

## THE RELATIONSHIP BETWEEN POPULATION AGES 30-34 AND INFLATION OF THE GDP INFLATOR

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### ABSTRACT

This study aims to determine the relationship between the population aged 30-34 years and inflation as measured by the Gross Domestic Product (GDP) deflator. The method used in this study is the Granger Causality Test. The impact of this research can be seen from this study's results, which is men aged 30-34 years are very influential in the economy. Moreover, most workers in this world are men. The population aged 30-34 greatly influences economic growth and inflation. The male population aged 30-34 has more influence on economic growth and inflation than the female population aged 30-34. In the opposite direction, an increase in unemployment causes GDP to grow more slowly or even fall. Labor is one of the factors driving GDP growth. Increased population growth also has a positive effect on government spending. However, the inflation rate will also have a negative impact on government spending. A high inflation rate can worsen the value of a country's real GDP. If GDP increases, then a country's economic growth is improving. And if the average rate of economic growth in a country from year to year is higher, the income per capita of the community will also increase.

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### 1. INTRODUCTION

Countries with a more mature population will have a larger possible labor force in the future. To overcome the increase, the government must really take the right actions so that there will be no unemployment in the future. One thing that needs to be done is to provide a lot of job opportunities. The impact of the many jobs the government provides is to increase in routine government spending. These expenditures include wage and salary payments and capital and recurrent expenditures associated with population growth. Even though the government needs to spend more money, they still have to do this. because one of the parameters that measure the health of the economy is the low unemployment rate. An increase in unemployment will lead to a tendency for GDP to grow more slowly or even fall.

Population growth has a positive effect on government spending, but the inflation rate has a negative impact on government spending. Therefore, government spending influenced by population growth will also affect inflation, meaning GDP will also be affected. Population affects the increase in GDP. It can happen because, with the increasing population, government spending will also increase. Government spending plays an important role in economic growth. because the increasing population

growth will increase government spending on human capital development. The government can do the development through spending programs on education and health to create high-quality labor. Labor is one of the factors driving GDP growth.

The causal relationship between population growth and fixed income is complex and correlative to population growth and economic growth. Several empirical studies show that economic growth and development are positively related to population growth. Classical Malthusian theory argues that population growth lacks the limited supply of resources available per person, thereby reducing a country's growth potential in the long run. Among the positive views on this topic, research has shown that population growth increases a country's supply of labor and enlarges markets that offer opportunities to exploit economies of scale and scope.

On the other hand, several other works have argued that growth is detrimental to economic growth. Despite extensive research on the relationship between population growth and economic problems, there is no universal agreement as to whether population growth is positive, detrimental, or neutral for economic growth. The various research methods used for the interesting relationship between economic growth and population may explain the diversity of results. Different time frames, countries, control variables, or statistical methods used are the most likely and strongest factors that cause variability in results. Despite a variety of methods, no work has comprehensively explored fractional integration and cointegration and their potential to dismantle the long-term relationship between GDP and population. It is the main contribution of this work, the use of time series in the technique of analyzing long-term movements between populations and growth.

According to Hosen (2019), the correlation between GDP and population depends on income levels. From a theoretical perspective, our results suggest that a lower steady-rate of population growth could enhance its capacity to transform itself into human capital and keep up investment in capital to avoid diminishing returns, which in turn would support economic growth. In contrast, a relatively high rate of population growth may negatively affect economic growth because investment in capital and the expansion of knowledge find it more difficult to keep up with population growth, therefore leading to smaller amounts of capital per worker, diminishing returns, and therefore lower economic results.

Overcrowding is a hot international topic, given that an increase in the world's population leads to a rise in demand for water, food, shelter, and energy, especially in developing countries. Development countries are also facing a rising problem of population growth. Thus, these development countries need to emerge from this situation; otherwise, they cannot attain the required economic growth with the surge in population. Researchers believe that population growth is detrimental to economic growth. Population growth, in their opinion, reduces savings, increases dependency ratios, puts strain on health and education systems, and limits food supply. Population growth also induces environmental degradation. According to the general law of nature, Malthus states that population growth is faster than economic growth. However, problems with population growth and food supply can be addressed when income levels are sufficient to purchase sufficient food, given that prices provide sufficient incentives to production. The results also show that the share of working-age residents, compared with the total population, has failed to exhibit a strong impact on GDP per capita.

Money supply and output growth have a strong impact on inflation, with output growth influenced by one of the human resources, both male and female, but those with working age, namely 30-34, have a greater impact on inflation (Study Chen, 2006). The relationship between the lag in the money supply and inflation for the economy shows that inflation is affected by the money supply with at least five months of lag. Since the model is estimated from year to year, an increase in the money supply will affect inflation in that year. Chow and Shen (2005) study the money supply and output growth that hurt inflation significantly. For example, as is often discussed in monetary policy when an increase in the money supply brings upward pressure on inflation (Friedman, 1970). Inflation and

growth have an impact on future inflation, and as we know, the demand for money is affected by income.

