THE SEYBOLD REPORT

Interdisciplinary research journal in the fields of Business, Management, Entrepreneurship, Law, Computer Science & Engineering, Agriculture & its allied fields and Economic sciences.

The Seybold Report

ISSN 1533-9211

DOI 10.5281/zenodo.6655179

DETERMINANTS OF REGIONAL ECONOMIC PERFORMANCE EFFICIENCY OF SOUTH SUMATRA PROVINCE

EKA THANOMUTIARA[1*], TAUFIQ MARWA[2], DIDIKSUSETYO[3] and AZWARDI[4]

[1,2,3,4] Faculties of Economics, Sriwijaya University, Indonesia.
Corresponding Author. E Mail: handikapra2019@gmail.com

Abstract:

South Sumatra Province is one of the provinces that has abundant natural resources and wealth. One of the productivity indicators is efficiency, technical efficiency is obtained from the results of the Stochastic Frontier Analysis (SFA) calculation and the approach to measuring the effect of potential output, poverty, unemployment, and per capita income on the efficiency of regional economic performance using the Error Correction Model (ECM).The results show that in the long term the potential output variable has a significant negative effect on the efficiency of regional economic performance, while the variables of poverty, unemployment, and per capita income have no significant effect on the efficiency of regional economic performance. In the short-term equation, the potential output variable has a negative and significant effect on the efficiency of regional economic performance, the income per capita variable has a positive and significant effect, while the variables of poverty and unemployment have a positive but not significant effect on regional economic performance. The limitation of this research is the lack of reference for macroeconomic research with a technical efficiency approach, but this does not reduce macroeconomic studies in the research period.

Keywords: Stochastic Frontier Analysis (SFA), Regional Economic Performance Efficiency Techniques (ET), Error Correction Model (ECM)

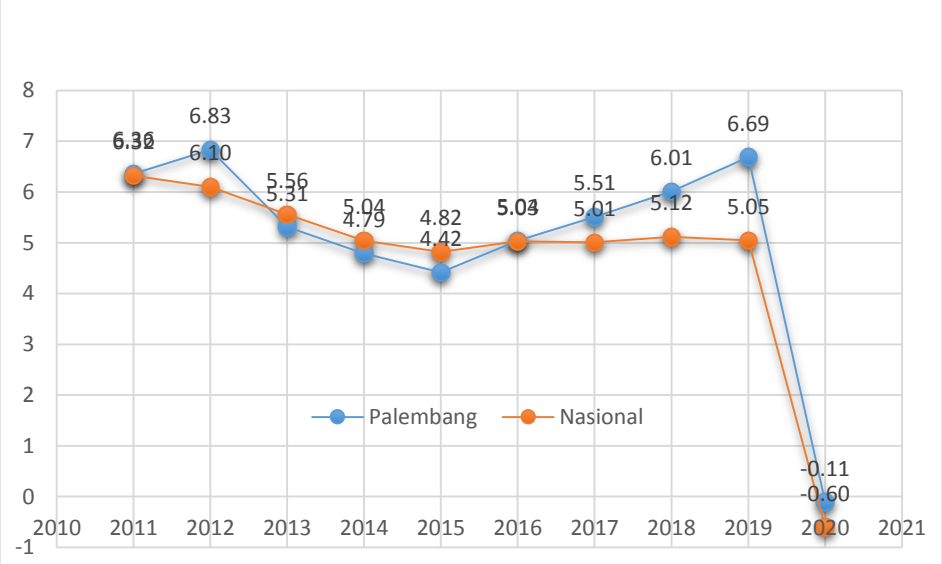
Introduction

South Sumatra Province is one of the few areas rich in natural resources, South Sumatra's natural wealth as an endowment wealth that brings South Sumatra should have an absolute advantage. Many advantages owned by South Sumatra should be able to play an important and strategic role in increasing competitiveness and strengthening regional economic performance and its effect on development. Some of the economic indicators to measure economic performance are Gross Regional Domestic Product (GDP). Judging from the side of economic growth that continuously increases its economic growth, South Sumatra Province as an area that has the potential and strength of natural resources has a strong potential in contributing to Indonesia's GDP. South Sumatra province has 17 city districts and each region has a growth rate that is not the same or varies because each region has differences in the quantity and quality of human resources supported by different geographical conditions and natural resources. To find out more clearly the economic growth of South Sumatra province will be compared with the national can be seen in the graph as follows:

