

THE EFFECT OF CAPITAL EXPENDITURE AND PRIVATE INVESTMENT ON HUMAN DEVELOPMENT INDEX (HDI) IN MALANG FROM 2003 TO 2018

Syamsul Bachri

ABSTRACT

The problems in Malang is poverty caused by loan sharks' loans and the poor who lives near the riverbank, so the government carry out economic development to improve the welfare of the people. The purpose of this research is to find out the effect of capital expenditure and private investment on Human Development Index, both in short-term and long-term. Descriptive quantitative method is implemented using Vector Autoregression (VAR). The result shows that capital expenditure affects the Human Development Index, while private investment does not affect Human Development Index.

Key words: Capital Expenditure, Private Investment, Human Development Index, and Vector Autoregression (VAR).

INTRODUCTION

The purpose of economic development of Malang city government is to improve the residents' welfare. Human development is the expansion process of options in fulfilling human needs in terms of education, health and income per capita improvement which can be calculated using Human Development Index (Central Bureau of Statistics, 2020). The problems of Human Development Index in Malang are the phenomenon of loan sharks in the guise of cooperatives and the residents living in the riverbank. The Malang government solves poverty through regional poverty control team.

The expenses of Malang government through expansive fiscal policy by increasing capital expenditure in the field of education, infrastructure and health positively affect the improvement of human resources quality to be able to increase the output production (Sukirno, 2004). Private investment could increase the output production to affect economic development, increase employments and alleviate poverty (Wari, 2015). Supported by Mirza (2014) and Wati (2015) whose researches shows that both economic growth and capital expenditure positively and significantly affects Human Development Index.

The Capital Budget has a long-term plan and expenses on permanent assets, such as buildings, equipment, vehicles, furniture, etc. Capital expenditure is an expense that is beneficial in increasing the government's assets or resources for more than twelve months, so that it can improve public services and attract private investment. The focus of this research is to find out the short-term and long-term effect of capital expenditure and private investment on Human Development Index from 2003-2018.

THEORETICAL REVIEW

A. Human Development Index (HDI)

Human Development Index according to United Nations Development Programme (UNDP) is a human development process which prioritizes residents comprehensively on economic aspect of income per capita increase and non-economic aspect of the literacy and life expectancy rate, so both the capabilities and capacity could be improved optimally (Central Bureau of Statistics, 2020). The indicators of Human Development Index are 1. Life Expectancy Index reflects the rate of total live birth and infant mortality index with the lowest estimation for life expectancy quality of 25 years and the highest life expectancy quality of 87 years, 2. Education index is divided into 2, which are literacy rate and education level rate above 15 years-old to be able to read and write, and 3. Income index is calculated through real income per capita, which is the high purchasing ability of the residents to fulfill their needs so that the residents have a good quality of life (Kuncoro, 2007). Formulation of Human Development Index value: $Index X(i,j) = (X(i,j) - X(i-min)) / (X(i-maks) - X(i-min))$, where: $X(i,j)$ = Component index i from the region of j , $X(i-min)$ = Minimum value of X_i , $X(i-maks)$ = Maximum value of X_i (Central Bureau of Statistics, 2020).

B. Capital Expenditure

Capital expenditure is an important part of regional expenditure cluster in improving the service and prosperity for the people. Capital expenditure will provide multiplier effect on the people's economy through constructions of roads, markets, schools, hospitals, and many more.

Capital expenditure budget is obtained from General Allocation Fund (GAF) and Special Allocation Fund that comes from tax. Capital expenditure could create additional regular expenses, such as maintenance cost on general administration expenditure cluster of equipment, buildings, infrastructures, and other permanent property. If capital expenditure is appropriate and the budget is appropriately allocated, it could attract private investment in the future. The characteristics of capital expenditure are to maintain or increase the term of usage and to increase the capacity and quality of government's assets.

