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THE ANALYSIS OF LOCAL GOVERNMENT EXPENDITURE EFFICIENCY AND ITS IMPACT ON ECONOMIC GROWTH IN INDONESIA

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Abstract

The instrument of decentralization in Indonesia is expected to be able to improve efficiency of public expenditure and further drive economic growth in the regions. However, regional economic growth after the decentralization is still lower than that of before the policy enactment in Indonesia. This raised question whether or not the public expenditure have been efficient after the decentralization and whether or not this efficiency makes positive influences on the economic growth. This research studies correlation between the public expenditure efficiency and the economic growth in East Java and Central Java. The object of this research is public expenditure regencies / cities in East Java and Central Java. The public expenditure in East Java consists of 29 regencies and 9 cities. The public expenditure in Central Java consists of 29 regencies and 6 cities. The data source is pooled data from 2011 to 2016. The analysis is divided into two stages. First, public expenditure efficiency is measured by using Stochastic Frontier Analysis (SFA) method. The selection of inputs and outputs in this research is based on public expenditures' functions. In the second stage, regression analysis is conducted to examine the impacts of the public expenditures' efficiency scores and other determinants on the regional economic growth. The research result shows that, in East Java and Central Java, the public expenditure efficiency scores have positive and significant correlation with the economic growth in the region. Hence, the bigger the efficiency scores of the regional expenditure, the higher the economic growth in the region.

Keywords: Stochastic Frontier Analysis (SFA); Expenditure Efficiency; Regional Economic Growth

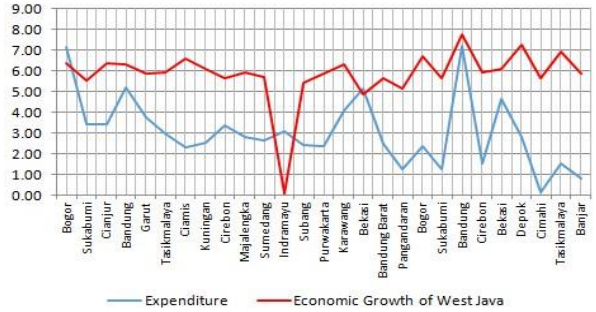
INTRODUCTION

The evaluation of public expenditure efficiency is still at the academic and political debate in the public sector. The comparison and measurement of each government level performance remain a relevant issue in the current agenda [1]. The performance evaluation is still considered as the main key for police makers' decision, and the efficiency of government expenditure is one of the main issues in public finance[2].

Legal framework for Indonesia's decentralization process are Law No. 22/1999 on regional governance and Law No.22/1999 on fiscal balance between the central and regional expenditures and in 2004, they were replaced by Law No. 32/2004 and Law No. 33/2004. Decentralization gives autonomy for public expenditures to manage and to organize their affairs.

The main effect of fiscal decentralization in Indonesia is to provide improved allocation and therefore improved efficiency. Improved efficiency is the main positive economic factor to come from fiscal decentralization. This is the classic effect described by Musgrave and is the main impact sought by fiscal decentralization [3][4]. Efficiency gains rest on the presumption that public expenditure are much better in identifying and fulfilling the needs of households, since they are closer to them, and in mobilizing and using public resources to pay for goods and services having purely public impacts [5]. Another opinion which supports the notion that decentralization can increase political participation in the elections would make public expenditure more responsive to the needs of regions than the central expenditure [6][7].

The increased efficiency of the public expenditure is expected to drive economic growth in the region. According to Oates, fiscal decentralization will be able to increase economic growth and social welfare, because public expenditure will be more efficient in the production and supply of public goods [6]. However, the economic growth after the decentralization is still lower than that of before the decentralization in Indonesia. This evidence was showed by the data



Graph 1.The relationship Expenditure and Growth of Cities and Regencies 2016 in West Java

Graph 2. The relationship Expenditure and Growth of Cities and Regencies 2016 in Banten

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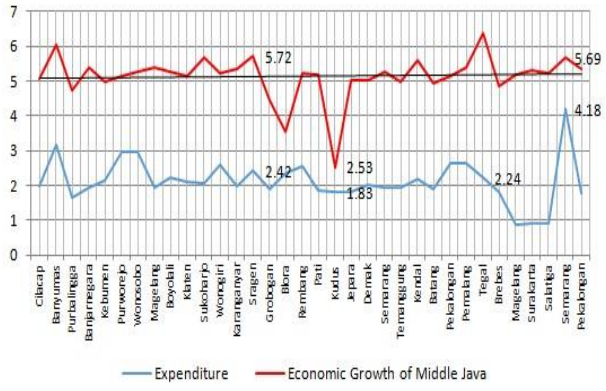
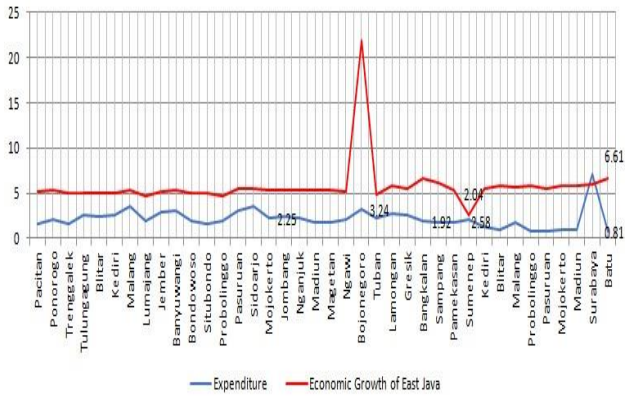


