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Literature Review: How and What is the Inflation Rate in Indonesia Today? What is the Government's Effort?

Dinda Sahira Rifly[1], Abd. Rasyid Syamsuri[2]

[1,2] Fakultas Ekonomi dan Bisnis, Universitas Riau, Pekanbaru, Indonesia

Article Information	Abstract
Article History: Received: - Accepted: - Published: - Keywords: Inflation, Exchange rate, Government	The literature review in this article aims to examine how and what is the current inflation rate in Indonesia and what efforts the government has made to follow up on things that are happening to related matters. The phenomenon of inflation in Indonesia is actually not solely a short-term phenomenon and one that occurs situationally, but like what is common in other developing countries, the inflation problem in Indonesia is more of a long-term inflation problem because there are still structural obstacles in the country's economy. Thus, it is not enough to improve the inflation problem in Indonesia by using monetary instruments alone, which are generally short-term, but also by making improvements in the real sector, namely with the main target of eliminating structural obstacles in the national economy.

✉ Correspondence Address:
dinda.sahira3873@student.unri.ac.id

INTRODUCTION

Inflation stability is a prerequisite for sustainable economic growth so it is expected to provide benefits for improving people's welfare. Therefore, inflation control is based on the consideration that high and unstable inflation has a negative impact on people's socio-economic conditions is indispensable (Gaffar, Gani, Haviluddin, Gaffar, & Alfred, 2019; Hartini & Utomo, 2017; Meita Nova Yanti Panjaitan, 2016). Thus, research on inflation prediction has received positive attention for macroeconomic researchers in a country, including Indonesia.

Inflation is one of the macroeconomic indicators that has a significant impact on a country's economic stability. In Indonesia, the phenomenon of inflation is a serious concern for the government because it is directly related to people's purchasing power and overall economic welfare. Based on Bank Indonesia data (2024), Indonesia's inflation rate at the beginning of 2024 reached 3.16%, an increase compared to the same period the previous year which was at 2.87.

The current inflation problem in Indonesia is influenced by various factors, both from the demand-pull inflation side and the supply-side (cost-push inflation). Food price instability, rupiah exchange rate fluctuations, and global energy price pressures are the main factors driving the increase in inflation. According to a report by the Central Statistics Agency (2024), the increase in food prices contributes significantly to inflation, with an increase of up to 5.8% for the foodstuff group.

The inflation phenomenon that occurred is also inseparable from the impact of the economic recovery after the Covid-19 pandemic. The increase in economic activity and public consumption that is not balanced with the readiness of the production sector creates inflationary pressure. Data from the Ministry of Finance (2024) shows that public consumption growth increased by 4.5% year-on-year, while production capacity has only reached 80% of pre-pandemic levels.

Accumulating the accumulation of depreciation after 10 years of inflation, the value of money cumulatively decreased by -45.54% or - 5.90% YoY (year over year). For reasons to be easy to remember, in each article/discussion we round up the 10-year annual inflation is 6% per year (https://www.bi.go.id). Meanwhile, inflation conditions in Samarinda City in 2018, from July to November, can be said to be unpredictable. In July and August, inflation was 0.92% and 0.28%, respectively. However, in September, October and November there has been deflation of -0.01%, -0.16% and -0.06%, respectively. The rate of inflation is due to a decrease in the price of basic goods (https://samarindakota.bps.go.id/). Furthermore, the current inflation rate is the result of policies that have inflation values in the past.

For the Government, inflation rate prediction is a connecting bridge to determine the value of future inflation. Various kinds of predictions with artificial intelligence methods continue to be carried out and developed by researchers. (Amrin, 2014) applied the Backpropagation Neural Network (BPNN) algorithm to predict the monthly inflation rate in Indonesia. The results of the analysis show that the performance of the BPNN algorithm with a fairly good level of prediction accuracy based on the MSE value of 0.0171. Furthermore, (Stephani, Suharsono, & Suhartono, 2015) applied statistical methods (ARIMA) and artificial intelligence (ANFIS) to predict general inflation data and inflation of seven expenditure groups for the period 2001-2014.