LOCAL GOVERNMENT EXPENSES

1. Definition of Regional Fiscal Policy

According to Sukirno (2004), Automatic Stabilizer Fiscal Policy is a government policy that regulate the amount of revenues and expenses affecting regional economy and regulate the tax rate the residents should pay. Contractive fiscal policy is used to solve inflation, while expansive fiscal policy is used to solve deflation. Government revenue post includes taxes, grant funds, Local-Owned Enterprises profits, and location funds which includes General Allocation Fund, Special Allocation Fund, and Local Balance Fund. Government expenditure post includes personnel expenditure, goods and services expenditure, capital expenditure, subsidy and social assistance, debts and other financing.

2. Government Expenditure Theory

According to Mangkusubroto (1993), there are 3 theories on local government expenditure, consisting of: a) Mugrave and Rostow Theory, which stated that the high government expenditure is applied to improve the economy while low government expenditure is applied when the economy is stable when private investment increases, b) Wagner Theory, which stated that government expenditure increases when the income of the people is relatively high as the government manages the public relation, and c) Peacock and Wiseman Theory, which stated that the government increases expenditure so the people must pay high taxes in order for the government to obtain income based on voting theory.

3. The Effect of Capital Expenditure on Human Development Index

Capital expenditure has a positive significant connection in increasing Human Development Index as the government increases capital expenditure to increase private investment and economy, and at the stable economy stage, the government decreases public expenditure. This affects labor absorption to increase people's welfare (Mangunsubroto, 1993).

PRIVATE INVESTMENT

1. The Effect of Private Investment on Regional Economy Growth

Investment is corporation expenditure on purchasing assets to increase business capacity consisting of autonomous investment and affected investment (Sukirno, 2004). There are 3 economy growth theories, which are a) Adam Smith Theory, in which capital accumulation increases output and economy growth, b) Harold Domar Theory, in which private investment is affected by savings which should be equal to COR and ICOR on two-sectors economy, and c) Sallow Theory, in which capital accumulation and technology increases output and economy growth (Kuncoro, 2007). The local government initially plan the program to be administered and then allocate the budget for all the required expenses. By creating a budgeting system that could combine the performance planning and the annual budget, it could be seen that there is a correlation between the available funds and the expected results. Investment is one of the supports in acquiring income that would be utilized in the future. Besides increasing the economic output, investment could also generate input. Private investment is an important factor in increasing the private investment in Malang. High quality IPM surely has an effect on the increase of private investment, for if a region is high in quality, that region could be considered as a promising location for investment.

2. The Effect of Private Investment on Human Development Index

The increase on private investment improves Human Development Index which is affected by low interest rate to increase investment and technology as well as profit expectation to increase output so that it affects the people's welfare (Sukirno, 2004). The policy to increase the investment interest in a region could be applied by increasing the services, facilities, and the investment implementation law. Through private investment, there is a capital flow affecting business improvement, and surely decrease the obstacle of the lack in developmental capital in Malang region.

Investment is one of the criteria of success of the regional autonomy implementation. It is so as investment has a multiplier effect in improving the human resources, which gradually improve the human resources ability with the ever-growing economic activity around Malang. One of the means implemented by the local government of Malang in supporting the private investment growth is by attempting to build a conducive and interesting environment for the development of domestic industry as well as attracting foreign investment. Future investment planning done by the government will be directed to support the human resources to be able to develop more in terms of income, education, and health, based on the regional autonomy principles and human resources management to improve the performance of the people's welfare.

3. Research Method

a. Research Design and Data Collection

This research is a descriptive quantitative research with independent variables of capital expenditure and private investment and dependent variables of Human Development Index from 2003-2018. The data collection is using secondary data obtained from the Central Bureau of Statistic. Literature review analysis and documentation is implemented to obtain data and references in conducting this research.

b. Data Analysis

1. Classic Assumption Test

Classic Assumption Test is implemented to find out BLUE characted data through 4 analysis, which are a) Normality Test, which is a test to determine the normal distributed data using jarquen berra and prob of < 0.05 , b) Multicollinearity Test to determine the correlation between variables using R2 with a value of > 0.85 , c) Autocorrelation Test to determine residual deviation caused by time difference calculated using Durbin Watson Test with a DW value between -2 and +2, meaning there is no autocorrelation, and d) Heteroscedasticity Test to determine residual deviation of variances calculated using White test so that there is heteroscedasticity if prob is > 0.05 (Widaryono, 2014).

