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Analysis of the Effect of Labor, Wages, PMDN, and PMA on Economic Growth In the DIY Yogyakarta Region in 2015-2021

Firnanda Amalia Dzurra[1]*, Maulidiyah Indira Hasmarini[1]

[1]Universitas Muhammadiyah Surakarta

Jl. A. Yani, Mendungan, Pabelan, Kec. Kartasura, Kabupaten Sukoharjo, Jawa Tengah, Indonesia.

***Email:** firnandaamalia1@gmail.com

ABSTRACT

The success of developmant as seen in the PDRB in a place like Yogyakarta is heavily influenced by economic growth. This study seeks to explain the relationship between many independent variables, including employment, wages, PMDN, and PMA. Data form Yogyakarta Province's BPS and Bappeda from 2015 to 2021 were processed for this study. The correlation between labor, wages, PMDN, PMA and economic development has been demonstrated by numerous research. This study uses the panel data method and is quantitative. This approach is used by statisticians to determine how a factor affects recurring issues like economic growth. According to the study's results, wages have a -47551.99 coefficient negative association with economic growth. With a coeffecient score of -1624773, adding employment has a detrimental effect on economic recovery. The PMA and economic growth have a -3.117904 correlation coefficient. With coefficient 8056844, PMDN has consequences for economic growth that are favorable.

Keywords: Labor, Wages, PMDN

INTRODUCTION

By examining changes in commodities and services, one can determine whether the economic situation in a region has improved or deteriorated over time. The process of improving ongoing economic conditions in a region to produce a better state for a while is known as an increase in economic activity (Woestho & Sulistyowati, 2021) . An essential metric to assess the effectiveness of regional development is economic growth, which is the process of increasing output over time (Wihastuti, 2008). The government of development mobilizers also plays a significant and strategic role in enhancing local economic development and welfare.

One strategy for accelerating a region's economic development is investment. The economic structure of Indonesia will alter as a result of investments made in a variety of sectors. Consequently, investment, particularly from investors, is crucial for the development of numerous economic sectors (Camenia Jamil & Restu Hayati, 2020). The first step in carrying out development is investment. Domestic investment (PMDN), which comes from within the nation, and foreign investment (PMA) (Rawung et al., 2022). Both have an equal impact on a nation's economic development. One sign that a country or region has a strong economic system is the amount of foreign investment and regional investment, which indicates that the country or region's natural resources and human resources are sufficient to support the economy . This situation will entice investors to invest, which will undoubtedly be beneficial for both the nation as a whole and each individual region within it (Amiruddin, 2018).

Every region of Indonesia has experienced economic growth, and this cannot be divorced from the improvement of employment and human resource development (Heidy, 2019). According to BPS census statistics, less than 95% of employees are employed in Indonesia, which shows that the country's labor force has not yet been completely absorbed (Ayu, 2014). The significant number of workers who have not yet been fully absorbed in each sector of the economy illustrates the absorption of the labor force into the existing economic sectors(Aswir & Misbah, 2018). This is undoubtedly consistent with the increase in population, as an increase in the population should increase the amount of output in a region (Ofori et al., 2020). As a result, the strategy of increasing employment chances is crucial to the execution of development since the employment opportunities produced by economic development serve as one of the metrics for gauging a country's or nation's economic performance (Salsabila et al., 2021). That employment possibility is a specialized socioeconomic factor . The result is a decline in social output. The goal of development policies and initiatives should be to increase employment possibilities (Istikomah & Kustituanto, 1999).

Wages are one factor that influences economic expansion. Any labor force wants to earn enough money to cover its expenses. Every year, the minimum wage in the Yogyakarta region rises. Pay tends to rise to a high level in a position where there is a shortage of workers but a high demand (Azaini, 2014). Neoclassical thought holds that when wages rise, so will the availability or supply of labor. On the contrary, when wage rates rise, the demand for labor falls. One factor influencing economic growth is wages. Wages will have a favorable effect on economic expansion. Indirectly, wage growth will encourage workers to spend more of their income on consumer products, which will stimulate the economy (Aprilia, 2016).

