Research Horizon

Vol. 2, no. 5, (2022), 501-510
Website: https://journal.lifescifi.com/index.php/RH/index

Effect of Inflation, Exports, and Employment on Economic Growth in Central Java

Queen Pamela[1,*], Lucia Rita Indrawati[1]

[1] *Universitas Tidar, Magelang, Indonesia*

[*] Corresponding author:

Email:pameladelyana17@gmail.com

Received : 29 July, 2022

Revised : 20 Sep, 2022

Accepted : Oct 5, 2022

Abstract

Economic growth is closely related to the community's welfare; therefore, economic growth is one of the government's priorities. There are many factors that can affect economic growth. This study analyzes the effect of inflation, exports, and employment on the economic growth of Central Java Province from 1994-2019. The error correction model (ECM) with E-views 10 software is used. The test results show that the inflation variable significantly affects economic growth in the long and short term. In contrast, export variables do not affect long-term and short-term economic growth. The variables of the working population also do not affect economic growth in the long and short term. This research uses secondary data. Secondary data has a weakness; namely, the results of the study may not be able to answer the question. In addition, research results are only oriented to the value and amount of data processing. The study suggests that the government build and develop regional exports with long-term economic growth. It is also recommended that future studies take other variables to add insight related to economic growth in Central Java.

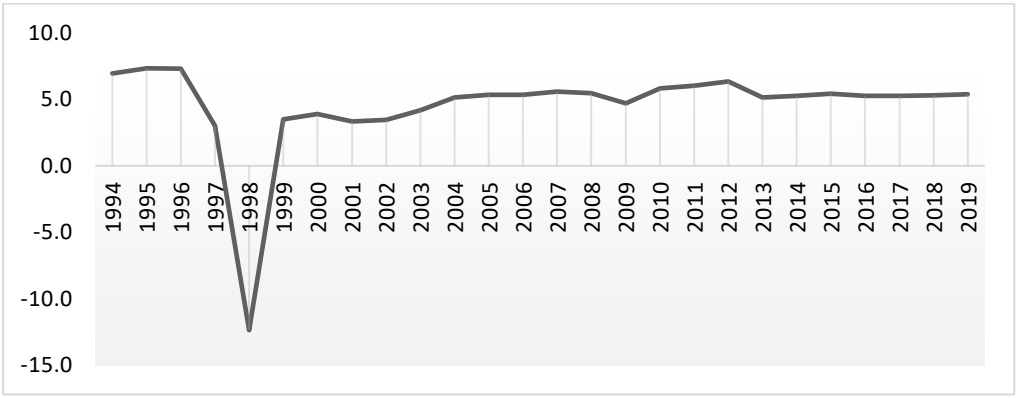
Keywords

inflation, exports, employment, economic growth.

1. Introductions

Economic growth reflects the level of welfare of the people of a region. Economic growth can be seen through the level of output produced. The high output level shows that people's production activities for goods and services are also high to increase real income. In developing

countries such as Indonesia, people's welfare is a priority. Economic growth is expected to bring a region to economic development. The purpose of economic development is to reduce economic problems such as unemployment, poverty, crime, and others (Šileika & Bekerytė, 2013; Pambayun, 2021).



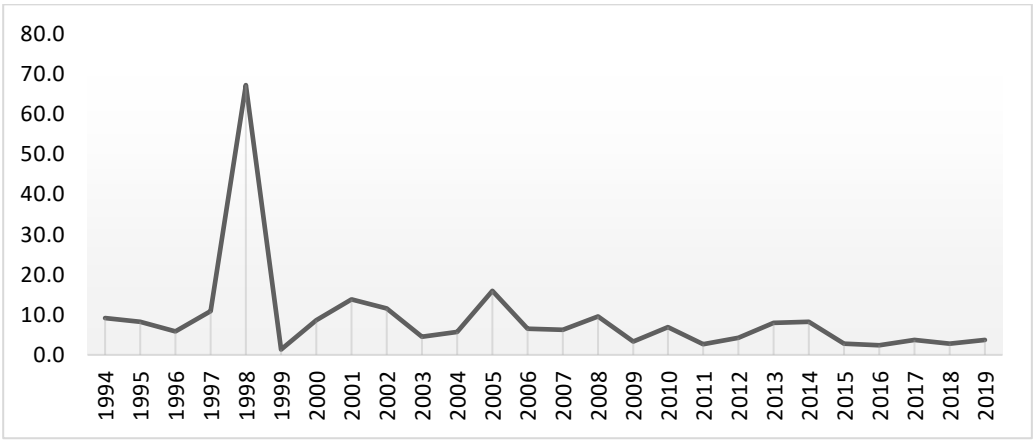
Source: BPS and BPS Central Java various years, processed

