THE INFLUENCE OF BUILDING LAND AND ELECTRICITY INFRASTRUCTURE TAXES ON ECONOMIC GROWTH IN INDONESIA

Muhammad Isan[1], Reza Juanda[2], Muammar Khaddafi[3]
[1,2,3]Faculty of Economics and Business, Universitas Malikussaleh, Lhokseumawe
Corresponding E-mail: Khaddafi@unimal.ac.id

Abstract

This study aims to analyze the effect of land and building taxes and electricity infrastructure on economic growth in Indonesia. This research uses secondary data from 2010-2020. Data were analyzed using multiple linear regression (Ordinary Least Squares). Based on the results of the study, it shows that the variable Land and Building Tax has an effect on Economic Growth, while the Electricity Infrastructure variable has no effect on Economic Growth. Simultaneously the variables of Land and Building Tax and Electricity Infrastructure affect Economic Growth. The coefficient of determination R2 in this study is 0.462970, meaning that the effect of the variable Land and Building Tax and Electricity Infrastructure on Economic Growth is 0.462970 or 46.29%. While the remaining 0.53703 (53.703%) is influenced by other variables outside this study.

Keywords: ***Land and building tax, electricity infrastructure and economic growth***

1. INTRODUCTION

A country's economic growth can be seen from the country's Gross Domestic Product (GDP). Gross Domestic Product (GDP) itself is the total final output of goods and services produced by a country's economy within that country's territory, both by citizens and non-citizens (Todaro, 2011). The World Bank states that Indonesia's GDP growth performance is one of the best in the world and has the third highest ranking among countries with large economies in the G-20 group (World Bank, 2020). Indonesia itself has had quite good economic growth in the last 10 years, namely around 5% annually, this level is quite good considering that many government policies have been implemented in the implementation of its economic activities. Even though so far economic growth in Indonesia has been quite good, the Indonesian economy is still lagging behind other neighboring countries.

The country concerned provides various economic goods to its population. Economic growth is the process of changing the economic conditions of a country continuously towards a better condition over a certain period. Economic growth can also be interpreted as the process of increasing the production capacity of an economy which is realized in the form of an increase in national income. Their economic growth is an indication of the success of economic development. The increase in capacity itself is determined or made possible by technological, institutional and ideological progress or adjustments to various existing situational demands (Todaro, 2011). The following is data on Indonesia's economic growth for the last 11 years:

Table 1. Data on land and building tax and electricity infrastructure and economic growth.

Year	Economic Growth (Y) (%)	Land and Building Tax (X1) (Billion)	Electricity Facility Infrastructure (X2) (%)
2010	6.22	285,812,000	67.15
2011	6.16	298,930,000	72.95
2012	6.03	289,680,000	76.56

2013	5.55	253,040,000	80.51
2014	5.00	234,760,000	84.35
2015	4.87	292,500,000	88.3
2016	5.03	194,430,000	91.16
2017	5.06	167,700,000	95.35
2018	5.17	194,440,000	98.3
2019	5.01	211,450,000	98.89
2020	-2.06	209,536,000	98.93
2021	3.02	189,248,000	98.64

Source: Bps Indonesia and World Bank, 2023

Based on the table above, the development of land and building tax fluctuates every year, where the lowest occurred in 2017 amounting to 167,700,000 billion and the highest occurred in 2011 amounting to 298,930,000, however the increase in land and building tax in Indonesia did not have an impact on economic growth. in Indonesia because the percentage of economic growth in Indonesia experiences high fluctuations every year. Where in 2018 the percentage rate of economic growth in Indonesia was 5.17%, then in 2019 economic growth in Indonesia decreased by 5.01%. Based on the explanation above, this condition is contrary to economic theory, where land taxes have an indirect effect on economic growth. If land tax increases, local original income will also increase. Furthermore, with an increase in local original income, economic growth will increase(Nicola Putra Margono, Aji Sofyan Effendi, 2019). However, the phenomenon that occurred in 2019 was that the increase in land tax was not accompanied by an increase in economic growth.