In terms of inflation, all variables, including M2 money supply growth, inflation, and output growth, are highly interconnected. This effect can be explained by the aggregate demand-aggregate supply (AS-AD) model. When the economy has not yet reached its potential output, an increase in output leads to an increase in the price level, with the previous year's increase in the money supply M2 exerting upward pressure on inflation for the year. In the money market, an increase in the money supply will cause a decrease in the base rate. Interest rate cuts aid in increasing and increasing aggregate increases. An increase in aggregate demand increases prices, which increases inflation. In addition, this is in accordance with Friedman's findings stated that inflation is a monetary phenomenon that occurs when the amount of money increases faster than output (Friedman, 1970). This gave rise to fears that past inflation was not immediately adjusted and would continue to rise even in subsequent years (Long & Hien, 2021).

Inflation is not only influenced by the implementation of fiscal and monetary policies as well as internal macroeconomics in the economy but is also influenced by external factors. External factors can be currency exchange rates, world economic crises, political instability, population, etc. This can increase inflation. At the same time, forecasting scenarios and macroeconomic policies of choice. Through empirical evidence, this study shows that the relationship between the money supply, inflation, and output is still valid in the case of a transitional economy. In addition, research shows that the level of interaction between the money supply, inflation, and output varies under certain conditions.

In general, it can be expected that uncertainty about future inflation will distort the relative price mechanism and the efficient allocation of resources. With the existence of these two types of policymakers, the public will not be sure who will be in power, so that with low inflation, policy choices are certain from the public's view and uncertain with high inflation. Thus, a high inflation environment creates greater uncertainty with respect to the future direction of inflation. Policymakers will attempt to estimate inflation uncertainty through monetary policy policies to lower inflation. Lower indexation is an incentive for policymakers to create shock inflation that results in a higher average inflation rate. The distribution of inflation in each country is positively skewed with excessive kurtosis. The estimated conditional variance of each GARCH model is used as an anticipation for inflation uncertainty to perform a Granger causality test in an autoregressive vector bivariate.

## 2. RESEARCH METHODOLOGY

This study employs quantitative methods by collecting data samples. The sample data that we collect is from the Central Bureau of Statistics Indonesia, which is related to inflation caused by economic growth or male and female growth in domestic products over the last 20 years. We use application assistance, namely granger causality, to test our sample data. We choose the quantitative method because we can get results based on more accurate data. The use of granger causality can show a relationship between two things because we want to see whether the population of women and men aged 30-34 is related to inflation and growth in the domestic product.

In this study, we used two variables, namely the independent variable and the dependent variable. The independent variable, or variable X, is the variable that is the cause of the appearance of the dependent variable and will be suspected as a consequence. Meanwhile, the dependent variable, or Y variable, is the effect variable, which varies with the changes in the independent variables. Generally, it is a condition that we like to express and explain.

1. Independent Variables (Independent): Population age 30-34 (X)
2. Dependent Variable: Inflation (Y)

### 3. RESULT AND DISCUSSION

#### 1. Granger Causality Test Result

Based on the Granger causality hypothesis results in Table 1, we can conclude that the population of male 30-34 affects inflation, the GDP deflator has no effect on the population of male 30-34, and both variables have a one-way effect, namely male to inflation.

**Table 1**  
**Granger Causality Test**

Pairwise Granger Causality Test			
Date: 11/18/21 Time: 07:56			
Sample: 1990 2019			
Lags: 2			
Null Hypothesis	obs	F-Statistics	Prob.
INFLATION does not Granger Cause Male	28	0.11849	0.88888
MALE does not Granger Cause Inflation		1.38084	0.2714

Source: Primary Data, 2022

According to the Granger causality hypothesis, the population of male 30-34 has an effect on inflation, the gdp deflator significantly but inflation, and the gdp deflator does not affect the population of male 30-34. According to the Granger causality hypothesis, both variables have a one-way effect, namely male to inflation. Men at the age of 30-34 are of productive age, and at this age men are the main factor of economic growth because they are part of the contributors to state income and as economic actors, based on data, and also because women's journals have fewer employment opportunities than men, so this result proves that GDP is influenced by male workers aged 30-34 and is the biggest contributor to inflation.

### 4. CONCLUSION AND SUGGESTION

We conclude the relationship between variables through the journals we choose, which are as follows:

$$Y = X1 + X2 \tag{1}$$

- Y = Inflation
- X1 = Population Aged 30-43 years
- X2 = Country Income

Based on previous research we found that the male population 30-34 has an effect on inflation and the GDP deflator. The result showed, male population 30-34 has a strong effect on inflation, the male population 30-34, who is a workforce, is one of the factors contributing to GDP growth that has the potential to contribute to a country's output growth. If output increases and income increases, it will affect the money supply. Growth in the money supply and output has a statistically significant negative impact on inflation, for example, as it is often argued in monetary policy that an increase in the money supply brings upward pressure on inflation. From this research, we found a solution from previous studies regarding the effect of age and costs on inflation: population size can affect inflation due to population growth, which is accompanied by an increase in the amount of economic activity, especially if a country has a large population, and productive-age population.

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