Based on the background and phenomena above, the author is interested in analyzing further "Analysis of the Effect Labor, Wages, Domestic Investment (PMDN), and Foreign

Investment (PMA) Yogyakarta in 2015-2021". The purpose of this study provides an overview of the influence of labor levels, wages, investment in the state, and foreign investment on the growth in the Yogyakarta area so that it is hoped that it can be an illustration for the government in making policies related to efforts to grow and develop the economy of the Yogyakarta region (Rodrigo Garcia Motta, Angélica Link, Viviane Aparecida Bussolaro et al., 2021). The relevance of this research to previous research is the combination and development. The combination in question is in the use of variables, namely only domestic investment, foreign investment, and labor (Chusna, 2013).

METHOD

This research method will use a quantitative type of research, which means that this research is structured by data so that it can be generalized. The data used in this study is panel data. Panel data or also known as longitudinal data is a combination of cross-section data and time series data. In this study, the data used came from the Central Statistics Agency (BPS) and the Yogyakarta Provincial Bappeda which focused on the 2015-2021 period (Anwar, 2017). The population in this study used 4 districts and 1 city. In the study using the equation of the E-views tool 10, the regression equation is as follows.

Example of writing a formula :

$$GROWTH = \beta_0 + \beta_1 Labor_t + \beta_2 Wages_t + \beta_3 PMDN_t + \beta_4 PMA_t + \varepsilon_t$$

Where:

GROWTH = Total Economic Growth
LABOR = Number of Workers
WAGES = Amount of Income
PMDN = Total Domestic Investment
PMA = Amount of Foreign Investment
ε = Error term
t = Number of T-th Years
β0 = Constant
β1... β4 = Coeffesient regression of independent variables

RESULT AND DISCUSSION

In this study, the bound variables used were economic growth, employment, wages, Domestic Investment, and Foreign Investment with the number of observations used were 4 districts and 1 city in Yogyakarta Province with a period of 7 years, namely 2015-2021.

Table 1. GRDP in Yogyakarta Province in 2015-2021.

Tahun	PDRB
2015	5,09
2016	5,11
2017	5,24
2018	5,49
2019	5,96
2020	-2,42
2021	5,09

Source: BPS of Yogyakarta province

Based on Table 1 of the GRDP above, it can be known that the GRDP in Yogyakarta during the 2015-2021 period experienced fluctuations. In 2015 the GRDP in Yogyakarta was 5.09% then in 2016 it increased to 5.11% and experienced a return increase in 2017 of 5.24% then experienced another increase in 2018 of 5.49 and 2019 it still increased to 5.96, while in 2020 there was decrease to -2.42% and in 2021 it increased again to 5.09%.

Table 2. Labor Rate in Yogyakarta Province in 2015-2021.

Tahun	Tenaga Kerja
2015	1.971.463,00
2016	2.099.436,00
2017	2.117.187,00
2018	2.191.742,00
2019	2.246.194,00
2020	2.228.162,00
2021	2.334.955,00

Source: BPS of Yogyakarta Province

Table 2. Labor Rate in Yogyakarta ProBased on Table 2. The above labor level can be known that the workforce in Yogyakarta Province has increased every year. In 2015 the workforce in Yogyakarta Province amounted to 1,971,463.00 then in 2016 it increased to 2,099,436.00 and in 2017 it again increased to 2,117,187.00 then in 2018 the increase in labor was 2,191,742.00 and in 2019 it experienced an increase in the labor of 2,246,194.00. Then in 2020, the increase in labor to 2,228,162.00, and in 2021 the workforce in Yogyakarta Province increased again by 2,334,955.00. Vince in 2015-2021.

Table 3. Wage Rate in Yogyakarta Province

Tahun	Upah
2015	988.500,00
2016	1.182.510,00
2017	1.337.645,00
2018	1.454.154,00
2019	1.570. 923,00
2020	1.704. 608,00
2021	1.765.000,00

Source: BPS of Yogyakarta Province

Based on Table 3, the level of wages in Yogyakarta Province has increased every year. In 2015 the wage rate in Yogyakarta Province was 988,500.00 and increased in 2016 by 1,182,2510.00 then in 2017 the wage rate rose to 1,337,645.00. In 2018, there was an increase in the wage rate in Yogyakarta Province by 1,454,154.00. In 2019 the wage rate was 1,570,923.00 and in 2020 wages increased to 1,704,608.00. Then in 2021 the wage rate has risen to 1,765,000.00.