Furthermore, it can be seen in 2019. In national development, infrastructure development in the Indonesian region which is an archipelagic region has an important role, must be managed and developed seriously and continuously to create a national economy that is just, prosperous, balanced (equitable) and sustainable. In 2019, the percentage of infrastructure increased compared to the previous year, while in that year the rate of economic growth in Indonesia decreased, as did 2020. This is also inversely proportional to economic theory where the relationship between the two infrastructureplays a positive role in economic growth, namely creating jobs in the construction industry in the short term and supporting the productivity of activities in related sectors in the medium and long term.(Marwan, 2007).However, the problem is that the increase in infrastructure is not accompanied by economic growth variables. Infrastructure development is very important for a country because it aims to improve people's welfare and increase the country's economic growth. Infrastructure will be a long-term investment for a country.

To achieve this economic growth, the Indonesian government has carried out the establishment and improvement of regulations, fiscal and institutions to support investment in various sectors related to infrastructure and the achievement of priority project milestones throughout Indonesia (kppip.go.id, accessed 2021). Apart from that, equitable development is needed to increase per capita income in every region throughout Indonesia. Based on the background description above, the author can choose a title“The Influence of Land Tax and Infrastructure on Economic Growth in Indonesia”.

2. LITERATURE REVIEW

2.1 Definition of Economic Growth

Economic growth is the process of increasing output per capita in the long term. This understanding contains three main things, namely process, output per capita and long term. The process describes economic development from time to time which is dynamic, output per capita relates aspects of total output and aspects of population, and the long term shows the trend of changes in the economy over a certain period of time which is driven by internal changes in the economy. Economic growth is also defined as an increase in total output in the long term regardless of whether the increase is smaller or larger than population growth or whether it is accompanied by changes in the structure of the economy or not.

Economic growth is defined as the development of activities in the economy which causes goods and services produced to increase and prosperity to increase. High and sustainable economic growth is a prerequisite for ongoing economic development(Sukirno, 2017). Sukirno, (2017), defines economic growth as the development of activities in the economy which causes the goods and services produced to increase and the prosperity of society to increase. Meanwhile, according to Professor Simon Kuznetz, the definition of economic growth is an increase in the long-term capacity of the country concerned to provide various economic goods to its population which is determined by technological, institutional and ideological progress or adjustments to various demands of existing conditions.

2.2 Definition of Land and Building Tax

There are several kinds of meanings or definitions regarding property tax expressed by several experts, but in essence these various definitions have the same core and purpose. Among experts, land and building tax is defined as follows: The legal basis for Land and Building Tax (PBB) is Law no. 12 of 1985 as amended by Law no. 12 of 1994. General Provisions for Land and Building Tax Article 1 (Law No. 12 of 1985) is: Earth is the surface of the earth and the body of the earth beneath it. The earth's surface includes land and inland waters (including swamps, ponds and waters) as well as seas in the territory of the Republic of Indonesia. Buildings are technical constructions that are planted or permanently attached to land and/or waters. Sales Value of Tax Objects (NJOP) is the average price obtained from sale and purchase transactions that occur naturally and if there is no sale and purchase transaction, the Sales Value of Tax Objects is determined by comparing prices with other similar tax objects or the value of new acquisitions, or Sales Value of Replacement Tax Objects.

2.3 Definition of Infrastructure

The definition of infrastructure has many meanings. According to the Big Indonesian Dictionary, infrastructure means public facilities and infrastructure. According to the American Public Works Association (Stone 1974 in Kodoatie, RJ, 2005) infrastructure is the physical facilities developed or required by public agencies for government functions in the provision of water, electricity, waste disposal, transportation and services. others of a similar nature to facilitate social and economic objectives. The existence of good infrastructure will support national economic growth by acting as a catalyst in the process (Ma'ruf and Daud, 2013), so it can be said

that infrastructure has an important role in serving community activities which are the physical assets of a country or region.