Figure 1. Economic Growth Rate of Central Java

In Figure 1 showed that the economic growth rate of Central Java from 1994 to 2019 tends to fluctuate. From 1994 to 2019, the Indonesian economy was recorded twice affected by crises that certainly had an impact on the economy of Central Java, namely in 1998 and 2008. From 1994 to 1998, the economic growth of Central Java continued to decline. The peak was in 1998, the economic growth rate of Central Java touched -12.4%. At that time, the inflation rate was so high that the prices of goods, in general, became expensive. The cause of the high inflation at that time was the convertible rupiah value because Indonesia adhered to a free foreign exchange system. Many companies are unable to pay off debts and interest. Then entered the reform era, namely in 1999, the economy of Central Java gradually improved. Economic growth rose to 3% and tended to be stable until 2007. In 2008 the economic growth rate again decreased to 5.5%. This time, the decline in economic growth was also accompanied by high inflation rates. The cause is an imbalance between the financial sector and the production sector. It shows that inflation can influence economic growth as a macroeconomic phenomenon. On the other hand, economic growth can be affected by inflation as a macroeconomic phenomenon (Chowdhury, 2002; Hartini & Utomo, 2017; Salim et al., 2021).

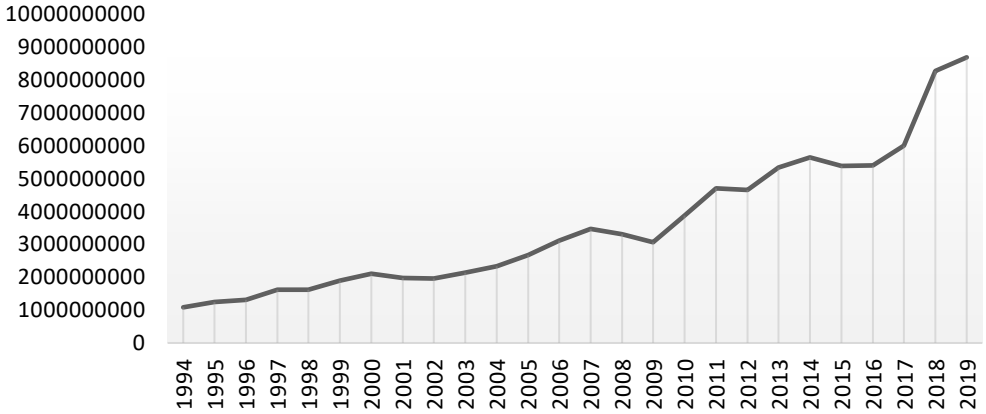
Figure 2 showed that the inflation rate of Central Java from 1994 to 2019 has fluctuated. According to Nopirin (1987), based on the basis of the magnitude of inflation can be divided into three categories, namely creeping inflation, medium inflation (galloping inflation), and high inflation (hyperinflation). However, there is no definite standard in its division because each country has its own inflation target. Generally, the safe limit of inflation is no more than 10%. In Indonesia, the inflation target is determined by Bank Indonesia as the central bank. Central Java Province was recorded four times experiencing galloping inflation, namely in 1997 (10.9%), 2001 (13.8%), 2002 (11.5%), and 2005 (16%). Meanwhile, hyperinflation occurred once, namely in 1998 (67.2%). Sustainable economic growth can be fulfilled if the inflation rate is well controlled.

Inflation stability can be achieved with appropriate monetary policy and fiscal policy. In addition, increasing production output or output and reducing the number of imports can also maintain the inflation rate (Hamilton-Hart & Schulze, 2016; Astuti & Ayuningtyas, 2018).



