



Analysis of the effect of inflation, economic growth, and investment on unemployment in the province of Central Java

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ABSTRACT

The object of this research was carried out in all regencies/cities in Central Java in the 2008-2010 period. The data used in this study is secondary data obtained from the Central Bureau of Statistics and the Regional Investment Board of Central Java Province. The data analysis technique used is panel data regression analysis and path analysis using the help of the Eviwes 6.0 computer program using panel data (time series and cross section). Based on the results of data analysis, it shows that 1) the inflation variable has a negative and significant effect on unemployment, namely 0.031815, 2) the economic growth variable has a negative and significant effect on unemployment, namely 0.116828, 3) the investment variable has a negative and significant effect on unemployment, namely 0.208683. Based on the results of the research above, it can be concluded that there is an influence between inflation, economic growth, and investment on unemployment in Central Java Province. The suggestion in this study is that as an effort to overcome unemployment, the government is expected to be able to maintain inflation rate stability with fiscal policy in the form of government spending on sectors that have the potential to absorb labor and increase quality economic growth. In addition, it is hoped that the Government can attract investors by creating a conducive investment climate and facilitating the licensing process so that jobs will increase and be able to absorb unemployment.

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1. INTRODUCTION

Economic development is the process of economic growth and the process of increasing economic and social structure, including reducing the problems of unemployment and poverty. Unemployment occurs because the growth in the labor force is higher than the growth in existing jobs. Unemployment is an important indicator in the field of employment, where the unemployment rate can measure the extent to which the workforce is able to be absorbed by existing jobs. High unemployment can be a major source of poverty, can trigger high crime and can hinder long-term development.

Looking at Figure 1.1, it can be seen that the unemployment rate in Central Java Province in 2008 was 1,227,308 people. In 2009 it increased to 1,252,267 people. Whereas in 2010 the unemployment rate in Central Java Province decreased to 1,046,883 people. The following is the unemployment rate in Central Java Province from 2008 to 2010.

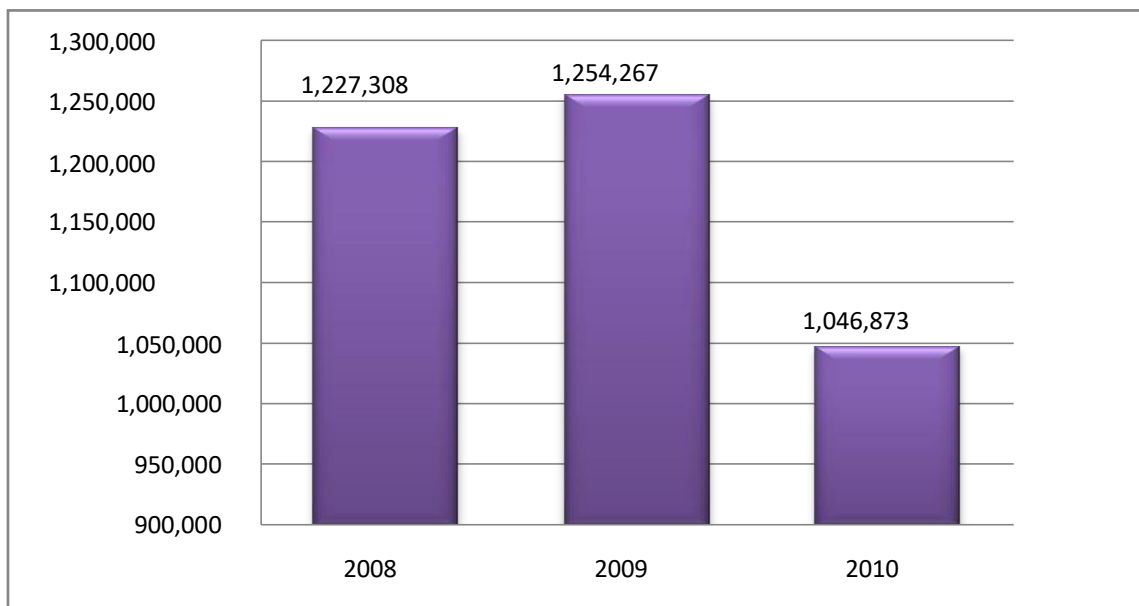


Figure 1.1 Graph of Unemployment Rate in Central Java Province 2008-2010 (Soul)