Table 4. PMDN (Domestic Investment) in Yogyakrta Province

Tahun	PMDN
2015	3.951.662.458.340,00
2016	4.522.819.793.467,00
2017	4.817.449.093.467,00
2018	10.949.163.467,00
2019	17.248.001.993.467,00

Tahun	PMDN
2020	19.931.377.693.467,00
2021	22.692.648.193.467,00

Source: BPS of Yogyakarta Province

Based on table 4 above, Domestic Investment (PMDN) always increases every year. We can see from 2015 PMDN in Yogyakarta Province amounted to 3,951,662,458,340.00 and in 2016 it increased to 4,522,819,793,467.00. In 2017 PMDN in Yogyakarta Province still experienced an increase with a total of 4,817,449,093,467.00 then increased again in 2018 by 10,949,163,467.00 and in 2019 the increase in PMDN is getting higher with the number of 17,248,001,993,467.00 then in 2020 the PMDN level will be 19,931,377,693,467.00 and in 2021 it will increase to 22,692,648,193,467.00.

Table 5. PMA (Foreign Investment) in the Province of Yogyakarta

Tahun	PMA
2015	7.271.740.783.735,00
2016	7.554.841.971.335,00
2017	8.036.525.361.335,00
2018	9.126.508.081.335,00
2019	9.345.955.081.335,00
2020	9.485.961.961.335,00
2021	9.803.584.430.503,90

Source: BPS of Yogyakarta Province

Based on table 5 above, Foreign Investment in Yogyakarta Province has increased every year. In 2015 Foreign Investment in Yogyakarta Province increased by 7,271,740,783,735.00 and in 2016 the increase in Foreign Investment increased to 7,554,841,971,335.00. Then in 2017 and 2018 Foreign Investment experienced an increase in cashiness, in 2017 it increased to 8,036,525,361,335.00 and in 2018 it increased to 9,126,508,081,335.00. From 2019 to 2021, Foreign Investment continues to increase. In 2019 Foreign Investment increased to 9,345,955,081,335.00 and in 2020 it increased to 9,485,961,961,335.00 then in 2021 it increased again to 9,803,584,430,503.90.

Selection of the Best Model

a. Chow Test

The Chow test aims to determine the most appropriate panel data regression technique between Fixed Effect (FE) and Common Effect (CE) (Amaliah et al., 2020).

Table 6. Uji Chow

Effects Test	Statistic	d.f.	Prob.
Cross-section F	0.718727	(4,26)	0.5869
Cross-section Chi-square	3.670674	4	0.4524

Based on the results of the Chow Test using the Common Effect (CE) model, the Prob value was obtained. Cross Section F is 0.5869, and the value is greater than 0.05, so it was decided to accept H0 or the Common Effect model more accordingly.

b. Hausman Test

The Hausman test aims to determine the most appropriate panel data regression technique between Random Effect (RE) and Fixed Effect (FE).

Table 7. Uji Hausman

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	2.874907	4	0.5790

Based on the results of the Hausman Test using the Random Effect (RE) model, a Random Cross-section Probability value of 0.5790 was obtained, which is greater than 0.05. So it was decided to accept H0 or the Random Effect model more appropriately.

c. Breusch-Pagan Lagrange Multiplier (LM) Test

The Lagrange Multiplier (LM) test aims to find out the most appropriate panel data regression technique between Common Effect and Random Effect.

Table 8. Uji Lagrange Mutiplier (LM)

Null (no rand. effect) Alternative	Cross-section One-sided	Period One-sided	Both
Breusch-Pagan	1.277351 (0.2584)	47.14286 (0.0000)	48.42021 (0.0000)

Based on the results of the LM Test using the Cmmont Effect (CE) model, a Breusch-Pagan value of 0.000 was obtained, which means it is smaller than 0.05. So it was decided to accept H0 or Random Effect (RE) models more appropriately.