2. Vector Autoregression (VAR) Test

According to Mukhlis & Simanjuntak (2017), Vector Autoregression (VAR) Test is a forecasting on time-series data and analysis on one variable affected by random disturbances causing dynamic effect. Steps in conducting VAR test are: a) Stationarity Test to determine the root of researched data using ADF test on the value of ADF t-statistic equal to test critic value, b) Johansen Cointegration Test to determine long-term relation between cointegrated variables where Maximum Eigenvalue test and Trace test should be higher than critical value, c) VAR Estimation Test using partial test through comparing the T-Table value $> T$ -Count and prob < 0.05 so that there is a significant relation, d) Optimal Lag Test through finding the smallest value on ICE, SC and HQ, e) Granger Causality to determine causality relation between variables, f) Impulse Response Test (IRF) to determine shock effect between one variable affecting other variables, and g) Variance Decomposition (VD) Test to determine the forecasting between dynamic variables when there are changes in variables.

RESULTS

A. Descriptive Statistic Test

Year	2003	2004	2005	2006	2007	2008
Capital Expenditure	37.949	43.318	69.530	146.611	149.647	152.465
Investment	207.817	270.128	367.767	308.111	287.411	334.485
HDI	68.33	69.13	73.85	75.34	75.77	76.19
Year	2009	2010	2011	2012	2013	2014
Capital Expenditure	226.718	195.143	160.159	268.292	144.983	268.292
Investment	470.071	559.120	791.652	1010.008	464.657	1090.802
HDI	76.69	77.20	77.76	77.99	74.82	78.96
Year	2015	2016	2017	2018		
Capital Expenditure	353.264	318.462	337.647	193.646		
Investment	1077.475	1785.068	1915.695	1683.580		
HDI	80.05	80.46	80.65	80.89		

Capital expenditure investment is government expenditure on regional fiscal policy to purchase public goods (infrastructure) and perform transfer payment (subsidy) to increase regional economy (Sukirno, 2004). The lowest investment in Malang was in 2003 which was Rp. 37.949 billion, while the highest was Rp. 353.2640 billion in 2015. 2) Private investment is corporation expenditure to purchase tools to improve production capacity (Sukirno, 2004). The highest private investment in Malang was Rp. 1915.695 billion in 2017, while the lowest was Rp. 207.8170 billion in 2003. 3) Human Development Index is the presence of government's role to fix humans' ability in terms of work skills, health, and knowledge (BPS Kota Malang, 2018). The highest Human Development Index in Malang was 80.89 in 2018, while the lowest in Malang was 68.33 in 2003.

B. Data Analysis

1) Classic Assumption Test

Classic Assumption Test to determine BLUE data calculated by a. Normality Test which has abnormal data when prob $0.690451 > 0.05$, b. There is a Multicollinearity, causing a closely-related correlation between capital expenditure and Human Development Index as the value is $0.873 > 0.85$, c. Positive Autocorrelation Test to determine the problem in time as the value is 1.146803 , which is between 0 and 1.5284 , and d. There is a Heteroscedasticity in White test as $0.0418 > 0.05$, so there is a residual variance problem.

2) Vector Autoregression (VAR) Test

VAR Test is performed to determine the dynamic relation between variables, both short-term and long-term, which is calculated by:

- a. Stationary Test a) Capital expenditure is stationary as the T-Statistic was $-5.472980 < \text{critical value } -4.121990$ on second different and 1% level, b) Private Investment is stationary as the T-Statistic was $-3.686532 < \text{critical value } -3.212696$ on second different and 5% level, and c) Malang HDI is stationary as T-Statistic was $-6.747406 < \text{critical value } 4.057910$ on second different and 1% level.