ISSN 1533-9211

DOI 10.5281/zenodo.6655179

Figure 1: South Sumatra and National Economic Growth Graph the year 2011-2020



Source: BPS South Sumatra Province 2021

Figure 1 mentioned above is a comparison of the economic growth rate of South Sumatra with the rate of national economic growth in the span of 2011-2019, obtaining an illustration that the economic growth of South Sumatra experienced a dynamic tendency, from 2011 to 2012 the pace of economic growth of South Sumatra was above the national growth rate, in 2013-2015 economic growth was below the National and from 2016-2020 the pace of economic growth in South Sumatra was above the national growth rate, in 2013-2015 economic growth was below the National and from 2016-2020 the pace of economic growth in South Sumatra was above the national growth rate, in 2013-2015 economic growth was below the National and from 2016-2020 the pace of economic growth of South Sumatra was above the national growth rate, in 2013-2015 the pace of economic growth was below the National and from 2016-2020 the pace of economic growth in South Sumatra. Economic growth is on average above national economic growth. This phenomenon shows that the province of South Sumatra has a considerable contribution to national economic growth, from 2018 to 2020 the contribution of part of South Sumatra Province experienced a positive trend and continued to increase, in 2018 the contribution of South Sumatra PDRB amounted to 2.86 percent, in 2019 it increased to 2.88 percent and in 2020 the contribution of South Sumatra PDRB again increased to 2.94%, This can be realized because it is supported by the potential of abundant natural resources such as oil, gas, and coal as well as the agricultural and plantation industries.

Data on the Poor Population of South Sumatra Province has increased from 2018 to 2020, so the unemployment rate in South Sumatra province has the same trend, namely increasing continuously; it can be seen in the table below:

ISSN 1533-9211

DOI 10.5281/zenodo.6655179

Table 1 Number of Poor People and Unemployment Rate in South Sumatra Province in 2015-2020

Descriptions	Years					
	2015	2016	2017	2018	2019	2020
Poor Population (million)	1145	1101	1087	1068	1074	1082
Unemployment rate (Percentage)	5.88	4.31	4.39	4.23	4.53	5.51

Source: BPS South Sumatra Province 2021

Looking at some of the statistical data mentioned above, it is known that the economic growth of South Sumatra has an increasing trend from year to year as well but in line with economic growth, it turns out that the number of poor people has also increased, as well as the unemployment rate in South Sumatra province has increased in the same year period, it is necessary to analyze whether the economic performance of each region has been maximized or there are still obstacles. Obstacles that occur in the implementation process and policies taken in the development of regional economy and identify areas that have been able to perform well and which areas are still needed to improve their economic performance both in terms of output and input, further expected to improve the welfare of the community.

Methods

Data Types and sources

The data used in this study is secondary data using the Data Panel and involves data on 14 (fourteen) city districts in South Sumatra Province sourced from the Data Of The Central Statistics Agency of South Sumatera Province with the 11 years of research data from 2010 – 2020.