Source: BPS and BPS Central Java various years, processed

Figure 2. Central Java Inflation Rate

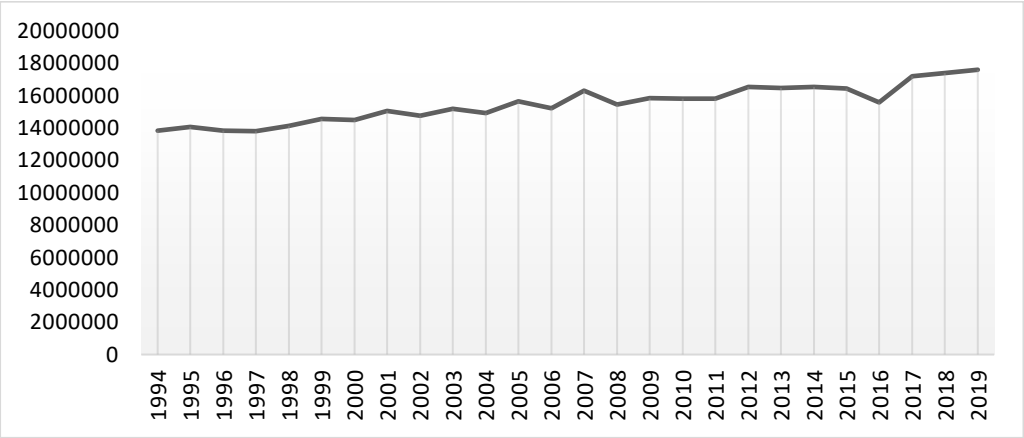


Source: BPS and BPS Central Java various years, processed

Figure 3. Total Exports of Central Java

Figure 3 showed that the level of exports in Central Java from 1994 to 2019 tends to experience an increasing trend. However, in 2009 the level of exports decreased sharply to 3.1 billion USD. The situation at that time was the impact of the global crisis in 2008, where many small industries went out of business while banks actually reduced their credit facilities. The quantity of exports that are higher than imports is a condition of the balance of international trade balance. The community's welfare can be guaranteed if foreign exchange income continues to

grow (Susanto, 2013; Priyono & Wirathi, 2016). Therefore, productivity needs to be constantly encouraged. One way is that the government can provide adequate employment to accommodate the workforce. The more labor is absorbed, the less the unemployment rate will be (Asbiantari et al., 2016; Hasmarini & Murtiningsih, 2017).



Source: BPS and BPS Central Java various years, processed

Figure 4. Total Working Population of Central Java

Figure 4 showed the number of the working population, which reflects the level of employment in Central Java. From 1994 to 2019, the number of working people in Central Java tended to experience an increasing trend. The total working population in 1994 was 13,850,929, and in 2019 it was 17,602,917, an increase of about 21%. The increasing working population is expected to increase production output so that real incomes also increase and, in the long run, impact economic growth.

2. Research Methodology

This research uses a quantitative approach with time series data from 1994 to 2019. The secondary data is obtained through the website of the Central Statistics Agency (BPS) and then processed using E-views 10 software. This study focuses on explaining the relationship between inflation, export, and population variables working as free variables to economic growth variables as bound variables in Central Java Province. The data analysis technique used in this study is multiple linear regression analysis with the Error Correction Model (ECM) model (Strachan & Inder, 2004). The formulation of ECM Engle-Granger is as follows:

$$Y = f(INFLATION, EXPORT, WP)$$

Description :
Y = Economic Growth
INFLATION = Inflation Rate
EXPORT = Export

WP = Working Population (Employment)

Meanwhile, long-term model equation is as follows:

$$PE_t = \beta 0 + \beta 1 \text{INFLATION}_t + \beta 2 \text{EXPORT}_t + \beta 3 \text{WP}_t + \varepsilon_t$$

Lastly, short-term model equation is shown as follow:

$$D(PE_t) = \beta 0 + \beta 1 D(\text{INFLATION}_t) + \beta 2 \text{D}(\text{EXPORT}_t) + \beta 3 \text{D}(\text{WP}_t) + \beta 4 \text{RES}_{t-1}$$