The results show that both methods can be used as alternative algorithms in making predictions. Furthermore, (Kurniawan, Pamungkas, Wibawa, & Haviluddin, 2016) has applied the Backpropagation Neural Network (BPNN) algorithm to predict the opening of sharia trading positions. The data taken is the exchange rate between the Euro (EUR) and the USD as many as 720 datasets. The input parameters used for BPNN training consist of trending, momentum, moving average convergence/diverge (MACD), and relative strength index (RSI). The results of the analysis show that the BPNN method with architecture; 4-8-1; the learning function is Levenberg–Marquardt; The activation function is PureLin, the learning rate is 0.9, the epoch is 1000. The architecture has been tested against 50 new data, where this model is able to produce good forecasting accuracy with an MSE value of 0.002748.

The impact of inflation on the national economy can be seen from various aspects. The results of the Economics Institute's research (2023) revealed that an increase in inflation of 1% correlates with a decrease in people's purchasing power by 2.3%, especially in the lower middle class group. This has the potential to increase poverty rates and economic disparities if not managed properly.

The challenge of controlling inflation is increasingly complex with external pressures from global economic dynamics. Geopolitical uncertainty, global supply chain disruptions, and monetary policies of developed countries are factors affecting domestic price stability. Bank Indonesia (2024) noted that the volatility of the rupiah exchange rate and international commodity prices exerts additional pressure on the domestic inflation rate.

The urgency of controlling inflation encourages the government to take various strategic policy steps. Coordination between monetary and fiscal authorities is key in maintaining price stability. However, the effectiveness of inflation control policies still faces various challenges, ranging from structural economic problems to the limitations of available policy instruments. The Coordinating Ministry for Economic Affairs (2024) stated that a comprehensive approach involving various stakeholders is needed to control inflation in a sustainable manner

This paper aims to apply the Backpropagation Neural Network (BPNN) method to predict the inflation rate in Samarinda City, East Kalimantan. Furthermore, the results of this research are expected to help consider good monetary policy, assist investors in making investments and related parties so that it is hoped that the economy in Samarinda City can get better. This paper consists of four parts. The first part is the motivation for this research. The second part is to explain the methodology and techniques used. The third part is to explain the results of the test with the BPNN method and the data that has been determined. And, the last part is the conclusions and suggestions obtained after the test, as well as the next research plan.

THEORETICAL STUDIES

1. Rupiah Exchange Rate

Miskhin (2011:136) said that the exchange rate is the price of a country's currency in the price of currencies with other countries. The exchange rate is important because the forex rate affects the price of domestically produced goods sold abroad and the cost of foreign goods purchased domestically. Mishkin (2011:110) said that when a country's currency appreciates (its value rises relative to other currencies), the goods produced by that country abroad become more expensive and the goods produced abroad in that country become cheaper (assuming domestic prices are constant in both countries). On the other hand, when a country's currency depreciates, the country's goods abroad become cheaper and the country's overseas goods become more expensive.

The Rupiah exchange rate is divided into two, namely, the nominal exchange rate and the real exchange rate. The nominal exchange rate is the value used by a person when exchanging a country's currency for another country's currency. While real exchange value is the value used by a person when exchanging goods and services from one country for goods and services from another country.

Research on the Rupiah Exchange Rate has been widely studied by previous studies such as research developed by (Sartika, 2017), (Miyanti & Wiagusti, 2018), (Anggriana & Paramita, 2020), (Desvina & Lubis, 2019).

2. Inflation Rate

Inflation is the rate of overall price increase. According to Halim (2009:87), inflation is a tendency to increase the price of goods and services, including production factors in general and continuously. The price referred to in the sense of inflation is not the price set by the government, but the price that occurs in the market between free parties. Price increases occur due to inflation, not due to technological factors, the nature of goods, and the influence of seasons (e.g. holidays).