DISCUSSION

In research, it has gone through several tests such as the Chow Test, Hausmant Test, LM Test, Multicollinearity Assumption Test, and Heteroskedacity Assumption Test. The model selected in this study is the Random Effect model (Hapsa & Khoirudin, 2018).

Table 9. Data Eviews Processing Results With a Random Effect (RE) Approach

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-7.37E+12	5.74E+12	-1.283171	0.2093
UPAH	-47551.99	23118.14	-2.056912	0.0485
TK	-1624773.	3826708.	-0.424588	0.6742
PMA	-3.117904	3.718426	-0.838501	0.4084
PMDN	8056844.	3693046.	2.181626	0.0371
Effects Specification				
			S.D.	Rho
Cross-section random			1726913.	0.0000

Idiosyncratic random		4.96E+12	1.0000

Weighted Statistics

R-squared	0.188582	Mean dependent var	1.79E+12
Adjusted R-squared	0.080393	S.D. dependent var	5.07E+12
S.E. of regression	4.87E+12	Sum squared resid	7.10E+26
F-statistic	1.743075	Durbin-Watson stat	1.490783
Prob(F-statistic)	0.166620		

Unweighted Statistics

R-squared	0.188582	Mean dependent var	1.79E+12
Sum squared resid	7.10E+26	Durbin-Watson stat	1.490783

The hypothesis used to determine whether there is an overall or simultaneous influence between all independent (free) variables, namely labor, wages, Foreign Capital Growers (PMA) and Domestic Investment (PMDN) on dependent (bound) variables, namely Economic growth in Yogyakarta Province (Ofori et al., 2020). Based on Table 9 above, the probability value of F-statistics is obtained at 0.166620, this value is greater than 0.05 so it can be decided that simultaneously there is no significant influence between employment, wages, Foreign Direct Investment (PMA), and Domestic Investment (PMDN) on Economic Growth in Yogyakarta Province in 2015-2021.

The value of the Coefficient of Determination (R2) is 0.188582 or 1.88%. So it can be concluded that the diversity of economic growth variables can be explained by the variables of Labor, Wages, Foreign Investment (PMA), and Domestic Capital Management (PMDN) of 1.88% while the remaining 98.12% is explained by other variables.

Furthermore, the t-test or partial test is used to determine the influence of each independent (free) variable, namely Labor, Wages, Foreign Capital Appreciation (PMA), and Domestic Investment (PMDN) on the variable (bound) namely Economic Growth (Anggraini, 2021). The labor variable has a t-Statistic value of -2.056912 with a t-Statistic probability value of 0.0485 this value is smaller than 0.05 which means that the Labor variable has a significant negative effect on Economic Growth in Yogyakarta Province in 2015-2021.

The wage variable partially has a t-statistical value of -0.424588 with a t-Statistics probability value of 0.6742, this value is greater than 0.05 meaning that between wages and Economic Growth in Yogyakarta Province in 2015-2021 has an insignificant negative relationship to the economic growth of Yogyakarta province in 2015-2021.

The Foreign Direct Investment (PMA) variable partially has a t-statistical value of -0.838501 with a t-Statistics probability value of 0.4084, this value is greater than 0.05 meaning that between wages and Economic Growth in Yogyakarta Province in 2015-2021 has an insignificant negative relationship to the economic growth of Yogyakarta province in 2015-2021.

The Domestic Investment Variable (PMDN) partially has a t-statistical value of 2.181626 with a t-statistical probability value of 0.0371, this value is smaller than 0.05 meaning that between wages and Economic Growth in Yogyakarta Province in 2015-2021 there is a relationship positive and significant for the economic growth of Yogyakarta province in 2015-2021.