The high unemployment rate is usually caused by low growth in available jobs or high recruitment criteria for existing job opportunities. Currently, many companies are looking for workers with a minimum education diploma or bachelor's degree. This situation makes some residents feel inadequate and do not have the opportunity to enter the world of work. The higher number of population is also one of the factors in the increasing number of unemployed in Central Java Province.

The solution that can be done to reduce unemployment is to create economic growth in the regions. High economic growth will have an impact on employment, which means that the number of unemployed will decrease. Conversely, if economic growth decreases, unemployment will increase. Economic growth is calculated based on changes in the amount of Gross Regional Domestic Product.

Table 1. GRDP at constant basic prices in Central Java Province in 2008-2010

Year	GRDP at constant prices
2007	159,110,253.77
2008	168,034,483.29
2009	176,673,456.57
2010	186,995,480.65

Table 1.1 shows the movement of GRDP values in Central Java and the rate of economic growth. The GRDP value has increased every year from 2007 of 159,110,253.77 million rupiahs to 168,034,483.29 million rupiahs in 2008. In 2009 Central Java's GRDP increased to 176,673,456.57 million rupiahs and in 2010 increased again to 186,995,480.65 million rupiah.

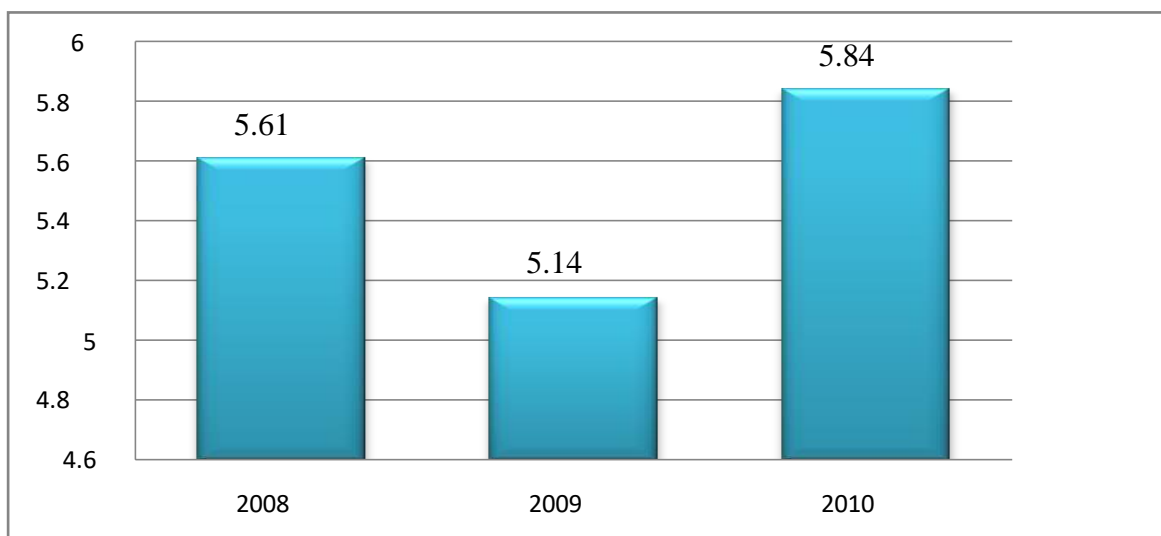


Figure 1.2 Graph of Central Java Province's Economic Growth Rate in 2008-2010 (%)

In contrast to the amount of GRDP which always increases, the rate of economic growth in Central Java province, as seen in the figure, fluctuates. In 2008 the economic growth rate was 5.61%. In 2009 it decreased to 5.14%. However, in 2010 economic growth rose to 5.84%.