Operational Variables

Variables Of Operational in this paper uses 6 (six) variables research such: Technical Efficiency (ET), Population Amount (POP), Potential Output (OP), Poverty (POV), Unemployment (JLS), and the last variable is Percapita Income (PKP), more detail description about variables research in this paper will be described on below table as follows

The Seybold Report
ISSN 1533-9211
DOI 10.5281/zenodo.6655179

Table 2 Operational Variables

Variable	Dimension	Indicators
Technical Efficiency (ET_{it})	Interference, measurement errors, and exogenous shocks are represented by disturbance terms and are out of control through Stochastic Frontier Analysis (SFA)	A form of technical efficiency is the separation of the impact of the shock of exogenous variables on the output through the contribution of variation
Population (PoP)	Number of People	Number of persons recorded
Potential Output **(OP)**	Optimal Output Value that should be obtained under full employment conditions	The average amount of productivity at times the number of unemployed
Poverty (POV)	The number of people who cannot be able to achieve basic needs	Number of poor people
Unemployment (JLS)	A person who is not working at all is looking for a job, working less than two days a week, or someone who is trying to get a decent job	Number of people who don't have a job
Per Capita Income (PKP)	The average income of the population	Total state income is divided by the total population.

Source: Processed by researchers (2022)

Analysis Methods

The analytical methods used in this study were carried out as follows:

Analytical methods are performed to look at the factors that affect engineering efficiency. This study uses the Error Correction Model (ECM) method by using the help of the reviews 10 programs for data processing and interpreting into Ms. Word.

1. **Error Correction Model (ECM)** Testing
   a. Stationarity Test
      The Unit Root Testis used to test the stationarityof research data. Non-stationaryregression most likely results in lancing regression (Widarjoino, 2007). When the ADF Prob< α, then the variable is declared stationary.
   b. Co-integration Test
      The co-integration test is used to give an early indication that the model is
      Used to have a long-term relationship (Widarjono, 2007). In the Johansenco-integration test, decision-making is co-integration or not When the trace statistic > 0.05 critical value, then there is a long-term relationship.
   c. Error Corecction Model (ECM)

The Seybold Report
ISSN 1533-9211
DOI 10.5281/zenodo.6655179

The ECM method was introduced by Sargan and later further developed by Hendry which was eventually popularized by Engle-Granger. This method has several main uses in overcoming non-stationary data and lancing regression problems.
Long-term modelas follows:

$$ET_{it} = \beta_0 + \beta_1 OP_{it} + \beta_2 POV_{it} + \beta_3 JLS_{it} + \beta_4 PKP_{it} + \varepsilon \text{----------(1)}$$

$$D(ET_{it}) = \beta_0 + \beta_1 D(OPit) + \beta_2 D(POV_{it}) + \beta_3 D(JLS_{it}) + \beta_4 D(PKP_{it}) + \varepsilon \text{ --------- (2)}$$

The Short-Term Model is:

$$ET_{it} = \beta_0 + \beta_1 OP_{it} + \beta_2 POV_{it} + \beta_3 JLS_{it} + \beta_4 PKP_{it} + \beta_{5\ ECT-1} \text{---------- (3)}$$

$$D(ET_{it}) = \beta_0 + \beta_1 D(OPit) + \beta_2 D(POV_{it}) + \beta_3 D(JLS_{it}) + \beta_4 D(PKP_{it}) + \beta_{5\ ECT-1} \text{-(4)}$$

Blatant:

D	= Different
β_0	= Constant
β_1,.....B_n	= Independent Variable Coefficient
ECT	= Error Correction Model

1. Classic Assumption Testing

This study used panel data, according to Verbeek (2000), Gujarati (2003), Wibisono (2005), and Aulia (2004) conclude that "Another advantage to panel data is that panel data has implications of not having to be done classical assumption testing", then panel data does not require testing of classical assumptions such as normality or autocorrelation. For this reason, in the study of classical assumptions, this is limited to only conductingMulticollinierity and Heteroskedasticity tests while normality tests and Autocorrelation tests are ignored.

a. Multicollinearity Test
   Linear relationships between exogenous variables in multiple regressions are called multicollinearity (Widarjono, 2007). When the matrix correlation < 0.9, there are no symptoms of multicollinearity between independent variables.
b. Heteroskedastity Test
   Variable disruptors that have non-constant variants are called heteroskedasticity (Widarjono, 2007). On the white test, When Prob. Chi-square > α, then it is free from the symptoms ofheteroskedasticity.