In the discussion, infrastructure can be said to have the characteristics of a public good. Public goods have two main characteristics in terms of their use (consumption of public goods), namely non-rivalry and non-excludable. Rivalry is the nature of rivalry or competition in consuming or using an item. The meaning is that if an item is used by someone (user), the item cannot be used by another person (user). If someone consumes or uses an item and there is no competition with other people in consuming the item so that it does not affect a person's satisfaction in consuming the item, then it can be called a public good.

3. RESEARCH METHODS

3.1 Research Objects and Locations

The object of this research is land tax, infrastructure and economic growth in Indonesia. The author sets land and infrastructure taxes as the independent variable, while the dependent variable in this research is economic growth. The location of this research is in Indonesia.

3.2 Data Types and Sources

This research uses secondary data which is data from 2010 to 2021 sourced from the Central Statistics Agency (BPS) and the World Bank. The data used is land tax, infrastructure and economic growth in Indonesia for 2010-2021 which comes from the Indonesian Central Statistics Agency (BPS).

3.3 Data Collection Techniques

The data collection technique in this research is through library research, documentation and the internet. Literature study means the author collects data by studying literature that contains information related to the problem being researched and books related to the research theme. Documentation techniques are carried out by researchers by tracing and documenting data and information through journal quotations, the internet and other reference materials related to the object of study.

3.5 Data Analysis Methods

After the data is collected from the results of data collection, the author then determines the data analysis technique which is a method that will be used to process research data with the aim of obtaining a conclusion in this research. This research usestwo research models, namely Linear Ordinary Least Square (OLS).

The basic formula for multiple linear regression is:

$$\mathbf{Y = \beta 0 + \beta 1 LNX1 + X2 + e}$$

So the model in this research is

Where:

Y : VariableEconomic growth

β0 : Constant

LNX1 : Land and Building Tax Variable

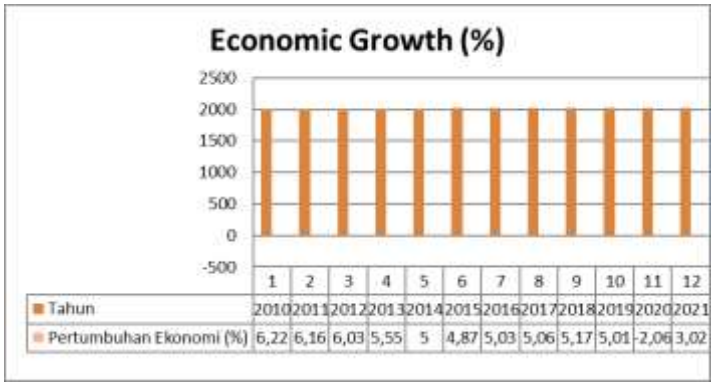
X2 : Electrical Infrastructure Variables

e : error terms

Next, the data was analyzed using regression analysis with the help of the E-views version 9 program. To fulfill the regression analysis, it is necessary to test classical assumptions and hypothesis testing, so that the estimation results avoid the problem of erroneous regression.

4. RESEARCH RESULTS

4.1 Variable Description



Source: BPS Indonesia (2022)

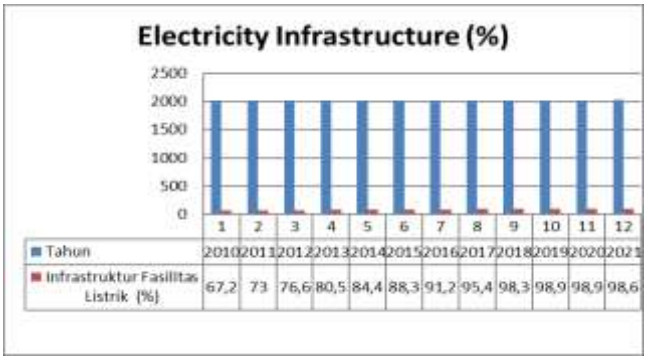
Figure 1 Development of Indonesia's Economic Growth in 2010 -2021

Based on Figure 4.1 above, it explains the development of the level of economic growth in Indonesia which tends to experience a decline compared to the previous year, then a significant decline occurred from 2019 to 2020, which was caused by the presence of the Covid-19 virus which caused many impacts on activities. economic sector, starting from increasing prices of goods, layoffs and decreasing people's purchasing power during the Covid-19 pandemic.

