World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 18, January 2023
ISSN: 2749-3628,

FINANCIAL INFLATION ON THE GROWTH RATE OF IRAQI OUTPUT, AN ANALYTICAL STUDY FOR THE YEARS (2011-2020)

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Article history:
Received: 4th November 2022
Accepted: 6th December 2022
Published: 6th January 2023

Abstract:
The main objective of this research is to verify the inflation rate and its impact on the GDP growth rate for the period 2010-2020, on an annual basis. In order to verify the relationship of inflation as an independent variable with the growth rate of GDP. Thus, Diagnostic tests were employed to examine the model's data, such as the Durbin-Watson test for serial correlation analysis. For the tests, solid outcomes and indicators were achieved., and the standard economic results indicate that the rate of inflation has a positive impact on the rate of growth of the GDP in Iraq.

Keywords: inflation rate, GDP growth rate

1. INTRODUCTION:

For the majority of nations in the globe today, achieving sustainable economic development and price stability continues to be the core objective of macroeconomic policies. With the intention of promoting sustainable economic growth and increasing the purchasing power of the local currency, monetary policy is controlled., the focus is on price stability among other things (Umaru & Zubairu, 2012:187). Recent years have seen a heated debate among policymakers and economists about whether inflation is harmful to economic progress. Numerous studies have calculated a conflict between inflation and economic expansion. The issue at hand is more specifically whether inflation is beneficial to or detrimental to economic progress. The rate of domestic product is determined by the rate of capital formation, which is greatly influenced by the rate of savings and investment. (Datta & Kumar, 2011:415). Rates of inflation and economic growth around the world have been erratic. One of the most important macroeconomic challenges has persisted: the connection between inflation and economic growth., with inflation rates dominating growth rates for practically many years (Madhukar & Nagarjuna, 2011:498). Similarly, (Ahmed, 2010:41) claims that several economic literatures have explored this link and that the resulting debates have revealed divergent viewpoints on the current situation of the international economic system. These strategies assumed that rising aggregate demand led to higher output and inflation. Inflation was, however, commonly acknowledged at the time as having a good impact on economic growth rather than being a concern. In the middle of conflicting opinions, Phillips for the first time put forth the theories that show how rising inflation spurs economic growth by bringing down unemployment rates.

The study makes an effort to examine the rate of inflation and how it affects GDP growth or other economic indicators. Today, most countries need price stability to achieve long-term economic growth.. Price stability is one of the main objectives of these countries' macroeconomic strategies. The link between inflation and economic growth continues to be one of the macroeconomics issues deemed difficult because the rates of both global economic growth and inflation are always altering.. (Kasidi & Kenani, 2012:363). And when it comes to the relationship between the rate of inflation and the rate of economic growth, it was stated in earlier economic theories that there is no relationship between these variables, but opinion today has changed and there is now a consensus that the two factors are linked (Datta & Kumar, 2011:15). As a result, economic growth will occur when the inflation rate is low, and it will also negatively impact trends in economic growth when it exceeds two digits or occurs at times when the inflation rate is high (Prasanna & Gopakumar, 2010:4). According to the availability of data, sufficient and acceptable standards, and an attempt to produce conclusions that are professional and acceptable, data covering a ten-year period between 2011 and 20200 is used in this study. In order to make the study's findings more applicable, we will evaluate our hypothesis—that the rate of inflation influences economic growth—in this study. A literature review, methodological analyses, The framework of the paper consists of empirical data and analysis, findings, and references..

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1. Theoretical review:

1.2. Inflation theories:

The quantity theory of money, which connected changes in the amount of money in circulation to changes in the general level of prices, is the oldest surviving economic theory, according to Totonchi (2011:454). This implies that the level of the money supply determines whether the economy is experiencing inflation or not. The analysis of inflation based on this idea was examined by certain classicists and some neoclassicists.

The first dynamic mechanism for how monetary changes move from one sector of the economy to another, affecting relative prices and quantities, was developed by David Hume. David Ricardo claims that the Bank of England's reckless handling of currency and its ability to boost output and employment by injecting new money into the economy are to blame for the inflation that is currently occurring in the United Kingdom. Fisher introduced the widely used exchange formula. (MV = PT) (Jeremiah&Emmanuel, 2016:23).