2. Hypothesis Testing

According to Nachrowi (2006), hypothesis tests are useful for testing the significance of the regression coefficient obtained. That is, the coefficient of regression obtained statistically is not equal to zero, because if it is equal to zero then it can be said that there is not enough evidence to state that free variables influence the bound variables. For this purpose, then all regression coefficients must be tested. There are two types of hypothesis tests against regression coefficients that can be done, namely:

The Seybold Report
ISSN 1533-9211
DOI 10.5281/zenodo.6655179

a. Test F (Simultaneous)

Criteria for simultaneous hypothesis test decision making are as follows (Widarjono, 2013):

- If F counts > F table, then the statistical hypothesis or Ho is rejected. The variables of Potential Output (OP), Poverty (POV), Number of Unemployed (JLS), and Per capita income (PKP) together affect the Efficiency of Economic Performance Techniques in the South Sumatra Region.
- If F calculates < F table, then the statistical hypothesis or H1 is rejected. The variables of Potential Output (OP), Poverty (POV), Number of Unemployed (JLS), and Per capita income (PKP) together affect the Efficiency of Economic Performance Techniques in the South Sumatra Region.

b. T-Test (Partial)

The criteria for taking partial hypothesis test results are as follows (Widarjono, 2013):

- If t count > t table or -t count < -t table, then the statistic or Ho hypothesis is rejected. This means that the variables of Potential Output (OP), Poverty (POV), Number of Unemployed (JLS), and Per capita income (PKP) partially affect the efficiency of Economic Performance Techniques in South Sumatra.

3. Coefficient of Determination (R^2)

Korf. Determination (R^2) is used to measure the success rate of the model used in predicting the value of bound variables in other words R2 indicates how many percent of free variables are used. in the model can explain the bound variables. The value of R2 is located between 0 (zero) and 1 (one). The closer one is, the model can be said to improve. It should be noted that the value of R2 can be negative if it does not use interceptions or constants (Widiarjono, 2007).

Results and Discussion

1. Classic Assumption Testing
   a. Multicollinearity Test
      Model equation Determinant EphysiologistTechnicity in the general correlation between exogenous variables does not correlate> 0.9. it can be concluded that both models are free from symptoms of multicollinearity.
   b. Heteroskedastity Test
      The Theheteroskedasticity test showed no symptoms ofheteroskedasticityin the model with a Prob Chi-Squarescoreof 0.1333> 0.05 means insignificant, so the model is believed to avoid Heteroskedasticity.

Conclusions the result of the classical assumptions test shows that this study is free from assumptions or symptoms of Multicollinearity, Heterodkedastity.

2. ECM Testing
   a. Test Unit Root

The Seybold Report
ISSN 1533-9211
DOI 10.5281/zenodo.6655179

Table 3 Stationary Test Results

Method	Statistics	Prob.**	Cross-Sections	Obs
Null: Root unit (assumes common unit root process)				
Levin, Lin & Chu t*	-2.15241	0.0157	5	763
Null: Root unit (assumes individual root unit process)				
Im, Pesaran and Shin W-stat	-4.99525	0.0000	5	763
ADF - Fisher Chi-square	58.2276	0.0000	5	763
PP - Fisher Chi-square	62.9549	0.0000	5	765

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Source: Processed Data E views 10

From table 3 data known all probability registration < 0.05 percent, both from Levin test, Latest, Pesaran and Shin W-stat, ADF – Fisher Chi-square, and PP-Fisher Chi-square, it can be stated that all stationary variables on degree 1 (unit root test).

b. Co-integration Test
The test used in this study was the Johansen Cointegration Test.