When talking about unemployment, inflation also has an important role in changes in the number of unemployed. Inflation is an increase in prices in general. Inflation that occurs due to demand pull can indirectly reduce the number of unemployed. In accordance with the law of demand, if the demand for an item increases, the price of the item itself will increase due to the limited availability of the item. Under these conditions, producers will try to meet market demand by increasing their production capacity. This increase in production capacity has an impact on employment.

Investment is the input of an economic activity which will later affect the amount of employment. The higher the investment, the greater the impact on low unemployment. Conversely, if the amount of investment decreases, the unemployment rate will increase. In addition to affecting the number of unemployed, investment also plays a role in increasing the rate of economic growth.

2. RESEARCH METHOD

The data used in this research is panel data (pooled data), which is a combination of time series data and cross section data. The data used are data from 35 districts/cities in Central Java Province from 2008 to 2010. This study uses secondary data obtained from various sources, namely the Indonesian Statistics book, Central Java in Figures, Consumer Price Index and Central Java Inflation, and related agencies such as the Regional Investment Board of Central Java Province.

The data collection method used is the documentation method. The author collects data from data published by BPS and the Investment Board of Central Java Province from various years of publication. These publications include the book Statistics Indonesia, Central Java in Figures, Consumer Price Index and Inflation, and data from the Investment Board of Central Java Province.

The analytical method used in this study is a quantitative analysis method. Quantitative analysis is used to analyze quantitative information (data that can be measured, tested and transformed in the form of equations, tables and so on). To find out the influence of the independent variable on the dependent variable, this study uses the Multiple Regression model with the General Least Square (GLS) method and path analysis (Path Analysis) which aims to find out how the independent variables influence the variables dependent either directly or indirectly.

3. RESULTS AND DISCUSSIONS

Research result

1. Demographic and Employment Conditions in Central Java Province

Central Java Province is a province that has a fairly high population density compared to other provinces. In 2010 the population of Central Java Province reached 32,382,657 people which occupies an area of 32,544.12 km². The population has decreased compared to the population in 2009 of 32,864,563 people, this is one proof that the government's Family Planning program has succeeded in reducing population growth. The following is the density level in Central Java Province.

Table 1. Population Density of Central Java 2008-2010

Year	WideArea (km ²)	Total population	Population Density per km ²
2008	32,544.12	32,626,390	1003
2009	32,544.12	32,864,563	1010
2010	32,544.12	32,382,657	995

The highest population density occurred in 2009 reaching 1010 people/Km² and the lowest population density was 995 people/Km² in 2010. A large population will increase the number of workers that can be utilized in development. The following is the condition of employment in Central Java Province from 2008 to 2010.

Table 2. Labor Force, Employment Opportunities, and Total Unemployment in Central Java Province, 2008-2010

Year	Work Force	Employment Opportunity	Unemployment
2008	16,690,966	15,463,658	1,227,308
2009	17,087,000	15,835,382	1,252,267
2010	16,856,330	15,809,447	1,046,883

The population is divided into two, namely the population of working age and non-working age. The working age population is the population aged 15-64 years and is distinguished as the labor force and not the labor force. The total workforce in Central Java Province in 2010 amounted to 16,856,330 people, this number was lower than in 2009 of 17,087,649 people. The decline in the number of labor force was followed by a decrease in employment opportunities and the number of unemployed. This happened due to a decrease in the population of Central Java Province as a result of the success of the government's Family Planning (KB) program.

A high labor force does not guarantee that the available workforce has expertise or skills. Only a portion of the workforce has a minimum education of senior high school (SMA), there are still many residents who are entering working age but only have minimal education. In 2010, there were only 3,642,296 people with senior high school education, while the population with only elementary school (SD) education was 9,173,558 people. The following is a table of the highest education possessed by the working age population in Central Java Province.