Source: BPS Indonesia (2022)

Figure 2 Development of Indonesian Land and Building Tax 2010 - 2021

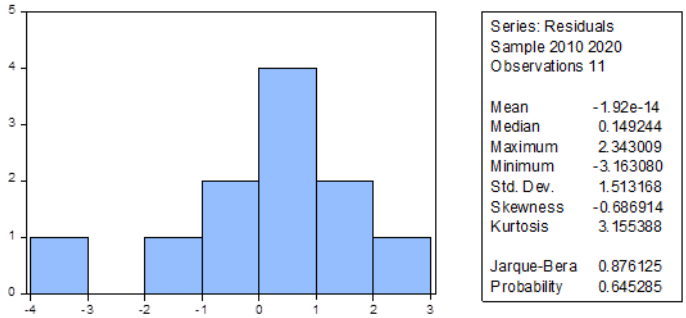
Based on figure 4.2 above, it explains that the development of land and building taxes in Indonesia has fluctuated, but tends to decrease, where the highest level of PBB revenue occurred in 2015 at 29.2 trillion, while the lowest level of revenue occurred in 2020 at 13.4 trillion. trillion, the decline in PBB revenue levels was caused by weakening the Indonesian economy which was the impact of the influx of Covid-19 which caused a weakening of economic activity.



Source: BPS Indonesia (2022)

Figure 3 Development of Indonesia's Electricity Infrastructure 2010 -2021

4.2 Normality Test Results



Source : Eviews-10 (2023)

Figure 4 Normality Test Results

From the normality histogram display above, it can be concluded that the residual data in this study is normally distributed. Because the probability value is 0.6452 > 0.05. Or the probability value obtained from the research above has exceeded the requirements for normally distributed research data.

4.3 Multicollinearity Test Results

Table 2. Multicollinearity Test Results

Variance Inflation Factors
Date: 04/08/23 Time: 18:00
Sample: 2010 2021
Included observations: 12

Variables	Coefficient Variance	Uncentered VIF	Centered VIF
C	1623.368	6239.148	NA
LNX1	11.82270	4568.941	2.827242
X2	0.006485	189.6867	2.827242

Source : Eviews-10 (2023)

Based on table 2 above, it can be seen that the VIF value of each dependent variable does not exceed 10.00, which means that there is no multicollinearity in this study.

4.4 Autocorrelation Test Results

Table 3. Autocorrelation Test Results

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.850377	Prob. F (2.6)	0.4730
Obs*R-squared	2.429410	Prob. Chi-Square (2)	0.2968

Source : Eviews-10 (2023)

Based on the LM Test in table 4.2 above, it can be seen that the Chi-Squared Probability is 0.2968 > 0.05. Which means that this research is free from indications of autocorrelation.

4.5 Heteroscedasticity Results

Table 4. Heteroscedasticity Results

Heteroskedasticity Test: White

F-statistic	24.42963	Prob. F(5.5)	0.0016
Obs*R-squared	10.56743	Prob. Chi-Square(5)	0.0607
Scaled explained SS	6.023647	Prob. Chi-Square(5)	0.3039

Source : Eviews-10 (2023)

Based on the white-Test results, it can be seen that the probability of Obs*Chi- Squared is 0.0607 > 0.05. So in this study there was no indication of heterosdasticity.