Table 4 Johansen Co-integration Test Results

Unrestricted Co integration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigen value	Trace Statistics	0.05 Critical Value	Prob.**
None *	0.180536	97.61543	69.81889	0.0001
At most 1 *	0.164385	67.94874	47.85613	0.0002
At most 2 *	0.139474	41.19021	29.79707	0.0016
At most 3 *	0.094354	18.80867	15.49471	0.0152
At most 4 *	0.026761	4.041711	3.841466	0.0444

Source: Processed Data Eviews 10

Based on table 4, it can be concluded that there is a co-integration in this study, with evidence that trace statistics (97.61543) > 0.05 critical value (69.81889), meaning that there is a long-term relationship of independent variables (potential output, poverty, number of unemployed and Percapita income) to dependent variables (engineering efficiency).

ISSN 1533-9211

DOI 10.5281/zenodo.6655179

Table 5 Long-Term Regression Results

Dependent Variable: ET

Total panel (balanced) observations: 154

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.264832	0.284325	4.448545	0.0000
OP	-0.043966	0.019706	-2.231098	0.0273
POV	0.007585	0.024038	0.315555	0.7528
JLS	0.005159	0.021832	0.236289	0.8136
PKP	0.031950	0.026027	1.227533	0.2217

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.552353	Mean dependent var	0.924854
Adjusted R-squared	0.496397	S.D. dependent var	0.039024
F-statistic	9.871222	Durbin-Watson stat	0.915671
Prob (F-statistic)	0.000000		

Source: Output E views 10, data processed

From the results of the co-integration test can be formed a long-term equation as a result of regression in table 3, as follows:

$$ET = 1.264832 - 0.043966OP - 0.007585POV + 0.0005159JLS + 0.031950PKP + \varepsilon$$

c. Error Correction Model (ECM) Test

Before obtaining a short-term equation, an Error Correction Term (ECT) test is the performed totoldtoee if there is a relationship between long-term and short-term equations or in other words that the data has been integrated.

Table 6 Error Correction Term Test Results

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
ECT(-1)	-0.534432	0.071819	-7.441359	0.0000
C	0.000142	0.002136	0.066359	0.9472

Source: Output E views 10

It can be seen in table 6 that the value of the ECT coefficient (-1) is negative 0.534432 with a probability rate of 0.000 < 0.05 percent, itcan be said that the data has been integrated.

The Seybold Report
ISSN 1533-9211
DOI 10.5281/zenodo.6655179

With the discovery of the phenomenon of long-term and short-term relationships, the next step is to approach the Error Correction Model (ECM) to see whether there is a relationship between variables in the short term.

Table 7 Error Correction Model (ECM)Regression Results

Dependent Variable: D(ET)
Total panel (balanced) observations: 140

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.007773	0.002795	-2.780665	0.0063
D(OP)	-0.047936	0.012970	-3.695856	0.0003
D(POV)	-0.045601	0.027565	-1.654324	0.1007
D(JLS)	0.011995	0.013730	0.873588	0.3841
D(PKP)	0.232594	0.065051	3.575550	0.0005
ECT_1	0.395603	0.089326	4.428762	0.0000
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.528846	Mean dependent var		0.000340
Adjusted R-squared	0.458757	S.D. dependent var		0.028755
F-statistic	7.545354	Durbin-Watson stat		1.658957
Prob(F-statistic)	0.000000			

Source: Output E views 10, data Processed

Based on table 7, a short-term equation can be formed and becausethe data is stationary at the standard level, the equation becomes as follows:

$$ET_{it} = -0.007773 - 0.047936OP_{it} - 0.045601POV_{it} + 0.011995JLS_{it} + 0.232594PKP_{it} + 0.395603_{ECT-1+} \varepsilon$$

In table8 it can also be seen that the probability value of ECT is significant at the significance level of α = 5 % (0.05) and the coefficient is positive. Then it can be said that the short-term equation is valid.

3. Hypothesisassessment
   a. Test F
      The results of the F (simultaneous) test in this study were made in one table of information as follows.