Description :
D(PE) = Economic Growth
D(INFLATION) = Inflation Rate
D(EXPORT) = Export
D(PB) = Working Population (Employment)
RES = Error Correction Term

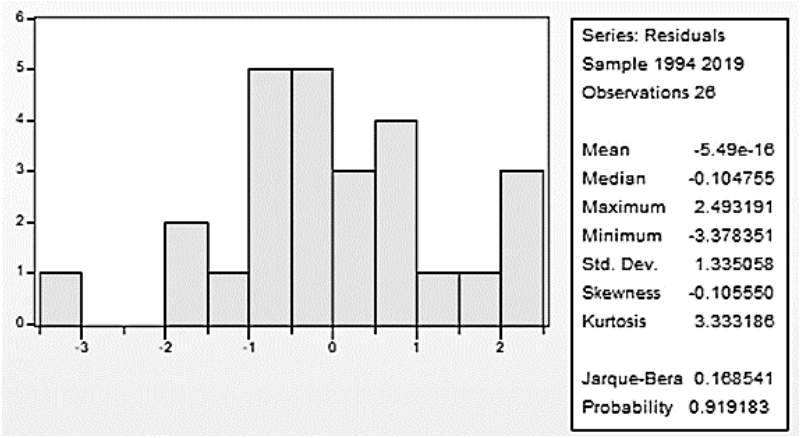
The variables used in this study are economic growth (PE) as a bound variable and inflation (INFLATION), exports (EXPORTS), and employment (PB) as free variables. The definition of the operation of each variable used is as follows. According to Sukirno (2011), economic growth explains or measures the achievements of the development of an economic thing. The high productivity of goods and services will greatly affect economic growth so that it is closely related to the welfare of the community. Data in the form of a percent (%).

According to Nopirin (1987), inflation is the process of continuously increasing the general prices of goods. This does not mean that the prices of a wide variety of goods are rising by the same percentage. Perhaps the increase may not coincide. Data in the form of a percent (%).

According to Ismadiyanti & Ayuningtyas (2018), export is the process of selling goods or commodities from one country to another. This study used the total value of oil and gas and non-oil and gas exports. Data in US Dollars. According to Kuncoro (2002), employment is the number of jobs that have been filled, reflected in a large number of working populations. Data in the number of souls.

3. Results

The first test is to examine classical assumptions of normality. Figure 5 showed that the probability value of Jacue-fallow is 0. 919183 >5% alpha. This means that the data is distributed normally or there is no normality problem.



Source: *Eviews* 10, 2022 Data Processing Results

Figure 5. the probability value

Table 1 showed that the variance inflation factors (VIF) value of the inflation, export, and working population variables is less than 10. This means that there is no problem with multicollinearity.

Table 1. The variance inflation factors (VIF)

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	84.80902	1088.673	NA
INFLATION	0.000597	1.757995	1.138058
EXPORT	1.24E-19	26.85466	6.698833
WP	4.42E-13	1367.712	6.846031

Source: Eviews 10, 2022 Data Processing Results

To examine heteroskedasticity, Table 2 showed that the probability value of R-squared is 0.0854, greater than alpha 5%. This means that the regression model is homoscedasticity or there is no heteroskedasticity problem

Table 2. Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	2.500708	Prob. F(3,22)	0.0860
Obs*R-squared	6.611566	Prob. Chi-Square(3)	0.0854
Scaled explained SS	5.522331	Prob. Chi-Square(3)	0.1373

Source: Eviews 10, 2022 Data Processing Results

Furthermore, to examine autocorrelation, Table 3 showed that the probability value of Chi-square is 0.2464, greater than alpha 5%. This means that there is no autocorrelation problem

Table 3. Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.207670	Prob. F(2,20)	0.3198
Obs*R-squared	2.801601	Prob. Chi-Square(2)	0.2464

Source: Eviews 10, 2022 Data Processing Results

To see the effect of inflation, exports, and employment on economic growth, an analysis with the Error Correction Model (ECM) model is used with the following steps. The analysis is conducted by examining data time series. The first thing that needs to be done is to test the stationarity of the data using the Augmented Dickey-Fuller Unit Root Test. Table 4 showed that the probability of variables of economic growth, inflation, exports, and working population is < alpha 5% and stationary at the level of 1st difference.