Fisher&Author By controlling externally determined shares of high-powered money, Cecil Pigeon (1877-1959) and the neoclassical economists of the Cambridge School demonstrated that monetary management is possible in a partial reserve banking system (Kogid, 2012:101). According to Milton Friedman's (1867–1960) supporters, who believe that only money matters, monetary instruments are more useful for maintaining stable prices and the economy than fiscal policy. This is known as monetary theory. This institution is renowned for the contemporary quantity theory of money, which contends that inflation is a universal monetary phenomena caused by the rapid expansion of the quantity of money as opposed to an increase in the output of goods and services. In other words, inflation will happen if the money supply increases more quickly than the pace at which the national income is growing. Totonchi (2011:454) asserts that critical academics made use of the Fisher equation of exchange's well-known identity. The continual rise in the overall level of prices within an economy has an impact on the value of the native currency, according to the quantity theory of money (Fisher version). It is a long-term increased price movement that impacts all commodities and services inside the economy and is not a one-time event. There are a number of factors that contribute to inflation, including demand decrease inflation, cost-push inflation, which is caused by an increase in the cost of production, and structure inflation, Constraints such as ineffective production, marketing, and distribution channels in the economy's productive sectors are what cause it. (Fatukasi 2012:262).

1.2.1. Keynesian inflation theory:

John Keynes (1883–1946) believed that a rise in aggregate demand is what drives demand-pull inflation. Demand-pull inflation occurs when the economy's total supply and distribution of goods and services are insufficient to meet the overall demand for goods and services. In my opinion, aggregate demand is made up of government spending, investment, and consumption (Kogid,2012:102).

(Totonchi,2011:455) asserts that a policy that results in a decrease in each element of aggregate demand is effective in steadily easing pressure on demand and inflation. This basically entails lowering government spending, raising taxes, and managing the quantity of money. When taxes are raised, producers may become more interested in obtaining economic rents rather than investing in the real economic sectors where it is possible to address the issues of low productivity and unemployment, which means Nigeria, where the economy relies heavily on imports, may experience greater inflationary pressures as a result of increased demand.

1.2.2. Cost-push-inflation theory:

The 1950s and 1970s saw a rise in this sort of inflation, which came to be known as the "new inflation." This goes hand in hand with the rise in manufacturing costs brought on by wage increases or increases in the cost of raw materials. When trade unions demand higher salaries from businesses, and if they are given, the companies will raise the price of their goods as a result, which will eventually cause inflation that drives up the cost (according to Totonchi, 2011:457). He continued by saying that the ensuing price increase might have an impact on certain other businesses that use the products, which would raise prices. Due to a lack of input resources, particularly capital goods, developing nations are forced to purchase these products from established nations. Due to the rise in import costs, locally produced goods are frequently eventually more expensive than comparable manufactured goods imported into the nation. This has the unfortunate effect of weakening domestic manufacturing and ultimately raising prices (Kogid, 2012:101)

1.2.3. Structural inflation theory:

According to this theory, supply and demand can change as a result of economic structural issues, whether such factors are positive or negative. The less developed nations would undoubtedly experience inflation if they fail to reform their deeply ingrained and underdeveloped structures, according to Totonchi

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(2011:458). This is because structural improvement leads to rapid economic growth. The expansion in the services sector brought on by population growth and migration is also attributed to structural inflation, as stressed by structuralism. The social and economic systems are still in place. This may help to understand why the nation's inflationary crisis has proven so challenging to solve. 2012:262 Fatukasi Regarding the influence of the structural phenomenon on inflation, Totonchi (2011) identified 10 structural factors, including trade union conflict, agricultural obstacles, industrial output, imports, exports, and the production and import of food., indirect corporate taxes, wage bill, and the countries that suffer from the structural problem, particularly the least developed countries. A typical strategy to counteract inflation is contractionary monetary policy, It often contradicts itself by reducing the economic expansion of the least developed countries. This is largely accurate because less developed nations have numerous issues with infrastructure and social services that need to be fixed. Additionally, attempts to limit spending and liquidity in the economy may result in a slow rate of economic growth, which links inflation to Keynesian growth theories.

1.2.4. Critical Theory:

Numerous long-term aspects of economics, such as the availability of money and the quantity theory of money, were stressed by monetary theory. Milton Friedman is the backer. The quantity theory of money, according to Gokal and Hamif (2004), established a relationship between inflation and economic growth by equating total economic spending with total money in circulation. According to Friedman, inflation results from a rise in the money supply and velocity of money that is faster than the rate of economic growth. According to monetary theory, prices have no actual money effect in the short term but are affected by the growth rate of the money supply if it exceeds economic growth or the rate of production.

2.2. The inflationary new political macroeconomics:

Other theories of inflation place less emphasis on the economic reasons that drive inflation and more emphasis on the institutions, political system, and culture that shape inflation and affect actual economic policy. New insights into the relationships between election timing, policymaker performance, political instability, the credibility and reputation of policies, and the inflation process itself are provided by the new political economy (Totochi, 2011:456). When taking into account the political process as well as prospective pressure measures on government finances, he believed that the continuous government deficit as a potential driver of inflation may be mostly or fully domesticated (Jeremiah & Emmanuel, 2016:23).