The Seybold Report
ISSN 1533-9211
DOI 10.5281/zenodo.6655179

Table 8 Test Results F

F-Table	F-Count		Conclusion
	Jk. Short	Jk. Long	
3.48	7.545354	9.871222	Significant

Source: Output Eviews 10 (processed)

Based on table 8, shows that in both long-term and short-term relationships, variables of potential output, poverty, unemployment, and per capita income simultaneously have a significant effect on the Efficiency of Regional Economic Performance Techniques

b. T-Test
The results of the t-test in this study will be distinguished between the results of the t-test in the long term and the short term.

Table 9 Test Result t (long-term)

Variable	Prob.	Sig's level.	Conclusion
OP	0.0273	α = 5%	Significance
POV	0.7528		No Signifikan
JLS	0.8136		No Signifikan
PKP	0.2217		No Signifikan

Source: Output E views 10 (processed)

Based on table 9, shows that, in a long-term relationship, the variables of Potential Output, Poverty, Unemployment, and Percapita income partially have a significant positive effect on the Engineering Efficiency of regional economic performance.

Table10Test Result t (short-term)

Variable	Prob.	Sig's level.	Result	Conclusion
OP	0.0003	0.05	H_1 accepted	Significance
POV	0.1007	0.05	Ho accepted	No Signifikan
JLS	0.3841	0.05	Ho accepted	No Signifikan
PKP	0.0005	0.05	H_1 accepted	Significance

Source: Output Eviews 10 (processed)

Based on table 10, shows that in the short-term relationship, the variables of Potential Output and Percapita income have a significant effect on the Efficient Economic Performance of the

The Seybold Report
ISSN 1533-9211
DOI 10.5281/zenodo.6655179

South Sumatra Region, while the variables of Poverty, Unemployment, and effect are not significant affect on the efficiency of performance EkonomiDaerah partially.

c. Determination Coefficient Test (R^2)
The coefficient of determination (R^2) is a concise measure that informs how much influence independent variables have on dependent variables expressed in the form of percentages.

Table11 Coefficient of Determination (R^2)

Coefficient of Determination	R^2 value
Jk. Long	0.552353
Jk. Short	0.528846

Source: Output Eviews 10 (processed)

Based on table 11, the value of R^2 in the short term is 0.528846. This suggests that the short-term relationship variables Potential Output, Poverty, Unemployment, and Per Capita Income can explain that 52.88 percent affects the efficiency of regional economic performance, while 45.80 percent is influenced by other independent variables not included in the study. Meanwhile, the value of R2, in the long run, is 0.552353. This shows that in the long-term relationship variables potential output, poverty, unemployment, and per capita income affect the technical efficiency of regional economic performance by 55.24 percent, while the rest is influenced by other independent variables that were not included in the study.

Discussion

Effect of Potential Output (OP) on Efficiency of Regional Economic Performance

The results showed that the short and long-term potential output variables have a strong relationship to the efficiency of regional economic performance with short-term significance. by 0.00031< α 0.05 with a coefficient index of 0.047936 or 4.79 percent and in the long run the resulting coefficient is 0.043966 or 4.40 percent with a probability significance of 0.0277 < α 0.05. This means that the influence of this potential output is so strong that if the potential output increases by 1 percent it will lower the standard engineering efficiency index by 4.79 percent in the short term and 4.40 percent in the long run. The potential output which is a revenue lag that should be optimized by local governments is the higher the potential generated the more efficient economic performance will be lower, in this condition the economic performance of the region has not given all the natural resources in the south Sumatra area so that it has an impact to the pressure of productivity and can have an impact on regional economic growth. Of the fourteen urban districts in South Sumatra province that were used for research, objects recorded with the highest index of potential output are Palembang City, Regency Musibanyuasin and the lowest are Lubuklinggau, EmpatLawang, OganKomeringUlu Selatan regency, and OganIlir.