IMPLICATIONS

From the research that has been carried out, it can be concluded that the essence of this study entitled "ANALYSIS OF THE EFFECT OF LABOR, WAGES, PMA AND PMDN ON THE ECONOMIC GROWTH OF YOGYAKARTA PROVINCE IN 2015-2021" that the Variables of Manpower, Wages, PMA seen from the analysis of regional data of 5 regencies/cities in DIY Province in 2015-2021 had a negative and insignificant effect on economic growth in Yogyakarta Province. Meanwhile, the PMDN variable seen from data analysis shows that PMDN affects economic growth in Yogyakarta Province in 2015-2021 (Ahmad Ma'ruf, 2008).

CONCLUSION

In this study, it can be concluded that the Yogyakarta DIY area in the 2015-2021 period was concluded that the model in the right panel data regression in this study is the REM model. It was found that Wages, Labor, and Foreign Investment have a negative influence on economic growth in the Yogyakarta DIY region (Rumalutur et al., 2022). Meanwhile, Domestic Investment has a positive influence on growth in the Yogyakarta DIY region with a coefficient regression of 8056844.

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REFERENCES

Ahmad Ma'ruf. (2008). PERTUMBUHAN EKONOMI INDONESIA: Determinan dan Prospeknya. *Jurnal Ekonomi & Studi Pembangunan*, *9*(1), 44–55.

Amaliah, E. N., Darnah, D., & Sifriyani, S. (2020). Regresi Data Panel dengan Pendekatan Common Effect Model (CEM), Fixed Effect model (FEM) dan Random Effect Model (REM) (Studi Kasus: Persentase Penduduk Miskin Menurut Kabupaten/Kota di Kalimantan Timur Tahun 2015-2018). *ESTIMASI: Journal of Statistics and Its Application*, *1*(2), 106.

Amiruddin, A. (2018). Aliran Penanaman Modal Asing dan Dampaknya terhadap Pertumbuhan Ekonomi Indonesia. *Jurnal Manajemen Dan Keuangan*, *7*(2), 192.

Anggraini, Z. A. (2021). Analisis Pengangguran Terbuka Di Provinsi Jawa Tengah Tahun 2015-2019. *Jurnal Ilmu Ekonomi JIE*, *5*(4), 712–722.

Anwar, A. (2017). Peran Modal Manusia Terhadap Pertumbuhan Ekonomi Regional Di Jawa. *Jurnal Economia*, *13*(1), 79.

Aprilia, R. D. (2016). Pengaruh Pertumbuhan Ekonomi, Upah Minimum, Pendidikan Dan Tingkat Pengangguran Terhadap Tingkat Kemiskinan. *Jurnal Ilmiah Mahasiswa Fakultas Ekonomi Dan Bisnis*, 1–19.

Aswir, & Misbah, H. (2018). Analisis Penyerapan Tenaga Kerja Kabupaten/Kota Di Daerah Istimewah Yogyakarta Pada Tahun 2011-2015. *Photosynthetica*, *2*(1), 1–13.

Ayu, C. (2014). Pengaruh Jumlah Tenaga Kerja, Tingkat Pendidikan Pekerja Dan Pengeluaran Pendidikan Terhadap Pertumbuhan Ekonomi. *Jurnal Economia*, *10*(2),

187–193.

Azaini, M. R. (2014). Analisis Pengaruh Pertumbuhan Ekonomi, Upah Minimum dan Investasi terhadap Penyerapan Tenaga Kerja di Kota Malang (Studi Kasus pada Tahun 1998 – 2012). *Jurnal Ilmiah Mahasiswa FEB Universitas Brawijaya*, 1–14.

Camenia Jamil, P., & Restu Hayati, D. (2020). Penanaman Modal Asing di Indonesia. *Penanaman Modal Asing…{Jamil Dan Hayati}| Jurnal Ekonomi KIAT*, *31*(2), 1–4.

Chusna, A. (2013). Pengaruh Laju Pertumbuhan Sektor Industri, Investasi, Dan Upah Terhadap Penyerapan Tenaga Kerja Sektor Industri Di Provinsi Jawa Tengah Tahun 1980-2011. *Economics Development Analysis Journal*, *2*(3), 14–23.