Source: DJPK, 2017

Graph 3. The relationship Expenditure and Growth of Cities and Regencies 2016 in Middle Java



Graph 4. The relationship Expenditure and Growth of Cities and Regencies 2016 in East Java

The above reality indicated that the relationship between the role of regional economic activity to be determined by the presence of other factors, something like the efficiency of expenditure in each of these areas, especially public spending on education, health, and infrastructure. The awareness to the importance of the efficiency of public expenditure has been a large consensus, so any changes on budget policy always include the efficiency budget aspect as policy targets.. However, studies on the impact of the policy on the efficiency of budget is still limited [8]. Based on the phenomena of economic development above, that raise the question whether or not the public expenditures' expenditure have been efficient after the decentralization and whether or not this efficiency makes positive impacts on the regional economic growth.

The research question of this study is (1) to measure the condition and comparison the efficiency of public expenditures in regencies/cities in Central Java and East Java; and (2) to analyze the impact of the efficiency of public expenditures along with variable sources of income and labour on the regional economic growth in Central Java and East Java.

The rest of the paper is organized as follows: Section 2 will provide a literature review to place the research into context. Data and the methodology being used in this research will be explained in Section 3. Then, the result of comparative efficiencies will be described in section 4. Discussion of this research will be presented in section 5. And the last, Conclusion and recommendation will be appeared in section 6.

Literature Review

The theory used in explaining conditions and comparison the efficiency of public expenditure and its impact on the economic growth of regencies and cities in Indonesia are: (1) Cobb–Douglas production function. Cobb-Douglas production function has constant returns to scale [9]. If all inputs (capital and labor) are increased by the same proportion, then output would also increase by the same proportion. (2) Solow's Neo-Classical Economic Growth Model. In theory that was developed by Robert Solow explained that investment, savings, population growth, and technological have effect on the economy and its growth rate. If a country set aside most of their income into savings and investment, the country will have a steady-state capital stock and high levels of income.

Regarding the measurement of the efficiency in the private sector dates from the seminal contribution of Farrel as in [10] [11]. The issue of efficiency in the local government has been showed since the 1990s. The surviving literature on the municipal efficiency analysis can be divided into two branches [12]. On the one hand, there are various studies on individual public services, such as hospitals, energy provision, water, sewage disposal, municipal saving banks, road maintenance, solid waste, public libraries, fire protection, local police service, public transportation and pre-school education (for an overview see reference [13]. On the other hand, there are studies that analyze global municipal efficiency for various countries: Belgium [14], Norway [15], Spain [16][5], Portugal [17][18], Czech Republic [19], Japan [20] Germany [21][22][23], Greece [12], and Italy [24][25]. The second type of the researches attempts to analyze the relationship between municipal performances and some important topics, like the effect of public function decentralization on the regencies and cities, the impact of fiscal decentralization, the effect of spatial closeness between regencies and cities, and others. According to many authors, there is an advantage in the use of a comprehensive approach, compared to the researches focused on specific functions: it the ability to take into account the opportunity cost perceived by the regencies and cities in deciding the allocation of resources to different services, the synergies of expenditure and the quantification of the total savings of resources.

In this paper the analysis of the public expenditure efficiency of the regencies and cities in Indonesia is performed through Stochastic Frontier Analysis (SFA), and regression analysis is also conducted to examine impacts of the public expenditures' efficiency scores and other determinants on the economic growth. The choice of the efficiency in cities and regencies framework is undoubtedly linked to its topical feature: even the regencies and cities in Indonesia have promoted institutional and administrative reforms to overcome the presence the inefficiency in the regencies and cities expenditure, in particular in relation to the public expenditure efficiency. For this reason, in this context a specific attention to the condition of efficiency level in regencies and cities effect on the economic development, adding the new evidence to the existing literature (see [13][12].

From the methodology point of view, there are alternative available methods for the efficiency analysis of production processes in both private and public sector. They mainly differ in the way the unknown and unobservable efficiency frontier inferred from the data. These different techniques can be classified basically in two alternative approaches: the econometric and the optimization approach. The first one specifies a production function and normally recognizes that the deviation away from this given technology (as measured by the error term) is composed of two parts, one representing randomness (or statistical noise) and the other inefficiency. Among the various techniques belonging to the econometric approach the "stochastic frontier analysis" (SFA), introduced by Aigner et al. [26], plays a central role. Following by Worthington [11], the first studies of local government cost efficiency with this approach are proposed by De Borger and Kerstens [14]. *On the contrary*, the mathematical programming approach seeks to evaluate the relative efficiency of one unit compared to the others. The most commonly employed version of the optimization approach is the linear programming model referred to as "data envelopment analysis" (DEA), introduced by Charnes et al. [27], based on the concept of efficiency proposed by Farrell in [10][28][29]. DEA essentially clculates the economic efficiency of a given the organization with respect to the performance of other organizations producing the same good or service, rather than against an idealized standard of performance.