The Seybold Report
ISSN 1533-9211
DOI 10.5281/zenodo.6655179

Effect of Poverty (POV) on the Efficiency of Regional Economic Performance

In this study it is known that in the short term the poverty variable does not affect the efficiency of the economic performance of the South Sumatra region, this can be known from the level of significance of the data. Reaching 0.1007 > α 0.05, for the long term did not have a significant influence on the efficient performance of the regional economy by recording a significant result with a probability of 0.7258 > α 0.05, however, although it does not have a strong influence on the efficiency of regional economic performance, it can be analyzed that although it is not significant, it still influences the economy. Efficiency means that when poverty increases by 1 percent in the short term it will affect efficiency by minus 4.56 percent in the long term. The length of poverty will reduce efficiency but still grow by 0.76 percent. City districts in South Sumatra province that have the largest number of poor people are Palembang City, OganKomeringIlirRegency, MusibanyuasinRegency, and BanyuasinRegency and the lowest number of poor people are Prabumulih City, LubukLinggau City, EmpatlawangRegency, and South OganKomeringUluRegency.

Effect of Unemployment on the Efficiency of Regional Economic Performance

Variable unemployment in this study showed the results that variable unemployment did not have a strong and significant influence on the economic performance of the South Sumatra region with processed data results. The probability index of 0.3841 > α 0.05, as well as the influence on the long term probability, reaches 0.8136 α 0.05, meaning that the number of unemployed does not affect the efficiency of the region's economic performance either in the short term and the long term. But although it does not have a strong influence on the efficiency of economic performance, it is necessary to note specifically that this variable number of unemployed has the potential to suppress growth. Efficient economic performance of the region.The citydistricts that account for the highest number of pengangguran are Palembang City, OganKomeringIlirRegency, BanyuasinRegency and OganKomeringUluTimurRegencyandThe areas with the lowestnumber of unemployed areLubukLinggau City, EmpatLawangRegency, OganKomeringUlu Selatan Regency and PrabumulihCity.

Effect of Per Capita Income on Regional Economic Performance Efficiency

Per Capita income in this study has a strong and significant influence in the short term, this can be seen from the results of short-term equation regression, the probability rate obtained is 0.0005 < α 0.05 with a coefficient value of 0.232594 or 23.26 percent, while in the long term variables Percapita income (PKP) the results of regression equations Show a probability level of 0.2217 with a coefficient of 0.0031950. This shows that per capita income is very strongly affecting the efficient growth of economic performance in South Sumatra province where with an increase of 1 percent PKP will increase growth in the efficiency of the regional economic performance by 23.26 percent. While in the long-term equation per capita income does not have a strong claim to the growth of efficiency of regional economic performance because the probability level is located above alpha 0.05 percent. Although this per capita income does not have a strong influence on efficient economic performance, a growth of a 1

ISSN 1533-9211

DOI 10.5281/zenodo.6655179

percent increase in per capita income will be able to increase the efficiency of regional economic performance by 3.20 percent. The high-distributed city district areas areMusiBanyuasin Regency, MuaraenimRegency, Palembang City, Musirawasregency while daerah is distributed The lowest isFourLawang Regency, OganKomeringUluTimur Regency, OganKomeringUlu Selatan Regency and OganIlirRegency.

From the results of research on several areas located in South Sumatra Province, the areas that have the highest level of efficiency, in general, are the areas that have the highest growth rate with The lowest number of unemployed so the regions that have efficiency in economic performance become effective, two factors that greatly affect the productivity owned by each The area will thus form the economy of South Sumatra province. So until this research also has similarities with Nicholson's research (2002) which state that Efficiency is translated by usefulness, which is not only considering the output results, but also determined by power, effort, or sacrifice to achieve results so that there is no waste. This research has also been under the opinion of Harrick and Charles (2008) who states that the use of production factors is said to be technically efficient if the production factor used produces maximum production. Implicitly, the results of this study are also following Oteng-Abayie's study, Eric Fosu (2017) who concluded that increased efficiency can increase TFP growth and productivity.