- b. Cointegration Test 1) Eigenvalue and Trace Statistic > Critical Value, in which : a) None has $0.812865 + 48.32734 > 29.79707$, b) At most 1 has $0.782625 + 24.86441 > 15.49471$ and 2) Eigenvalue and Max Eigen Statistic > Critical Value, in which : a) None has $0.812865 + 23.46293 > 21.13162$, b) At most 1 has $0.782625 + 21.36583 > 14.26460$.
- c. The results of the VAR partial test above are a) HDI in the first period has a significant positive effect in increasing HDI as the T-Table value is [1.82595] > T-Count 1.782, b) Capital expenditure in the second period has a significant positive effect in increasing HDI as the T-Table value is [2.67329] > T-Count 1.782, d) Capital expenditure in the second period has a significant positive effect in increasing private investment as the T-Table value is [3.55384] > T-Count 1.782, dan e). C significantly affect HDI as the value of T-Table is [3.16522] > T-Count 1.782.
- d. Lag Length Criteria Test shows that lag period 1 is very optimal as it has the lowest value of AIC of 28.79234, SC of 29.35878, and HQ of 28.78631.
- e. Granger Causality Test a) HDI is affected by capital expenditure as it has a prob of $0.0275 < 0.05$, b) All affect HDI as they have a prob of $0.0427 < 0.05$, c) Private investment is affected by capital expenditure as it has a prob of $0.0016 < 0.05$, and d) All affect private investment as they have a prob of 0.0069.
- f. Impulse Response Function (IRF) Test a) Capital Expenditure of period 1 and 2 has a significant positive effect on Malang HDI as it has a prob. of $0.00 < 0.05$ and $0.002745 < 0.05$, and b) Private investment of Malang on period 1,9 and 10 has a positive significant effect on Malang HDI as it has a prob of $0.00 < 0.05$, $0.019805 < 0.05$ and $0.001687 < 0.05$.
- g. Variance Decomposition (VD) Test a) Capital expenditure of period 1 and 2 has a positive significant effect on HDI as it has a prob. of $0.00 < 0.05$ and prob $0.00367 < 0.05$, b) Private investment has a positive significant effect on HDI as it has a prob of $0.00 < 0.05$, and c) Capital expenditure is significantly and positively affected by private investment in period 1 as it has a prob of $0.00 < 0.05$.

DISCUSSION

A. The Relation of Capital Expenditure of Local Government of Malang on Human

Development Index in Malang

Based on the VAR analysis result, the capital expenditure of Malang local government on period 2 significantly and positively affect the Human Development Index and private investment, so that the increase on capital expenditure increases the investment in the corporation. In result, it could absorb labors and increase the Human Development Index in Malang. The government implements expansive fiscal policy and musgrave theory to increase public expenditure such as infrastructure and social security which provide high social benefits for the people. It causes an increase in investment so that corporation could expand their business scale and also affect labors absorption. An increase in the residents' income causes an increase in people's welfare (Mangkunsubroto, 1993).

The results of Granger Causality, Impluse Response Function (IRF) and Variance Decomposition (VD) tests show that capital expenditure could increase the Human Development Index in Malang as the health and education funds allocation could improve the human resource's quality in producing output (Syafii, 2005). Private investment increases capital expenditure as it results in economy growth in Malang, resulting in government's infrastructure development to improve industrial performance (Zasriwati, 2014). This is in line with a study by Syafii (2005), Zasriwati (2014) and Safitri (2016) which stated that an increase in government expenditure in education and health sector increases the quality of human resources which affects the economy growth so that it can increase welfare. In contrast with a study by Harahap (2011), he stated that Special Allocation Fund on education and health programs does not affect Human Development Index.

B. The Relation of Malang Private Investment on Human Development Index in Malang

Based on VAR analysis result, it is known that Human Development Index (HDI) in Malang is not affected by corporations' private investment in period 1 and 2. Based on Harold Domar and Sollow Theory, increase in capital is caused by the equality between savings and COR and ICOR to purchase technology to improve production efficiency in producing output (Kuncoro, 2007). An expansive monetary policy by decreasing interest rate increases credit and investment for business development to absorb labor and increase welfare (Miskhin, 2018). Granger Causality test result shows that an increase in private investment is affected by high capital expenditure. According to Kim (in Syafii, 2005), government's investment in infrastructure and human resources quality improvement program yields production efficiency in producing output. Based on Impluse Response Function (IRF) and Variance Decomposition (VD) tests, private investment affects Human Development Index. The government should increase private investment to improve economy growth which results in trickle-down effect to improve the people's welfare (Wardhana, 2016). This is in line with Mirza (2014) and Wati (2015) which stated that private investment increases educated and skilled labors absorption to produce output to increase their income. This is in contrast with Anggraini & Mut'ali (2012) and Wardhana (2016), which stated that the government should increase capital expenditure to increase investment in basic sectors to absorb labors and increase people's welfare.