2.3. Negative effects of inflation:

A greater inflation rate imposes a loss cost that lowers the real value of cash balances, lowering the real value of long-term profits. Additionally, The increase in inflation will decrease the real value of each deposit in the bank and its projects as well as the banking system's cash reserves, which will reduce the financial depth (Khan, 2002:13).

Lenders and borrowers find it more challenging to agree to long-term financial contracts, particularly those involving cash balances, due to the high rate of inflation, It also makes it more challenging for financial institutions acting as intermediaries to offer long-term funding for the production of physical capital.. Because high inflation makes it more expensive to maintain liquid cash balances, which incentivizes consumers and businesses to exchange money for real products and decreases the money supply to GDP ratio, a key indicator of the health of the financial sector. On the other hand, excessive inflation raises the cost of information and transactions, which makes it more difficult to achieve economic development. For instance, the unpredictable nature of the inflation rate makes it challenging to forecast expenses and revenues, and the expensive cost of doing so prevents people and projects from creating long-term plans.

Additionally, investors are reluctant to sign futures contracts due to the difficulty of precisely predicting the rate of inflation, which restricts the development of new projects (Karen & Louise, 2018:6).

Governments impose financial restrictions on the financial sector in order to protect specific sectors of the national economy in conjunction with the high rate of inflation. According to theoretical studies carried out by (Azariadas & Smith, 1996), Examples of these techniques include the following: putting taxes on the earnings of intermediary financial institutions, adopting special rules to restrict the credit supplied to certain economic activity, and setting maximum limits for interest rates on deposits and loans (Wang,1999:6).:309 When inflation reaches a given high level, the returns on savings decline. This has the effect of lowering both the amount and the number of savers, which reduces the amount of credit available to the economy.

2.4. Gross domestic product

Growth in the per capita or net national product over an extended period of time is referred to as economic growth. Since population is expected to increase at a faster rate than total output, this is

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required. The proportion of commodities and services in the national product that meet the needs of the greatest number of people is another quantitative measure of economic growth. Economic growth is the quantitative rise in the cost of the goods and services produced in a country's economy over a given year. Economic growth is measured using the gross domestic product or the change in the gross national product (Dwivedi, 2004:44).

The gross domestic product measures the total value of goods and services produced by an economy less the total value of goods and services consumed during production (GDP). GDP is calculated by adding together all of the following: gross domestic product, net exports of goods and services, personal consumption expenditures, government consumption expenditures, and gross investment (Karen & Louise, 2018:5). The National Income and Product Accounts (NIPAs), a significant set of economic data that measures economic activity in the United States, use the GDP as its primary output indicator.. 2 The following content needs to be read in conjunction with a few NIPA-specific explanations. Office of Economic Analysis (2015) demonstrates that there are various methods for calculating GDP (Dwivedi, 2004:45).

2.5. Advantages of the GDP

Given that the level of GDP and specific consumption are highly correlated, In the long run, GDP may not be a bad proxy for economic welfare, at least for the market-dependent element of it. In general, GDP fluctuates more than consumption. The GDP typically declines more during recessions than consumption, among other reasons (Karen & Louise, 2018:6). These discrepancies are more likely to be viewed as a feature than a flaw in the idea of gross domestic product from the perspective of policymakers aiming to stabilize the economy at the periodicity of the business cycle. The fundamental argument mirrors the topic of how early designers preferred GDP partially as a production-based term because it better fits the Keynesian concept of aggregate demand. A crucial indicator of an economy's health is if its resources are being fully utilized. When economic resources aren't fully utilized, unemployment rates rise and earnings fall. Therefore, it is not surprising that government officials in charge of countercyclical monetary and fiscal policy would prefer to concentrate on an aggregate measure that represents all domestic production, including production related to investments, even if such production does not immediately increase consumer welfare (Khan, 2002:13).

2.6. The relationship of inflation to economic growth

The fact that debates about the relationship between these factors are still going on was emphasized. In this regard, academics and macro-policy decision-makers largely agreed that there is no correlation between economic growth and the rate of inflation. Given the then-current economic prosperity of Latin American nations, this generally held belief was formed at the time (Behera, 2014:145), however recently, this belief has started to shift. Currently, the majority of research' findings indicate a connection between inflation and economic growth. However, if we examine the literature closely, there are two points that stand out: first, there is no consensus on the ideal level, and second, it is commonly acknowledged that there is a limit to a certain inflation rate, at which economic growth from the positive rate starts to turn negative. Or, to put it another way, what is the inflation rate when economic growth starts to decelerate? (2010):3 (Prasanna & Gopakumar). (Fischer, 1993: 837) both developed and developing economies used panel and sectoral data. The results of his analysis show that there is a highly substantial negative link between inflation and economic growth, and he also made a significant contribution to the literature that looked at the long-term relationship between inflation and economic growth..