4.6 Multiple Linear Regression Results

Table 5. Multiple Linear Regression Results

Dependent Variable: Y
Method: Least Squares
Date: 04/08/23 Time: 17:59
Sample: 2010 2021
Included observations: 12

Variables	Coefficient	Std. Error	t-Statistics	Prob.
C	48.00355	40.29104	-1.936002	0.0089
LNX1	7.919193	3.438416	2.303151	0.0502
X2	0.038677	0.080529	0.480280	0.0439
R-squared	0.570376	Mean dependent var		4.730909
Adjusted R-squared	0.462970	SD dependent var		2.308569
SE of regression	1.691774	Akaike info criterion		4.116433
Sum squared resid	22.89678	Schwarz criterion		4.224950
Log likelihood	-19.64038	Hannan-Quinn Criter.		4.048028
F-statistic	5.310460	Durbin-Watson stat		1.345396
Prob(F-statistic)	0.034069			

Source : Eviews-10 (2023)

Based on the results of data processing in table 5 above, the equation is as follows:

Y = 48.00355 +7.919193 LNX1 + 0.038677 X2

1. The constant is 48.00355 meaning if the PBB value andElectrical Infrastructureis zero then Economic Growth will decrease by 48.00355%.
2. CoefficientUN regressionas big as7.919193meaning if the amountUNincreases by 1%, then Economic Growth will increase by7.919193%.

3. CoefficientElectrical Infrastructure regressionas big as0.038677meaning if the amountElectrical Infrastructureincreases by 1%, then Economic Growth will increase by0.038677%.

4.7 Partial Test Results (t Test)

1. Based on the test as shown in table 5, it can be seen that the PBB variable (LNX1) has a tcount value of 2.3031 which is greater than ttable which is 1.83311 with a significance value of 0.0502 <0.10 (at alpha 10%) meaning that it is partially PBBpositive influencef and significant for economic growth.
2. Next is the Electrical Infrastructure variable (X2) has a tcount value of 0.4802 which is smaller than ttable which is 1.83311 with a significance value of 0.0439 <0.10 meaning that it is partially the Electrical Infrastructure variable(X2) has no effect on Economic Growth.

4.8 Simultaneous Test Results (f Test)

From the test results as shown in table 5, the value of Fcount > Ftable, or 5.3104 > 4.26 means that simultaneously the independent variable has a significant effect on the dependent variable.

4.9 Coefficient of Determination (R2) and Correlation (R)

From the results of data processing, the Adjusted R.Square from table 4.1 is 0.462970, which means that the magnitude of the influence of PBB and Electrical Infrastructure on Economic Growth is 0.462970 (46.2970%), while it is influenced by other variables outside the research model. this is 0.53703 (53.703%).

From the results of data processing in table 4.1, the correlation value (R) = √R2 = √0.462970 = 0.68041 is obtained. So the relationship between the independent variable and the dependent variable is 68% strongly positively related.

5. DISCUSSION

5.1 The Effect of Land and Building Tax on Economic Growth.

The estimation results using the OLS method using E-Views 10 show that Land and Building Tax has a positive and significant effect on Economic Growth during 2010 - 2020. The results of this research are in line with research conducted by Arfah Habib Saragih (2018) with the research title " the influence of tax revenues on economic growth in Indonesia", which states that tax revenues have a positive and significant effect on economic growth in Indonesia during the 2013-2016 period. The implication of these findings is that in order to increase the economic growth of a region, continued support for tax revenues is needed. Tax revenues should also be used to fund productive projects so that they can accelerate economic growth (Arfah, 2018). The results of this research are also in line with research conducted by Estro Dariatno Sihaloho with the research title "Analysis of the influence of tax revenues on Indonesia's economic growth" which states that taxes have a positive and significant influence on government revenues and Indonesia's economic growth. This research also found that the level of government revenue has a positive impact on increasing Indonesia's total tax revenue and Indonesia's economic growth, this is because

tax revenue obtained by the government will be channeled back to finance economic sectors to make them more productive in order to increase economic growth.