CONCLUSION

It can be concluded that 1) Capital expenditure has a positive and significant effect on Human Development Index, and 2) Private Investment does not affect Human Development Index, 3) The government's capital expenditure affects private investment on VD and Granger Causality tests. The government is suggested to a) Prioritize capital expenditure on education and free healthcare as

well as facility improvement to improve human resources, and b) Facilitate investment and agriculture industrial integration to improve economic development and people's welfare.

REFERENCES

- Anggraini, R. A. & Muthaali, L. 2012. Pola Hubungan Pertumbuhan Ekonomi Dan Pembangunan Manusia Di Provinsi Jawa Timur Tahun 2007-2011.
- Badan Pusat Statistik. 2018. Teori Indeks Pembangunan Manusia . Malang: Badan Pusat Statistik Malang
- Badan Pusat Statistik. 2018. Indeks Pembangunan Manusia Tahun 2000 sampai 2018. Malang: Badan Pusat Statistik Malang
- Badan Pusat Statistik. 2018. Kota Malang Dalam Statistik Tahun 2000 sampai 2018. Malang: Badan Pusat Statistik Malang
- Badan Pusat Statistik. 2018. APBD Kota Malang tahun 2000 sampai 2018. Malang: Badan Pusat Statistik Malang
- Creswell, J. W. 2016. *Research Design (Pendekatan Metode Kualitatif, Kuantitatif, Dan Campuran)*. Jogjakarta: Pustaka Pelajar
- Harahap, R. U. 2011. Pengaruh Dana Alokasi Umum, Dana Alokasi Khusus, Dan Dana Bagi Hasil Terhadap Indeks Pembangunan Manusia Pada Kab./Kota Propinsi Sumatera Utara. Medan: Universitas Muhammadiyah Sumatera Utara
- Kuncoro, M. 2007. *Ekonomika Pembangunan (Masalah, Kebijakan dan Politik)*. Jakarta: Erlangga
- Mangkusubroto, G. 1993. *Ekonomi Publik Edisi Ketiga*. Jogjakarta: BPFE UGM
- Mirza, D. S. 2014. Pengaruh Kemiskinan, Pertumbuhan Ekonomi, Dan Belanja Modal Terhadap Ipm Jawa Tengah. Semarang: Universitas Negeri Semarang
- Mukhlis, I. & Simanjuntak, T. H. 2017. *Ekonometrika Teori & Aplikasi*. Tulung Agung: Cahaya Abadi
- Safitri, I. 2016. Pengaruh Pengeluaran Pemerintah Sektor Kesehatan, Pendidikan, Dan Infrastruktur Terhadap Indeks Pembangunan Manusia Di Provinsi Aceh. Banda Aceh: Universitas Syiah Kuala (online journal, accessed on March 25 2020)
- Sukirno, S. 2004. *Pengantar Ekonomi Makro*. Jakarta. PT Raja Grafindo
- Syafii, A. 2005. Pengaruh Investasi Fisik Dan Investasi Pembangunan Manusia Terhadap Pertumbuhan Ekonomi Jawa Timur 1990-2004. Surabaya: Fakultas Ekonomi Universitas Airlangga (online journal, accessed on March 25 2020)
- Wardhana, D. P. 2016. Pengaruh Pembangunan Ekonomi Terhadap Pembangunan Manusia Di Kalimantan Timur. Samarinda: Paskasarjana Universitas Mulawarman (jurnal online diakses pada 25 Maret 2020)
- Wati, H. W. 2015. Analisis Pengaruh Belanja Modal Daerah, Investasi, Dan Indeks Pembangunan Manusia (IPM) Terhadap Kemiskinan Di Indonesia Tahun 2009-2013 (Studi Kasus Pada 33 Provinsi). Malang: Universitas Brawijaya (online journal, accessed on March 25 2020).

Syamsul Bachri
Faculty of Economics
State University of Malang, Indonesia
Email: syamsulbachri@gmail.com