Arifin (2012:12) states that the simplest definition of inflation is an increase in the price of goods in general or a decrease in the purchasing power of a currency unit. If the price of one type of goods rises while the other remains the same, it cannot be said that it has happened if the price of basic necessities such as rice, sugar, oil, and so on moves up simultaneously and comprehensively in all places. At that time, the purchasing power of our money becomes lower and inflation occurs.

Research on inflation has been widely studied by previous studies such as research developed by (Sartika, 2017), (Miyanti & Wiagusti, 2018), (Anggriana & Paramita, 2020) (Hendayanti & Nurhayati, 2018), (Nurhidayati, 2018).

RESEARCH METHOD

This study uses a literature review method with a qualitative approach to analyze the inflation rate in Indonesia and the government's efforts to control it. Data collection was carried out through systematic searches on academic databases such as Google Scholar, Research Gate, Garuda Portal, as well as official data sources from Bank Indonesia, the Central Statistics Agency, and the Ministry of Finance using relevant keywords such as "Indonesia's inflation rate", "monetary policy", "inflation control", and "price stability". The data sources used include scientific journal articles, economic reports, government policy documents, and official publications of financial institutions published in the 2019-2024 period to ensure the data actuality and relevance of the analysis. The criteria for selecting sources include: (1) publications in Indonesian and English, (2) studies on inflation in Indonesia, (3) analysis of inflation control policies, and (4) statistical data from official institutions. Data analysis uses content analysis techniques which are carried out through several systematic stages. To ensure the validity of the findings, data triangulation was carried out by comparing information from various official sources and academic studies. The discussion of the research results is focused on three main aspects: (1) analysis of the latest inflation trends and rates, (2) factors affecting inflation, and (3) evaluation of the effectiveness of the government's inflation control policy..

RESULTS AND DISCUSSION

Inflation Development in Indonesia

As happens in developing countries in general, the inflation phenomenon in Indonesia is still one of the various macroeconomic "diseases" that are troubling the government, especially for the public. Indeed, towards the end of the New Order government (before the monetary crisis) the annual inflation rate can be suppressed to single digits, but in general it still contains vulnerabilities when viewed from the percentage of poor people who suffer from inflation. Especially after the continuation of the monetary crisis followed by the economic crisis, which became one of the causes of the fall of the New Order government, the inflation rate tended to increase rapidly (reaching more than 75% in 1998), and was exacerbated by the increasing percentage of the poor. So it can be said that although the inflation rate in Indonesia is included in the high category, by reviewing the percentage of the lower economic group that suffers from inflation is quite large, it can actually be said that inflation in Indonesia has entered the initial stage of hyperinflation.

Sources of Inflation in Indonesia

If examined further, there are several main factors that cause inflation in Indonesia, namely:

1. Money Supply

From a monetary point of view, the money supply is the main factor that is blamed as the cause of inflation in every country, including Indonesia. In Indonesia, the amount of money supply is more translated into the concept of narrow money (M1). This happens because there is still an assumption that quasi-money is only part of banking liquidity.

Since 1976, the percentage of currency in circulation (48.7%) has been smaller than the percentage of bills in circulation (51.3%). Thus, it indicates that there has been a modernization process in Indonesia's monetary sector. Also, it indicates that the more difficult the process of controlling the amount of money circulating in Indonesia, and the more widespread monetization in subsistence economic activities, as a result, gives a tendency to increase the inflation rate. According to data compiled in the World Bank Report, it shows that the average growth rate of the amount of money supply in Indonesia in the period 1980-1992 is relatively high when compared to other ASEAN countries. And, Indonesia's inflation rate is also relatively high compared to other ASEAN countries (except the Philippines). The increase in the money supply in Indonesia from the 1970s to the early 1980s was more due to the growth of credit liquidity and the government budget deficit. This growth could be a direct effect of Bank Indonesia's policy in the financial sector (especially in terms of reducing reserve requirements).