5.2 The Influence of Electricity Infrastructure on Economic Growth.

The estimation results using the OLS method using E-Views 10 show that Electricity Infrastructure has no effect on Economic Growth during 2010 - 2020. The results of this research are in line with research conducted by Harry Kurniadi Atmaja (2015) with the research title "The Effect of Infrastructure Improvement on Economic Growth in Sibolga City (2015)", which states that electricity infrastructure has no effect on economic growth, this is because the need for electricity is increasing which results in the supply of electricity decreasing and has an impact on the distribution of electricity in turns, so that PLN often carries out blackouts take turns so that electricity distribution to consumers can be carried out comprehensively. However, this has a negative impact on the continuity of economic activities, because when there are rolling power outages, at that time many economic activities stop, which has an impact on decreasing economic growth. The results of this research are also in line with research conducted by Pihri Buhaerah with the research title "The Influence of Electricity Consumption and Industrialization on Economic Growth" which states that electricity infrastructure has no effect on economic growth, who believes that electricity consumption plays a quite important role in driving economic growth. The role in question is the use of electricity in the industrial production sector, this means that electricity is used for the production process to produce goods and services, but the reality on the ground is the opposite, where the use of this infrastructure is mostly used by households that do not carry out productive activities using electricity. the.

6. CONCLUSION

Based on the results of research that has been carried out, it can be concluded that:

1. Secara partial Land and Building Tax has a positive and significant effect on economic growth in Indonesia.
2. Partially, Electricity Infrastructure has no effect on Economic Growth in Indonesia.
3. Based on the results of tests carried out simultaneously, land, building and electricity infrastructure taxes have a significant effect on economic growth in Indonesia.

REFERENCES

Anisa, F. (2017). Pengaruh Infrastruktur secara Spasial terhadap Konvergensi Pertumbuhan Ekonomi di Indonesia. Ekonomi Pembangunan.

Atmaja, Harry Kurniadi, (2015) Pengaruh Peningkatan Infrastruktur Terhadap Pertumbuhan Ekonomi Di Kota Sibolga. Jurnal Ekonomi Vol. 3No. 4. Sumatera Utara.

Buhaerah, Pihri. (2018). "Pengaruh Konsumsi Listrik Dan Industrialisasi Terhadap Pertumbuhan Ekonomi, Jurnal Ekonomi dan Pembangunan Vol 26, No. 2, Economist The Indonesian Institute (TII)

Eko Wicaksono Pambudi, M. (2013). Analisis Pertumbuhan Ekonomi Dan Faktor-Faktor Yang Mempengaruhi (Kabupaten/Kota Di Provinsi Jawa Tengah. Diponegoro Journal Of Economics, 2, 1.

Erly, S. (2008). Hukum Pajak. Jakarta Salemba Empat.

Firdaus, M. (2004). Ekonometrika Suatu Pendekatan Aplikatif. Jakarta PT. Aksara.

Ghozali, I. (2007). Aplikasi Analisis Multivariate Dengan Program SPSS. Universitas Diponogoro Semarang.

Gujarati, D. N. (2004). ekonometrika dasar terjemahan. Erlangga jakarta.

Gujarati, D. N. (2006). Dasar-Dasar Ekonometrika. Edisi Ketiga. In Jakarta: Erlangga.

Hidayat, M., Hadi, M. F., & Sutrisno, S. (2017). Analisis Tingkat Partisipasi Angkatan Kerja (Tpak) Perempuan Antar Kabupaten Di Provinsi Riau. Media Trend, 12(1), 76–89. https://doi.org/10.21107/mediatrend.v12i1.2541

Kenastri. (2007). Perumusan Strategi Pembangunan dan Pembiayaan Infrastruktur Skala Besar. Erlangga jakarta.

Listrik, I., & Produksi, T. (2016). Pengaruh investasi, tenaga kerja dan infrastruktur listrik terhadap produksi sektor konstruksi antar provinsi di pulau jawa tahun 2009-2014. 1–64.

Marwan, J. (2007). Infrastruktur pro Rakyat, Strategi Investasi Infrastruktur indonesia abad 21. Pustaka Toko Bangsa.