Table 3. Population Aged 15 and Over by Highest Education in Central Java, 2010

Year	Graduated from elementary school	Middle school graduate	Graduated from high school	Total
2008	9,367,374	2,798,160	3,298,124	15,463,658
2009	9,457,640	2,893,843	3,483,899	15,835,382
2010	9,173,558	2,993,593	3,642,296	15,809,447

Table 3. It can be seen that the education level of the workforce in Central Java Province has improved in 2010. The population with the last elementary school education has decreased, the last junior and senior high school education has increased. Currently education is still an important factor in getting a job. There are still many companies who are looking for workers with high educational criteria such as State-Owned Public Agencies and private companies. The last education also

determines the amount of wages from workers, the higher the last education, the higher the wages received as remuneration.

2. Unemployment

Central Java Province is the province with the third largest population density after West Java and East Java Provinces. One of the problems that arise due to the high population is unemployment. Unemployment is a condition where someone belonging to the workforce wants to get a job but they have not been able to get the job (Sukirno, 1994: 294). Unemployment occurs because population growth is higher than the growth in existing employment. One of the factors suspected to be the cause of this labor market imbalance is a mismatch of wants or needs between the labor market and labor users. In addition, the factors that may be the cause of high unemployment are inflation,

Table 4. Unemployment Rate in Central Java Province by Regency/City 2008-2010 (people)

No	Regency/City	2008	2009	2010	Average
1	Cilacap Regency	75,495	89,175	74,298	79,656
2	Banyumas Regency	57,620	59,582	58,403	58,535
3	Purbalingga Regency	29,058	19,638	16,653	21,783
4	Banjarnegara District	22,464	22,993	14,457	19,971
5	Kebumen Regency	35,304	49,241	46,876	43,807
6	Purworejo Regency	15,364	17,748	11,994	15,035
7	Wonosobo Regency	21,290	14,292	16,066	17,216
8	Magelang Regency	31,602	31,253	19,245	27,367
9	Boyolali Regency	31,656	29,899	20,594	27,383
10	Klaten Regency	44,454	39,271	25,877	36,534
11	Sukoharjo Regency	36,379	37,359	32,000	35,246
12	Wonogiri Regency	31,945	29,159	24,407	28,504
13	Karanganyar regency	25,700	37,608	30,321	31,210
14	Sragen Regency	26,870	28,624	19,777	25,090
15	Grobogan Regency	43,657	48,610	33,179	41,815
16	Blora Regency	26,166	34,361	25,643	28,723
17	Rembang Regency	17,571	18,058	15,653	17,094
18	Pati Regency	59,012	49,094	38,604	48,903
19	Holy District	27.205	32.306	26,152	28,554
20	Jepara Regency	30,426	24,562	25,648	26,879
21	Demak Regency	35,569	30,022	29,696	31,762
22	Semarang Regency	37,842	40,267	33,499	37,203
23	Temanggung Regency	18,941	16,514	14,797	16,751
24	Kendal County	32,929	29,255	26,395	29,526
25	Batang Regency	31,574	24,733	24,486	26,931
26	Pekalongan Regency	31,380	17,993	16,912	22,095
27	Malang Regency	60,483	79,372	66,630	68,828
28	Tegal Regency	64,281	60,152	47,303	57,245
29	Brebes Regency	65,357	79,116	72,659	72,377
30	City of Magelang	7,639	9,863	8,226	8,576
31	Surakarta City	26,574	28,778	22,575	25,976
32	Salatiga City	9,816	9,674	8,345	9,278

33	Semarang city	85,710	83,963	71,499	80,391
34	Pekalongan city	13,818	12,564	10,165	12,182
35	Tegal City	16,157	19,168	17,839	17,721
Central Java		1,227,308	1,254,267	1,046,873	1,176,149

3. Inflation

Inflation is a process of increasing prevailing prices in an economy. While the inflation rate is a presentation of the increase in the prices of goods in a certain period of time (Sukirno, 1994: 302). In Indonesia, inflation often occurs due to Cost Push Inflation or inflation that occurs due to production costs as a result of an increase in production raw materials. However, at certain times, such as Christmas and Eid al-Fitr in Indonesia, inflation occurs due to Demand Pull Inflation due to high aggregate demand.