2. Government Budget Deficit

As is common in developing countries, the Indonesian government budget is actually experiencing a deficit, even though Indonesia adheres to the principle of a balanced budget. The deficit in this budget is often caused by things related to the structural rigidity of the Indonesian economy, which often creates a gap between the will and ability to build.

During the Old Order government, this budget deficit was often financed from within the country by printing new money, considering the policy orientation of economic development that was inward-looking policy, thus causing great inflationary pressure.

In the era of the New Order government, the need for the acceleration of economic growth that has been proclaimed since the First Long-Term Development caused the need for funds to carry out development was very large. Bearing in mind that the potential to mobilize development funds from the community (both from the community savings sector and tax revenue) in the country at that time was very limited (undeveloped), as well as the limited ability of the private sector to carry out development, caused the government to play a role as a development engine. This causes the state budget expenditure post to be larger than routine receipts. This means that the role of government expenditure in investment cannot be balanced with revenue, thus creating a gap between state expenditure and revenue, or it can be said that there has been a structural deficit in state finance.

At the time of the oil boom, in the 1970s, government revenue in the oil and gas sector increased rapidly, so that the amount of primary money also increased. This causes the government's ability to expand investment in the country is increasing. With the relatively slower growth rate of domestic production, due to the national production capacity that is still in a state of under-employment, the increase in government demand (investment) causes a reallocation of resources from the public to the government, as conceptualized in Keynes's analysis of inflation. This is what causes inflationary pressures.

However, since the change in the orientation of Indonesia's exports to non-oil and gas commodities, in line with the decline in petroleum prices in the export market (since 1982), the government's ability to finance national development has also decreased, so that the government can no longer maintain its position as the driver of development. With conditions like this, the role as the main driver of national development gradually shifts to the national private sector, thus the source of inflationary pressure shifts from the government to non-government (private).

Inflationary pressures in this period were more due to the increasing level of aggressiveness of the private sector in business expansion, which was supported by the development of the banking sector which was increasingly expansionary. With the condition of domestic capital resources that are still relatively limited, foreign loans that are non-commercial and commercial in nature are increasing. As a result, there is still a deficit in the state budget and balance of payments, one of the reasons is that the government still has to provide infrastructure and a superstructure for economic development whose needs are increasing. This role of the government is understandable because the ability of the national private sector in economic infrastructure development is still very limited.

3. Inflation Control in Indonesia by the Government

As is common in developing countries, inflation in Indonesia is relatively more caused by structural economic factors when compared to monetary policies. So it can be said that the influence of cosh push inflation is greater than demand pull inflation.

Indeed, in certain years periods, for example during the oil boom, inflationary pressure in Indonesia was caused by an increase in the money supply. However, this cannot ignore the structural economic influence, because in that period, there was still a gap between aggregate supply and aggregate demand, for example in the agricultural sub-sector, which could increase the degree of inflation.

In general, the Indonesian government uses a monetary approach more in an effort to control the general price level. The Indonesian government prefers to use monetary instruments as a tool to reduce inflation, for example with an open market mechanism or reserve requirement. But keep in mind, that the monetary approach is more used to overcome inflation in the short term, and it is very good to apply it to countries that have developed their economies, not to developing countries that still have structural bottlenecks. So, if this monetary approach is used as the main tool in controlling inflation in developing countries, it will not be able to solve the problem of inflation in developing countries which is generally characterized by long-term characteristics.

As happened in Indonesia during the monetary crisis which then became an economic crisis, inflation in Indonesia was triggered by an increase in the price of imported commodities (imported inflation) and swelling foreign debt due to the depreciation of the rupiah exchange rate against the US dollar and other foreign currencies. As a result, to control inflationary pressures, it is first necessary to stabilize the rupiah exchange rate against foreign exchange, especially the US dollar.

In stabilizing the exchange rate, the Indonesian government tends to play more monetary instruments through monetary authorities with a tight money policy which is expected to attract foreign exchange holders to invest their capital in Indonesia through deposits, as well as stabilize the general price level.

