. Before then, bouts of inflation were followed by bouts of deflation. Having showed no upward or downward trend, inflation was said to behave like a 'lazy dog'. It stays at a particular level unless and until there is a disturbance. Thereafter, it moves to another level, at which it settles. Theory, therefore sought to account for a positive correlation between inflation and growth (Haslag, 1997).

The aggregate supply-aggregate demand (AS-AD) framework also postulated a positive relationship between inflation and growth where, as growth increased, so did inflation. In the 1970s, however, the concept of stagflation gained prominence, and the validity of the positive relationship was questioned. Widely accepted at that time, the Phillips Curve relationship had appeared to not hold. This was evidenced by periods of low or negative output growth, and inflation rates that were historically high. During this period, prices rose sharply, while the economies around the world experienced massive unemployment.

The following sub-sections will discuss Classical, Keynesian, Neokeynesian, Monetarist, Neo-classical and Endogenous growth theories, each with their respective contribution to the inflation-growth relationship. Classical economics recalls supply-side theories, which emphasize the need for incentives to save and invest if the nation's economy is to grow, linking it to land, capital and labor. Keynesian and Neo-Keynesian theory provided a more comprehensive model for linking inflation to growth under the AD-AS framework. Monetarism updated the Quantity Theory, reemphasizing the critical role of monetary growth in determining inflation, while Neo-classical and Endogenous Growth theories sought to account for the effects of inflation on growth through its impact on investment and capital accumulation (Gokal et al, 2004).

#### **5. The Relationship between Output Growth and Inflation**

The is growing empirical research investigating the relationship between economic growth and inflation, however, most of the research has focused on groups of industrial and developing countries and there has been very

little research on individual countries, including South Africa. Economic theories reach a variety of conclusions about the responsiveness of output growth to inflation. Theories are useful, as they account for some observed phenomenon. The inflation-growth relationship has been debated for some time. Inflation can have three possible effects on growth: a positive effect, a negative effect and no effect at all. It is generally agreed that high levels of inflation would have a negative impact on growth, but certain inflation thresholds could have a positive effect on growth. It is also agreed that the relationship to be either negative or positive it also lays on the reliability of the model used to test that particular relationship between this two macroeconomic variables (Burdekin & Weidenmier 2002).

According to economic theory, the negative effect on growth is thought to happen at a particular inflation rate known as the inflation threshold. Beyond this inflection point, there is a negative relationship between inflation and growth in both directions. Below it, no relationship and in some cases a positive relationship. Inflation uncertainty may also have an effect on economic growth. Theory shows that inflation uncertainty may have a greater negative effect on growth than the level of inflation (Hodge, 2006). Empirical evidence provides support to the theoretical studies. The empirical literature is divided into three sections; cross-country analysis, single country analysis and studies on South Africa. In terms of the relationship between inflation and growth, empirical literature shows that there is a negative relationship between inflation and growth for the majority of the studies. This applies to South Africa as well. In terms of the inflation threshold level, empirical literature shows that inflation threshold levels exist for all but a few of the countries. From 2000 onwards when inflation targeting was implemented, there were fewer fluctuations in both the inflation rate as well as the GDP growth rate. This is in support of the inflation targeting objectives: a lower inflation rate will lead to a more sustained growth rate with fewer fluctuations (Munyeka, 2014).

A long-run relationship between inflation and economic growth does not imply causality. In terms of the volatility of inflation, there is a strong positive relationship between the inflation rate and the volatility of inflation. However, it is unclear as to whether it dampens economic growth since the implementation of inflation targeting it is apparent that over the years employment has largely remained positive. It also shows that employment has also been less volatile since the implementation of inflation targeting. This suggests that low inflation levels promote job creation by increasing economic growth in the economy (Khan, Quoted from, Munyeka, 2014).

#### **6. Implication of Inflation on Economic Growth**

The traditional Keynesian model comprises of the Aggregate demand (AD) and Aggregate Supply (AS) curves, which aptly illustrates the inflation growth relationship. According to this model, in the short run, the (AS) curve is upward sloping rather than vertical, which is its critical features. If the AS curve is vertical. Changes on the demand side of the economy affect only prices. However, if it is upward sloping changes in AD affect both prices, and output, Dornbusch, et al, (1991). This holds with the fact that many factors drive the inflation rate and the level of output in the short-run. These includes changes in

expectations, labour force, prices of other factors of production, fiscal and /or monetary policy.

In moving from the short-run to the hypothetical long-run, the above mentioned factors and its shock on the steady state of the economy are assumed to balance out. In this steady state situation, nothing is changing, as the name suggests. The dynamic adjustment of the short-run AD and AS curve yields an adjustment path which exhibits an initial positive relationship between inflation and growth, however, turns negative towards the later part of the adjustment path.

Therefore, even if the prices of goods in the economy have increase, output would not decline, as the producer has to fulfill the demand of the consumer with whom the agreement was made. The aggregate supply-aggregate demand (AS\_AD) framework also postulated a positive relationship between inflation growths whereas growth increased, so did inflation. In the 1970's however, the concept of stag inflation gained permanence, and the validity of the positive relationship was questioned. Widely accepted at that time, the Philips curve relationship had appeared to not hold. This was evidenced by periods of low or negative output growth, and inflation rates that were historically high. During this period, prices rose sharply, while the economics around the world experienced massive unemployment (Chude et al, 2015).

#### 7. Inflation could hamper economic growth mainly due to the following reasons

- ❖ Economies that are not fully adjusted to a given rate of inflation usually suffer from relative price distortions caused by inflation. Nominal interest rates are often controlled, and hence real interest rates become negative and volatile, discouraging savings. Depreciation of exchange rates lag behind inflation, resulting in variability in real appreciations and exchange rates.
- ❖ Real tax collections do not keep up with inflation, because collections are based on nominal incomes of an earlier year (the Tanzi effect) and public utility prices are not raised in line with inflation. For both reasons, the fiscal problem is intensified by inflation, and public savings may be reduced. This may adversely affect public investment.
- ❖ High inflation is unstable. There is uncertainty about future rates of inflation, which reduces the efficiency of investment and discourages potential investors (Salian, 2007).

#### 8. Conclusion

Inflation affects economies in various positive and negative ways. The negative effects of inflation include an increase in the opportunity cost of holding money, uncertainty over future inflation which may discourage investment and savings, and if inflation were rapid enough, shortages of goods as consumers begin hoarding out of concern that prices will increase in the future. Positive effects include reducing the real burden of public and private debt, keeping nominal interest rates above zero so that central banks can adjust interest rates to stabilize the economy, and reducing unemployment due to nominal wage rigidity.

Economists generally believe that high rates of inflation and hyperinflation are caused by an excessive growth of the

money supply. Views on which factors determine low to moderate rates of inflation are more varied. Low or moderate inflation may be attributed to fluctuations in real demand for goods and services, or changes in available supplies such as during scarcities. However, the consensus view is that a long sustained period of inflation is caused by money supply growing faster than the rate of economic growth.

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