Table 5. Comparison of Unemployment and Inflation in Central Java Province in 2008-2010

Year	Unemployment number	Inflation Rate
2008	1,227,308	9.55
2009	1,254,267	3.32
2010	1,046,873	6.88

From the above table it can be seen that in 2008 the number of unemployed people in Central Java was 1,227,308 people with an inflation rate of 9.55%. The high unemployment and inflation in 2008 were triggered by the government's policy in May, namely the increase in fuel prices. In 2009 there was an increase in the number of unemployed to 1,254,267 people but inflation decreased to 3.32%. In 2010 the unemployment rate fell to 1,046,873 people but inflation increased to 6.88%. From the table above it can be concluded that there is a negative relationship between unemployment and inflation.

High inflation in 2008 also occurred in regencies/cities in Central Java Province. The increase in fuel prices decided by the government made the prices of basic necessities soar, especially food, and resulted in rising prices in general. In 2009 the government adopted a policy The reduction in fuel prices was to stabilize the economy and this measure was successful. The district/city inflation rate has decreased. The following table shows the inflation rate in Central Java Province by district/city in 2008-2010.

4. Economic growth

Economic growth is an increase in output in the long run which is measured by taking into account the growth of the Gross Regional Domestic Product (GDP) from year to year based on constant 2000 prices. Economic growth can be used as an indicator of the welfare of the population of an area, the higher the economic growth, the real sectors in in this area has also increased. Good economic growth is economic growth that is able to absorb labor and reduce poverty.

Table 6. Economic Growth Rate in Central Java Province by Regency/City 2008-2010 (percent)

No	Regency/City	2008	2009	2010	Average
1	Cilacap Regency	6.07	1.53	4.43	4.01
2	Banyumas Regency	5.38	5.49	5.77	5.55
3	Purbalingga Regency	5.30	5.89	5.67	5.62
4	Banjarnegara District	4.98	5.11	4.89	4.99
5	Kebumen Regency	5.80	3.94	4.15	4.63
6	Purworejo Regency	5.62	4.96	5.01	5.20
7	Wonosobo Regency	3.69	4.02	4.29	4.00

8	Magelang Regency	4.99	4.72	4.51	4.74
9	Boyolali Regency	4.04	5.16	3.60	4.27
10	Klaten Regency	3.93	4.24	1.73	3.30
11	Sukoharjo Regency	4.84	4.76	4.65	4.75
12	Wonogiri Regency	4.27	4.73	3.14	4.05
13	Karanganyar regency	5.30	5.54	5.42	5.42
14	Sragen Regency	5.69	6.01	6.06	5.92
15	Grobogan Regency	5.33	5.03	5.05	5.14
16	Blora Regency	5.80	4.97	5.04	5.27
17	Rembang Regency	4.67	4.46	4.45	4.53
18	Pati Regency	4.94	4.69	5.11	4.91
19	Holy District	3.92	3.95	4.16	4.01
20	Jepara Regency	4.49	5.02	4.52	4.68
21	Demak Regency	4.11	4.08	4.12	4.10
22	Semarang Regency	4.26	4.37	4.90	4.51
23	Temanggung Regency	3.54	4.09	4.31	3.98
24	Kendal County	4.26	5.55	5.95	5.25
25	Batang Regency	3.67	3.72	4.97	4.12
26	Pekalongan Regency	4.78	4.30	4.27	4.45
27	Malang Regency	4.99	4.78	4.94	4.90
28	Tegal Regency	5.32	5.29	4.83	5.15
29	Brebes Regency	4.81	4.99	4.94	4.91
30	City of Magelang	5.05	5.11	6.12	5.43
31	Surakarta City	5.69	5.90	5.94	5.84
32	Salatiga City	4.98	4.48	5.01	4.82
33	Semarang city	5.59	5.34	5.87	5.60
34	Pekalongan city	3.73	4.78	5.51	4.67
35	Tegal City	5.15	5.02	4.61	4.93

5. Investment

Investment is an investment activity carried out by domestic and foreign investors. Investment has an important role in driving the economy of a region. The higher an investment, the expected output will also increase. High output will later create new jobs.