(Barro,1995:166) Using data from 100 different countries between 1960 and 1990, researchers examined how inflation affected economic performance and came to the following conclusions: There is no question that high inflation has a negative impact on economic growth, although this impact is less noticeable when inflation is moderate., according to (Ghosh and Phillips,1998:98). They used regression panel data to demonstrate a substantial negative relationship between inflation and economic growth, which is evident in Excessive inflation, with the exception of very low rates.

According to the fundamental idea that inflation is an economic reality, inflation will always increase as the money supply increases. Therefore, a reduction in the money supply is required by the fundamental policy prescriptions in order to manage inflation. For there to be sustainable growth, the rate of inflation cannot be higher than the rate of economic growth. Initiatives to promote price stability are occasionally seen as incompatible with certain macroeconomic goals, such as strategies for sustainable growth and export promotion. As a result, the central bank's efforts to control inflation are observed, along with any ripple effects on other economic variables. This is

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Available Online at: https://www.scholarexpress.net
Vol. 18, January 2023
ISSN: 2749-3628,

demonstrated by the fact that, even though efforts to support price stability are a top priority, it could be essential to increase the money supply in order to finance economic projects. It may be claimed that in this case, efforts to stabilize prices are hindering growth. Therefore, the influence of inflation on economic growth relies on whether central bank policy effects are long-term or short-term (Sarel, 2017:95).

3. Research Methodology :

Through what was put forward in the theoretical review, it was found that there is a general controversy and disagreement, which is that inflation has negative or positive effects on the growth of the economies of countries, which means that an increase in inflation will lead to a decrease or increase in economic growth. This reflects the inflationary trends that are beginning to take shape in Iraq, where inflation rose from -0.2% (to 6.05%) between the periods 2011-2020. Economic growth increased from (-28.5% to 34.1%) throughout the same period. Therefore, the purpose of this study is to ascertain how inflation affects economic growth in the Republic of Iraq. This study can be of great significance if it can determine how inflation affects Iraq's GDP growth rate. Clarifying how the GDP growth rate responds to variations in inflation is relevant here. As a result, both academics and monetary authorities are better able to understand how inflation rates and GDP growth rates are related. By adopting sound economic principles, the negative effects of inflation can be addressed and reduced in this regard..

The research aims to achieve the following:

- A study of the effect of inflation on the growth rate of GDP in Iraq during the period 2011-2020
- Measuring the degree of response of the Iraqi GDP growth rate to changes in the rate of inflation.
- Establishing the relationship between inflation and the GDP growth rate in Iraq
- Determine the extent to which the GDP growth rate responds to changes in inflation.

3.1. Research questions :

The following inquiries are attempted to be addressed in this study in order to meet the aforementioned research objectives:

- How does Iraq's GDP growth rate respond to inflation?
- How does Iraq's GDP growth rate react to fluctuations in inflation?
- Does Iraq's GDP growth rate and inflation have a long-term relationship?

3.2. Research questions :

This study makes an effort to provide answers to the following queries in order to meet the aforementioned research objectives:

- How does Iraq's inflation rate affect the country's GDP growth rate?
- How much does Iraq's inflation change affect the GDP growth rate?
- Does the rate of inflation in Iraq have a long-term relationship with the GDP growth rate?

3.3. Hypotheses: The following hypothesis will be tested;

H0: Iraq's GDP growth rate is not significantly impacted by inflation..

H1: Iraq's GDP growth rate is significantly impacted by the level of inflation..

3.4. The Model of Search:

The research hypothesis model, represented in Figure (1), reflects the research hypotheses, which will be proven/rejected when testing the hypotheses:

Figure (1) The hypothetical form of the research

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4. DATA ANALYSIS AND HYPOTHESIS TESTING

4.1. Description of inflation and economic growth indicators for the years (2011-2022)

The inquiry was conducted utilizing the experimental method, and a descriptive data analysis was used to evaluate changes throughout different time periods within the descriptive statistics. The dependent variable in the regression model was financial inflation indicators, and the explanatory or independent variable employed in the model was (the growth rate of domestic product). Total). The number of observations, minimum, maximum, mean, standard deviation, and variances are among the descriptive statistics shown in Table (1).