Table 4. Level 1st Difference Stationaryity Test Results

Series	Prob.	Lag	Max Lag	Obs
D(PE)	0.0000	0	4	24
D(INFLASI)	0.0000	1	4	23
D(EKSPOR)	0.0063	1	4	23
D(PB)	0.0006	4	4	20

Source : Eviews 10, 2022 Data Processing Results

Next, as to examine Cointegration Test, Table 5 shows that the probability value of ADF at the level is 0.0101, smaller than alpha 5%, and the t-Statistic value is -3.717572. This means that the variables used in this study are mutually integrated so that the Error Correction Model (ECM) model can be done.

Based on the ECM test, Table 6 showed that inflation has a negative and significant effect on economic growth in the long term. This can be seen in the negative t-statistical value (-11.36558) and the probability value (0.0000) < 5%. The short-term test results also show that inflation has a negative and significant effect on economic growth. It is indicated by a negative t-statistical value (-18.73681) and a probability value (0.0000) < 5% (Table 7).

Table 5. Unit Root Test Results against Long-Term Residual Equations at Level Levels

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.717572	0.0101
Test critical values:	1% level	-3.724070	
	5% level	-2.986225	
	10% level	-2.632604	

Source: Eviews 10, 2022 Data Processing Results

$$PE_t = 5.118349 - 0.277639\text{INFL}_t - 2.36\text{E}-10\text{EXPORT}_t + 1.76\text{E}07\text{WP}_t + \varepsilon_t$$

Table 6. Long-Term ECM Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.118349	9.209182	0.555788	0.5840
INFLATION	-0.277639	0.024428	-11.36558	0.0000
EXPORT	-2.36E-10	3.51E-10	-0.671899	0.5086
WP	1.76E-07	6.65E-07	0.265044	0.7934
R-squared	0.864766	Mean dependent var		4.507692
Adjusted R-squared	0.846325	S.D. dependent var		3.630418
F-statistic	46.89350	Durbin-Watson stat		1.258532
Prob(F-statistic)	0.000000			

Source: Eviews 10, 2022 Data Processing Results

$$D(PE_t) = -0.175534 - 0.247461D(\text{INFLATION}_t) + 1.02\text{E} - 10\text{D}(\text{EXPORT}_t) + 1.32\text{E} - 10\text{D}(\text{WP}_t) - 0.630579\ \text{RES}_{t-1}$$

Table 3 showed that exports have a negative and insignificant effect on economic growth in the long term. This can be seen in the negative t-statistical value (-0.671899) and the probability value (0.5086) > 5%. Meanwhile, in the short-term testing, exports have a positive and insignificant effect on economic growth. It is indicated by a positive t-statistical value (0.213522) and a probability value (0.8331) > 5%.

The results also showed that the working population has a positive and insignificant effect on economic growth in the long term. This can be seen in the positive t-statistical value (0.265044) and the probability value (0.7934) > 5%. Meanwhile, in short-term testing as shown in Table 7, the working population also has a positive and insignificant effect on economic growth. This is indicated by a positive t-statistical value (0.296161) and a probability value (0.7702) > 5%.

Table 7. Short-Term ECM Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.175534	0.278410	-0.630487	0.5355
D(INFLASI)	-0.247461	0.013207	-18.73681	0.0000
D(EKSPOR)	1.02E-10	4.77E-10	0.213522	0.8331
D(PB)	1.32E-07	4.44E-07	0.296161	0.7702
RES(-1)	-0.630579	0.179093	-3.520950	0.0021
R-squared	0.946771	Mean dependent var		-0.064000
Adjusted R-squared	0.936126	S.D. dependent var		4.628074
F-statistic	88.93431	Durbin-Watson stat		1.845906
Prob(F-statistic)	0.000000			

Source: Eviews 10, 2022 Data Processing Results

4. Conclusions

Based on research that has been carried out with the Error Correction Model (ECM) model, the following results were obtained. The findings showed that inflation had a negative and significant effect on economic growth both in the long and short term. The variable of export had a negative and insignificant effect on economic growth in the long term. At the same time, export variable had a positive and insignificant effect on economic growth in the short term. The variable of employment had a positive and insignificant effect on economic growth in the long and short term.