Table 7. Value of Investment Realization in Central Java Province by Regency/City in 2008-2010 (millions of rupiah)

No.	Regency/City	2008	2009	2010	Average
1	Cilacap Regency	79,866	126,213	195,958	134,012.33
2	Banyumas Regency	222,285	376,318	463,309	353,970.67
3	Purbalingga Regency	55,189	82,139	79,253	72,193.67
4	Banjarnegara District	105,708	108,152	149,796	121,218.67
5	Kebumen Regency	44,806	73,840	93,207	70,617.67
6	Purworejo Regency	38,452	36,581	67,766	47,599.67
7	Wonosobo Regency	34,784	67,363	74,137	58,761.33
8	Magelang Regency	339,566	326,136	186,353	284,018.33

9	Boyolali Regency	32,636	73,270	144,168	83,358.00
10	Klaten Regency	108,183	139,279	178,764	142,075.33
11	Sukoharjo Regency	498,791	495,314	323,395	439,166.67
12	Wonogiri Regency	160,540	188,932	215,117	188,196.33
13	Karanganyar regency	681,288	738,928	710,328	710,181.33
14	Sragen Regency	930,038	578,192	533,438	680,556.00
15	Grobogan Regency	107,812	91,623	117,695	105,710.00
16	Blora Regency	25,602	32,076	67,578	41,752.00
17	Rembang Regency	884,784	1,697,232	1,355,315	1,312,443.67
18	Pati Regency	131,543	379,537	240,819	250,633.00
19	Holy District	340,950	524,139	547,188	470,459.00
20	Jepara Regency	75,638	116,145	134,760	108,847.67
21	Demak Regency	134,824	81,322	160,718	125,621.33
22	Semarang Regency	895,142	871,469	1,124,994	963,868.33
23	Temanggung Regency	56,070	54,491	70,142	60,234.33
24	Kendal County	358,749	542,003	339,892	413,548.00
25	Batang Regency	30,442	44,606	70,918	48,655.33
26	Pekalongan Regency	28,228	42,311	93,244	54,594.33
27	Malang Regency	63,400	75,837	87,558	75,598.33
28	Tegal Regency	139,392	204,560	247,648	197,200.00
29	Brebes Regency	88,909	118,833	131,332	113,024.67
30	City of Magelang	74,267	100,623	158,229	110,39.67
31	Surakarta City	513,270	600,330	569,899	561,166.33
32	Salatiga City	89,215	80,168	106,298	91,893.67
33	Semarang city	2,085,933	2,203,863	2,907,523	2,399,106.33
34	Pekalongan city	74,286	74,593	87,349	78,742.67
35	Tegal City	82,160	120,632	99,933	100,908.33

Discussion

1. Inflation Against Investment

Based on the output of structural equation II above, it can be seen that the effect of inflation is negative and has a significant effect of 0.025557 on investment in Central Java Province. This shows that an increase in inflation of 1% will reduce the level of investment by 0.025557%.

2. Effect of Inflation on Unemployment

Based on the output with the fixed effect model in the appendix, inflation directly shows a negative sign and has a significant effect of 0.006258 on unemployment in Central Java Province. The indirect effect of inflation is 0.001599 on unemployment in Central Java Province. Meanwhile, the total effect of inflation on unemployment in Central Java Province showed a negative sign of 0.031815. This indicated that a 1% increase in inflation in Central Java Province would reduce the unemployment rate by 0.031815%. In theory this was explained by AW Philips in 1958 regarding Philips law. In this theory Philips explains that there is a negative relationship between inflation and unemployment. When one of these variables increases, the other variables decrease.