Hapsa, S., & Khoirudin, R. (2018). ANALISIS PERTUMBUHAN EKONOMI D.I Yogyakarta 2008-2016. *Jurnal Ilmu Ekonomi Pembangunan*, *18*(2), 142–1159.

Heidy, M. (2019). KPENGARUH INVESTASI DAN TENAGA KERJA TERHADAP PERTUMBUHAN EKONOMI KOTA MANADO. *Fakultas Ekonomi Universitas Sam Ratulangi*.

Istikomah, & Kustituanto, B. (1999). Peranan Penanaman Modal Asing (Pma) Terhadap Pertumbuhan Ekonomi Di Indonesia. *Jurnal Ekonomi Dan Bisnis Indonesia*, *14*(1999).

Ofori, D. A., Anjarwalla, P., Mwaura, L., Jamnadass, R., Stevenson, P. C., Smith, P., Koch, W., Kukula-Koch, W., Marzec, Z., Kasperek, E., Wyszogrodzka-Koma, L., Szwerc, W., Asakawa, Y., Moradi, S., Barati, A., Khayyat, S. A., Roselin, L. S., Jaafar, F. M., Osman, C. P., … Slaton, N. (2020). PENGARUH PENANAMAN MODAL ASING (PMA), PENANAMAN MODAL DALAM NEGERI (PMDN), TENAGA KERJA DAN INFLASI TERHADAP PERTUMBUHAN EKONOMI DI PROVINSI LAMPUNG DALAM PERSPEKTIF EKONOMI ISLAM TAHUN 2007 – 2017. *Molecules*, *2*(1), 1–12.

Rawung, A., Lapian, A. L. C. P., & Siwu, H. F. D. (2022). PENGARUH PENANAMAN MODAL DALAM NEGERI (PMDN) DAN PENANAMAN MODAL ASING (PMA) TERHADAP PERTUMBUHAN EKONOMI DI PROVINSI SULAWESI UTARA. *JURNAL BERKALA ILMIAH EFISIENSI*, *22*(2), 14–25.

Rodrigo Garcia Motta, Angélica Link, Viviane Aparecida Bussolaro, G. de N. J., Palmeira, G., Riet-Correa, F., Moojen, V., Roehe, P. M., Weiblen, R., Batista, J. S., Bezerra, F. S. B., Lira, R. A., Carvalho, J. R. G., Neto, A. M. R., Petri, A. A., Teixeira, M. M. G., Molossi, F. A., de Cecco, B. S., Henker, L. C., Vargas, T. P., Lorenzett, M. P., Bianchi, M. V., … Alfieri, A. A. (2021). Analisis Pengaruh PAD, PMA, PMDN, dan Angkatan Kerja Terhadap PDRB Kabupaten/Kota di Provinsi D.I. Yogyakarta Tahun 2013-2019. *Pesquisa Veterinaria Brasileira*, *26*(2), 173–180.

Rumalutur, T., Kasmando, H. R., Marlissa, E. R., & Siahainenia, J. E. H. (2022). Pengaruh Penanaman Modal Asing (PMA), Penanaman Modal Dalam Negeri Dan Belanja Langsung Terhadap Pertumbuhan Ekonomi Di Provinsi Papua. *Jurnal Kajian Ekonomi Dan Studi Pembangunan*, *6*(3), 9–16.

Salsabila, A. Y., Imanigsih, N., & Wijaya, R. S. (2021). Pengaruh Jumlah Penduduk, Jumlah Pengangguran Dan Tingkat Pendidikan Terhadap Pertumbuhan Ekonomi Di Wilayah Gerbang Kertosusila. *Jurnal Ekonomi Pembangunan STIE Muhammadiyah Palopo*, *7*(1), 35.

Wihastuti, L. (2008). PERTUMBUHAN EKONOMI INDONESIA: Determinan dan Prospeknya. *Jurnal Ekonomi & Studi Pembangunan*, *9*(1), 30660.

Woestho, C., & Sulistyowati, A. (2021). Prioritas Pembangunan Daerah dan Pertumbuhan Ekonomi pada Provinsi Daerah Istimewa Yogyakarta. *Jurnal STEI Ekonomi*, *30*(01),

20–32.