This research uses secondary data. Secondary data has a weakness namely, the results of the study may not be able to answer the question. In addition, research results are only oriented to the value and amount of data processing results which is conducted. The study suggests that the government build and develop regional exports that have long-term economic growth. It is also recommended that future studies take other variables to add insight related to economic growth in Central Java.

References

Asbiantari, D. R., Hutagaol, M. P., & Asmara, A. (2016). Pengaruh ekspor terhadap pertumbuhan ekonomi Indonesia. *Jurnal Ekonomi dan Kebijakan Pembangunan*, *5*(2), 10-31.

Astuti, I. P., & Ayuningtyas, F. J. (2018). Pengaruh ekspor dan impor terhadap pertumbuhan ekonomi di Indonesia. *Jurnal Ekonomi & Studi Pembangunan*, *19*(1), 1-10.

Chowdhury, A. (2002). Does inflation affect economic growth? The relevance of the debate for Indonesia. *Journal of the Asia Pacific Economy*, *7*(1), 20-34.

Hamilton-Hart, N., & Schulze, G. G. (2016). Taxing times in Indonesia: the challenge of restoring competitiveness and the search for fiscal space. *Bulletin of Indonesian Economic Studies*, *52*(3), 265-295.

Hartini, D., & Utomo, Y. P. (2017). Analisis Pengaruh Inflasi Terhadap Pertumbuhan Ekonomi di Indonesia dengan Metode Final Prediction Error. *Jurnal Ekonomi Pembangunan: Kajian Masalah Ekonomi dan Pembangunan*, *5*(1), 42-49.

Hasmarini, M. I., & Murtiningsih, D. (2017). Analisis Kausalitas Ekspor Non Migas Dengan Pertumbuhan Ekonomi Menggunakan Metode Final Prediction Error. *Jurnal Ekonomi Pembangunan: Kajian Masalah Ekonomi dan Pembangunan*, *4*(2), 147-161.

Ismadiyanti, A. P., & Ayuningtyas, J. F. (2018). Pengaruh Ekspor dan Impor Terhadap Pertumbuhan Ekonomi di Indonesia. *Jurnal*, 8-9.

Kuncoro, A. (2002). Corruption and economic growth in Indonesia. *Economics and Finance in Indonesia*, *50*, 79-112.

Nopirin, D. (1987). *Ekonomi Moneter II*. Jakarta: Karunia.

Pambayun, D. (2021). Indicators of the association of Unemployment in Indonesia with the Level of Employment Opportunity, GDP, and SER. *Research Horizon*, *1*(5), 189-206.

Priyono, D., & Wirathi, I. G. A. P. (2016). Analisis Hubungan Ekspor, Pertumbuhan Ekonomi, dan Kesempatan Kerja di Provinsi Bali: Pengujian Vector Auto Regression. *E-Jurnal Ekonomi Pembangunan Universitas Udayana*, *5*(12), 165288.

Salim, A., Fadilla, F., & Purnamasari, A. (2021). Pengaruh Inflasi Terhadap Pertumbuhan Ekonomi Indonesia. *Ekonomica Sharia: Jurnal Pemikiran dan Pengembangan Ekonomi Syariah*, *7*(1), 17-28.

Šileika, A., & Bekerytė, J. (2013). Theoretical issues of relationship between unemployment, poverty and crime in sustainable development. *Journal of Security and Sustainability Issues*, *2*, 59-70.

Sukirno, S. (2011). *Ekonomi Makro teori pengantar*, ed III. Jakarta: PT Raja Grafindo Persada.

Susanto, A. B. (2013). Pengaruh Indeks Pembangunan Manusia (IPM) dan Inflasi Terhadap Pertumbuhan Ekonomi di Kabupaten Lamongan. *Jurnal Pendidikan Ekonomi (JUPE)*, *1*(3).

Strachan, R. W., & Inder, B. (2004). Bayesian analysis of the error correction model. *Journal of Econometrics*, *123*(2), 307-325.