Table (1) Descriptive statistics

			GDP growth rate	Inflation rate	
			34.1	5.6	2011
			17.0	6.05	2012
			7.6	1.86	2013
			-2.7	2.24	2014
			-26.9	1.44	2015
			1.2	-1.46	2016
			12.6	0,19	2017
			21.3	0.2	2018
			3.3	-0.2	2019
			-28.5	0.6	2020
variance	standard deviation	Arithmetic mean	maximum	minimum	
11.4	12.12	3.9	34.1	-28.5	GDP growth rate
14.5	13.37	1.63	6.05	-1.46	Inflation

Source: The annual report on the monetary policy of the Central Bank of Iraq in managing inflation, (2020, 2021.(

The GDP growth rate was (1.2) percent, with a standard deviation of (4.12%), according to the model's output. The values at the lowest and highest points are (-9.8%, 10.6%). Financial inflation serves as the primary explanatory variable in this study, however the inflation rate may reach an average of (11.21%), with a standard deviation of (4.37%). The inflation rate was used to reach a minimum value of (1.9%) and a maximum value of (17.6%).

4.2. Correlation analysis:

A correlation matrix is shown in Table 2 that allows for a summary of the relationship between the independent variable (GDP growth rate) and the dependent variable (inflation). The GDP growth rate and the results from the variables included in the correlation matrix have a positive relationship. has an inflation rate confidence level of (99.9) percent. (0.22**) was the correlation coefficient between these two variables.

(Table 2: Correlation Analysis (Pearson

inflation	GDP growth rate	
0.22**	1	**GDP growth rate**
1	0.22**	**inflation**

4.3. Analysis of the influence relationship between the two variables:

The proportionate contribution of each independent explanatory variable to the influence of the dependent variable is calculated using a linear regression model. A summary of the linear regression model's effect value, standard error assessment, and Durbin-Watson test may be seen in Table No. (3). The model's data reveal that the dependant variable has a substantial effect link, according to the results, as the effect value

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Available Online at: https://www.scholarexpress.net
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was (.26), and the significant value was (0.001). This confirms a strong effect of inflation on the GDP growth rate

Table (3) The effect model between the two variables							
Model	R^2	Adjusted R^2	f	B	Std. Error of the Estimate	DurbinWatson	Significance
1	.26	.25	.38	.125	3.8	1.49	0.007

The estimated standard error in the form summary was (3.8). Durbin-Watson correlation value was (1.49). It indicates that the data in the model has a significant positive impact of both variables. It can be considered that the model used is stable. The value of (f) was (.38), and the results indicate that there is a positive and significant effect of inflation on the GDP growth rate. The value of (B) reached a value of (.125), and this means that the increase by (1%) in the inflation rate It contributes to a growth rate of (12%) in the GDP growth rate.

Based on all these tests, we can conclude that the applied model rejects the null hypothesis that states (financial inflation does not affect the growth rate of GDP), and adopts the alternative hypothesis that states (financial inflation affects the growth rate of domestic product).

5. DISCUSS THE RESULTS:

According to a data model created by the study's research, the economic analysis' conclusions were supplied. It is clear that the inflation rate variable is positively skewed, statistically significant, and has a confidence interval of 99.9% (Sig = 0.007). Thus, the growth rate benefits from the influence of the inflation rate. On the basis of our findings and comparison with similar models of literature review - empirical evidence by different authors, we also note that our findings are consistent with a number of studies from various authors, such as Hasanov (2010:6), which used annual data for GDP growth rate. The model's findings demonstrated a nonlinear relationship between inflation and economic growth; additionally, despite the fact that the inflation rate peaked at 13%, it had a positive impact on GDP growth. What is meant by this is the actual gross domestic product (GDP). Barro (1995:168) investigated the impact of inflation on economic performance and found that, when other country characteristics are held constant, an increase in average inflation of 10% per year results in a reduction in real GDP growth of 0.2 to 0.3 percent annually and an increase in the investment-to-GDP ratio of 0.4 to 0.6 percent (Ghosh & Phillips, 1998:68). Whereas (Sergii, 2009:46) came to the conclusion that the relationship between inflation and growth is only a function of the so-called inflation rate, with an inflation rate of 8% generally tending to restrict economic growth while one of less than 8% promotes it. We conclude from the results of the current study and the econometric model that, when all other factors are held constant, an increase of 1% in the inflation rate causes an increase of (12%) in the growth rate. The conclusions drawn from the used data also have ramifications for the member nations of the eurozone. The Maastricht criteria, which demanded that member countries keep inflation at a moderate level in order to promote consumption and economic growth, served as the foundation for the principles it applied.

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Vol. 18, January 2023
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