Maryaningsih, N., Hermansyah, O., & Savitri, M. (2014). Pengaruh Infrastruktur Terhadap Pertumbuhan Ekonomi Indonesia. Buletin Ekonomi Moneter Dan Perbankan, 17(1), 62–98. https://doi.org/10.21098/bemp.v17i1.44

Muri, Y. A. (2014). Metode Penelitian Kuantitatif, kualitatif & Penelitian Gabungan. Jakarta Pranadamedia Group.

Nicola Putra Margono, Aji Sofyan Effendi, E. K. (2019). Pengaruh Pertumbuhan Ekonomi Dan Jumlah Penduduk Terhadap Penerimaan Pajak Bumi Dan Banguna Di Kota Samarinda. Jurnal Ilmu Ekonomi, 4.

NSS, R. L. P., Suryawardana, E., & Triyani, D. (2015). Analisis Dampak Pembangunan Infrastruktur Jalan Terhadap Pertumbuhan Usaha Ekonomi Rakyat Di Kota Semarang. Jurnal Dinamika Sosial Budaya, 17(1), 82. https://doi.org/10.26623/jdsb.v17i1.505

Rahardjo, A. (2013). Teori-teori Pembangunan Ekonomi, Pertumbuhan Ekonomi Dan Pertumbuhan Wilayah (Pertama). Graha Ilmu, Yogyakarta.

Saparuddin, M. (2011). Dampak Industri Kecil dan Menengah pada Kesempatan Kerja dan Pendapatan per Kapita. 10(2), 85–94.

Saragih, A. H. (2018). Pengaruh Penerimaan Pajak Terhadap Pertumbuhan Ekonomi Di Indonesia. Jurnal SIKAP (Sistem Informasi, Keuangan, Auditing Dan Perpajakan), 3(1), 17. https://doi.org/10.32897/jsikap.v3i1.103

Sihaloho, Estro Dariatno "Analisis Pengaruh Penerimaan Pajak Terhadap Pertumbuhan Ekonomi Indonesia: Pendekatan Vektor Autoregressive (2020). ISSN Print: 1411-1713 ISSN Online: 2528-150X. Universitas Padjadjaran. http://dx.doi.org/10.29264/jfor.v22i2.7370

Sinaga, S. (2021). Analisis Pengaruh Infrastruktur Terhadap Pertumbuhan Ekonomi Di Provinsi Sumatera Utara. Ekonomi.

Sukirno, S. (2017). Ekonomi Pembangunan, proses, Masalah, dan dasar kebijakan (ke 8). Jakarta Kencana.

Sukwika, S. (2007). Peran Pembangunan Infrastruktur terhadap Ketimpangan Ekonomi Antarwilayah di Indonesia. Jurnal Wilayah Dan Lingkungan, 6(2), 115. https://doi.org/10.14710/jwl.6.2.115-130

Sumaryani, W. N. (2019). Pengaruh Realisasi Penerimaan Pajak Bagi Pertumbuhan Perekonomian Negara Indonesia. Jurnal Litbang Sukowati : Media Penelitian Dan Pengembangan, 3(1), 12. https://doi.org/10.32630/sukowati.v3i1.84

Todaro, M. P. (2011). pembangunan ekonomi. Erlangga jakarta.

Valentina, S. & A. S. (2006). Perpajakan Indonesia. Jakarta Salemba Empat.

Widarjono, A. (2013). Ekonometrika (Empat). Yogyakarta.

Wihastuti, L. (2008). Pertumbuhan Ekonomi Indonesia: Determinan dan Prospeknya. Jurnal Ekonomi & Studi Pembangunan, 9(1), 30660.

Yunitasari, M. (2007). analisis hubungan antara pertumbuhan ekonomi dengan IPM Privinsi Jawa Timur. IPB (Bogor Agricultural University).

Website

https://kppip.go.id/tentang-kppip/perkembangan-pembangunan-infrastruktur-di-indonesia/

www.bps.go.id

http://junsidichaniago.wordpress.com