Conclusions and Suggestions

Conclusion

Areas that have high economic growth and low unemployment will be able to become technically high-efficiency areas. Areas that have a high coefficient of engineering efficiency can be called useful areas that can manage the resources owned by their respective regions. The resulting potential output has a significant relationship in the long run, while sustainability, unemployment, and per capita income have no significant relationship in the long run. , while in the development of short-term relationships it is known that potential output and per capita income have a strong influence on the efficiency of engineering while poverty and unemployment do not have a strong influence on engineering efficiency,

Suggestion

Local governments must be able to optimize all the potential and resources owned by the region, open jobs, and reduce welfare so that the level of community welfare will increase. Engineering efficiency is a standard produced in a process of achieving productivity, if the efficiency of economic performance can be achieved then economic growth will increase and the level of welfare. The community will increase as well. Reducing the number of unemployed and optimizing regional economic growth will be able to increase the growth of efficiency of regional economic performance technically.

References

Arazmuradov, Annageldy; Martini, Gianmaria; Scotti, Davide (2014). Determinants of total factor productivity in former Soviet Union economies: A stochastic frontier approach. Economic Systems, 38(1), 115–135. doi:10.1016/j.ecosys.2013.07.00

ISSN 1533-9211

DOI 10.5281/zenodo.6655179

Arsyad, Lincoln. 1999. Introduction to Regional Economic Planning and Development. BPFE. Yogyakarta

Aulia, T. (2004).Econometrics Training Module. Surabaya: Faculty of Economics.

Baltagi, Bagi (2005). Econometric Analysis of Panel Data, Third Edition.John Wiley & Sons.

Bronson, William H. 1979. Macroeconomic, Theory and Policy, second edition.Journal by Isyani and Indira M. 2005.Journal of Development Economics.Vol. 6No. 2. UMS Press. Surakarta.

Central Statistics Agency, 201 0-2020, South Sumatra In Numbers, BPS, South Sumatra Province.

Daniel. Moehar (2002).Introduction toAgricultural Economics. Jakarta: BumiAksara.

Gujarati, D.N. (2003), Basic Econometrics. New York: Mc.Graw-Hill.

Kumbhakar, Subal C., C. A. Knox Lovell. (2000). Stochastic Frontier Analysis. Cambridge University Press

Kuncoro, Mudrajad, 2015, Economic Indicators, Yogyakarta: UPP STIM YKPN

Kuncoro, Mudrajad. 2004. Autonomy & Regional Development, Reform, Planning, strategi, and Opportunity, Jakarta: Erlangga.

Ministry of Finance of the Republic of Indonesia. Review of The Policy of Strengthening Regional Competitiveness in the Framework of Improving Community Welfare. http://perpustakaan.bappenas.go.id/ was accessed on January 4, 2019.

Miller, Roger LeRoy and Roger E. Meiners, 2010. Intermediate Microeconomic Theory, Jakarta: PT Raja GrafindoPesada

Miller, S.M., and A.G. Noulas, "The Technical Efficiency of Large Bank Production", Journal of Banking and Finance, 20 (April 1996): 495-509.

Nachrowi, D. Nachrowi, and HardiusUsman. 2006. Popular and Practical Approaches to Econometrics for Economic and Financial Analysis. LIFE-UI

National DevelopmentPlanning Agency, 2006. Industrial ClusterDevelopment Guide for High Competitive Regional Economic Development. Jakarta: Directorate ofSpecial and Disadvantaged Area Development.

Oteng-Abayie, Eric Fosu (2017). Technical Efficiency and Total Factor Productivity of Rural Banks in Ghana.Cogent Economics & Finance (2017), 5:1366088.

Soekartawi. 2003. "Economic Theory of Production With The Subject of Analysis of Cobb-Douglas Functions". Jakarta: CV Rajawali.

Verbeek, M. (2000), A Guide to Modern Econometrics.Baffins Lane-Chichester: John Wiley& Sons, Ltd.

Wibisono, Y. (2005). Basic Econometrics Training Module.Depok: Lab. ECONOMICS FE-UI.

Widarjono, Agus (2007). Econometrics: Theory and Application to Economics and Business, second edition. Yogyakarta: Ekonisia FE Islamic University of Indonesia.