Inflation in Central Java Province occurred due to the high demand for the food, prepared food, and housing groups. The high market demand caused producer stocks to decline. only factor of production) as an effort to increase production capacity. The higher the aggregate demand, the higher the job opportunities created and indirectly unemployment decreases. High inflation is proven to be

able to absorb labor and reduce unemployment. On the other hand, inflation is an economic problem, so it cannot be used as a basis for policies to address unemployment.

3. The Effect of Economic Growth on Investment

Based on the output of structural equation II above, it can be seen that the effect of economic growth is negative and has a significant effect of 0.067239 on investment in Central Java Province. This shows that an increase in economic growth of 1% will reduce the level of investment by 0.067239%.

4. The Effect of Economic Growth on Unemployment

The economic growth variable has a direct and significant negative effect on unemployment in Central Java Province of 0.049589. The indirect effect of economic growth is 0.003334 on unemployment in Central Java Province. Meanwhile, the total effect of economic growth on unemployment in Central Java Province showed a negative sign of 0.116828. This means that every time there is an increase in economic growth by 1%, unemployment will decrease by 0.116828%. Economic growth is calculated by looking at changes in GRDP. In Central Java Province GRDP growth has increased. The increase in GRDP is a reflection of the increase in the value of all products produced by all production sectors by utilizing available production factors. In an effort to increase production value, additional factors of production (in this case labor) are required. The higher the GRDP, the higher the absorption of labor. Agriculture is the sector that contributes the highest GRDP and absorbs the highest workforce, so the agricultural sector is a potential sector in absorbing labor in Central Java Province.

5. Effect of Investment on Unemployment

Investment variable has a negative and significant effect on unemployment in Central Java Province of 0.208683. This means that every time there is an increase in investment of 1%, unemployment will decrease by 0.208683%. This can be related to the statement from Todaro (2003) that investment plays an important role in driving the economy because capital formation can form production capacity and create new jobs so that it can expand employment opportunities. With the formation of new jobs, investment indirectly reduces the number of unemployment.

Investment is very important to drive the economy of a region. Investment value in 2008-2010 in Central Java Province is still low compared to other provinces in Java Island. The low value of investment in Central Java is caused by factors such as the high fees levied by the local government on investors when making investments, besides that the investment licensing factor which is complicated and takes a long time makes investors think many times about investing in Central Java.

6. CONCLUSION

Based on the research and discussion described in the previous chapter, the following conclusions are drawn: Inflation is negative and has a significant effect of -0.025557 on investment in Central Java Province and inflation has a negative and significant effect on unemployment in Central Java Province, indicated by a coefficient value of -0.031815 and a probability of 0.0350 < 0.050 ($\alpha = 5\%$). This means that when the inflation rate increases, unemployment decreases. This is in accordance with the theory of AW Philips. Economic growth has a negative sign and has a significant effect of -0.067239 on investment in Central Java Province and economic growth has a negative and significant effect on unemployment in Central Java Province, indicated by a coefficient value of -0.116828 and a probability of 0.0000 < 0.050 ($\alpha = 5\%$). This means that when economic growth increases it will reduce the number of unemployed, conversely if economic growth decreases then the number of unemployed rises. Investment has a negative and significant effect on unemployment in Central Java Province indicated by a coefficient value of -0.208683 and a probability of 0.0000 < 0.050 ($\alpha = 5\%$). This means that when investment increases it will reduce the number of unemployed, conversely if investment decreases

then the number of unemployed rises. 208683 and a probability of $0.0000 < 0.050$ ($\alpha = 5\%$). This means that when investment increases it will reduce the number of unemployed, conversely if investment decreases then the number of unemployed rises. 208683 and a probability of $0.0000 < 0.050$ ($\alpha = 5\%$). This means that when investment increases it will reduce the number of unemployed, conversely if investment decreases then the number of unemployed rises.

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