Tight money policy carried out by raising the SBI interest rate (through the open market mechanism) is very high, on the one hand it will be effective to reduce money supply, but on the other hand it will increase lending rates for the real sector. As a result, it will cause cost push inflation due to the interest rate-price spiral. If the interest rate (deposits) of banks is too high, so that productive funds (funds for production or business) in the community are also absorbed into banks, it will cause stagnation or even a decrease in national production output (called the Cavallo effect). Moreover, if there is a negative spread in the national banking world, it will not only cause damage to the real sector, but also damage to the national banking industry (monetary sector). If this policy continues to be carried out by the government in the medium or long term, there will be an economic depression, as a result of which the national economic structure will be damaged.

If this is the case, then it is better to control inflation not only through the concept of monetarists, but also by paying attention to the perspective of structuralists, who see more as the need to overcome existing structural obstacles.

Efforts to combat inflation

By being guided by the various obstacles in Indonesia's economic development that have been mentioned above, various efforts are needed for improvement, namely:

1. Increasing Food Supply

Increasing food supply can be done by paying more attention to development in the agricultural sector, especially the agri-food sub-sector. Modernization of land cultivation technology and methods, as well as an increase in the area of agricultural land need to be carried out to increase the rate of food production in order to create food self-sufficiency.

2. Reducing the State Budget Deficit

Perhaps in times of economic crisis reducing the state budget deficit cannot be implemented, but in the long term (after the crisis has passed) it is necessary. To reduce the budget deficit, the government must be able to increase its regular revenues, especially from the tax sector correctly and appropriately because this can also reduce excess demand. With the increasing domestic revenue, it is hoped that the government can reduce its dependence on foreign loans. Thus, the government budget will later reflect a relatively independent nature.

3. Increasing Foreign Exchange Reserves

First, it is necessary to improve the position of the foreign trade balance (current account), especially in services trade, so as not to continue the deficit. Thus, it is hoped that national foreign exchange reserves will be increased. Also, efforts are made to improve export performance, so that net exports must increase.

Second, efforts are made to reduce the dependence of domestic industries on foreign goods, for example by focusing more on development in the upstream industry that processes natural resources available in the country to be used as raw materials for downstream industries. In addition, it is also necessary to develop industries that are able to produce capital goods for domestic industries.

Third, changing the nature of the industry from one that is import substitution to one that is more export-promotional, so that there is efficiency in the price sector and increases net exports. Fourth, building an industry that is able to produce high added value and has a relatively high content of local components.

4. Improving and Improving Aggregate Supply-Side Capabilities

First, reduce the output *gap* by improving the quality of worker resources, modernizing production technology, and developing the national manufacturing industry so that its performance improves. Second, to facilitate the distribution of national goods, so that there is no gap between supply and demand at the regional (regional) level. Third, stabilizing interest rates and revitalizing the national banking system, the goal is to support the pace of the national industrialization process. Fourth, creating healthy conditions in the economy so that the market mechanism can run properly, and reducing or even eliminating all forms of factors that can cause market distortions. Fifth, carry out deregulation and debureaucracy programs in the real sector because often convoluted bureaucracy can cause a high cost economy.

By using two approaches (*monetaryist and structuralist*) on the right composition, it is hoped that inflation can be controlled not only in the short term, but also in the long term.

And, if there are serious efforts to minimize or even eliminate existing structural obstacles, it will result in an improvement in Indonesia's economic fundamentals.

CONCLUSION

The problem of inflation in Indonesia is not only a short-term phenomenon, but also a long-term phenomenon. In a sense, inflation in Indonesia is not solely caused by the government's failure to implement monetary policy measures, which are often carried out for the purpose of stabilizing fluctuations in the general price level in the short term, but also indicates that there are still structural obstacles in the Indonesian economy that have not been fully overcome. When referring to efforts to eliminate these structural obstacles, it is inevitable that we must pay close attention to economic development in the real sector. By making appropriate improvements in the real sector, perhaps even to the stage of the messo and micro economy, the fundamental stability of the Indonesian economy can be strengthened.

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