The previous studies have done limited research related with this topic. The study about the impact of expenditure efficiency toward economic growth ever conducted by R Yabbar [30]. The result is the improvement of efficiency level in education and health sector had no impact on economic growth. This study also uses other determinant factors on economic growth. Research about the impact of Public Own Revenue (PAD) and Transfer Income on economic growth has been done by Siswantoro [31]. The results show that PAD has positive and significant effect on economic growth. Transfer Income has also positive effect on economic growth. The study gives conclusions that Public Own Revenue (PAD) has positive effect on regional economic growth in 2008 and has negative effect on regional economic growth in 2009. The result also shows that Transfer Income has the most significant effect on regional economic growth. Transfer Income has positive effect on regional economic growth in 2009 and negative effect in 2008 & 2010.

METHODS

Techniques of Analysis

The technique of analysis to be used in this study is divided into two stages:

First stage, by using Stochastic Frontier Analysis (SFA), as an econometric approach, the stochastic frontier analysis technique developed by independently from the seminal papers of Aigner, Lovell and Schmidt [26] and Meeusen and vam den Broeck [9]. The initial model specification was a production function specified for cross-sectional data with an error term decomposed into one that accounts for random effects and another that relates to technical efficiency. The specification model used in this study is influenced by the works of Grigoli and Kapsoli in [32] [33] and Dutu and Sicari [34]. Public expenditure is used as input variable. Then, the output variable of public expenditure in this research focuses on the performance of public expenditure in general but limited to the provision of certain public services such the number of students, the number of teachers and the number of schools as the output of education expenditure. The output of health expenditure is the number of community health centre, the number of medical personnel, and the number of paramedic staff. The output of infrastructure expenditure is proportion of good road, access to fresh Water, irrigation, and access to electricity. In detail, the indicators of input and output that used in this research can be seen in Table 1.

Table 1 Input and Output Indicators

Input	Output	References
Education Expenditure of function	The number of students The number of teachers The number of schools	[35][36]
Health Expenditure of function	The number of community health centre The number of medical personnel The number of paramedic staff	[23]
Infrastructure Expenditure of function	1. The proportion of good road 2. Access to fresh Water 3. Access to irrigation 4. Access to electricity	[23]

The three functions cover about 75% of the total budget. Thus, in this research, it is assumed that by using that three functions can describe the pattern of public expenditure in Indonesia. If the efficiency score is less than 1, the efficiency of the public expenditures is in a frontier or inefficient, whereas if the efficiency score is equal to 1, then the efficiency of the public expenditures is at the frontier or efficient. Hence, the bigger the efficiency scores of the regional expenditure, the more efficient public expenditure relative to other public expenditures in the region

In the second stage, regression analysis is conducted to examine impacts of the public expenditures' efficiency scores and other determinants on the regional economic growth. The efficiency scores is the output from SFA method that obtained from the first stage. Other determinants that used are Public Own Revenue, Transfer Income, and Labor. Summary description of the variables and hypotheses in this research are presented in Table 2.

Table 2. Variables Description and Research Hypothesis

Independent Variable	Description	Dependent Variable	Data Resources	Research Hypotheses
SE	The efficiency of public expenditure in each regencies and cities	Economic Growth	Autonomy Directorate General in Ministry of Finance (DJPK)	Positif
PAD	Local Own Revenue	Economic Growth	Autonomy Directorate General in Ministry of Finance (DJPK)	Positif
DP	Transfer (sharing fund (DBH), general allocation fund (DAU), specific allocation fund (DAK)	Economic Growth	Autonomy Directorate General in Ministry of Finance (DJPK)	Positif
Labor	Number of people employed	Economic Growth	Central Bureau of Statistic (BPS),	Positif

Sources of Data

The object of this research is public expenditure (regencies/cities) in Central Java and East Java. The public expenditure in Central Java consists of 29 regencies and 6 cities. The public expenditure in East Java consists of 29 regencies and 9 cities. The data used in this study are secondary data that are collected from several publications of Central Bureau of Statistic (BPS), Autonomy Directorate General in Ministry of Finance (DJPK), and others resources, such as books, journal and article. The data source is pooled data within 6 years, from 2011 to 2016. The object of this research is public expenditure (regencies/cities) in 2 Provinces. Provinces are selected based on: 1. Geographical location, the provinces are expected to represent provinces located on Java Island. Located on Java Island because close to the central expenditure and center of economic. 2. Population, The largest population is used as a criterion in selecting the province. 3. Economic Growth; selected province has a lower regional economic growth after decentralization compared to regional economic growth before decentralization. Based on several considerations as described above, regencies/cities in Central Java and East Java are selected as an object in this study. Both Central Java and East java have the largest population compared to other provinces in Indonesia. Both Central Java and East Java have lower regional economic growth after decentralization than before decentralization.

FINDINGS AND ARGUMENT

Central Java

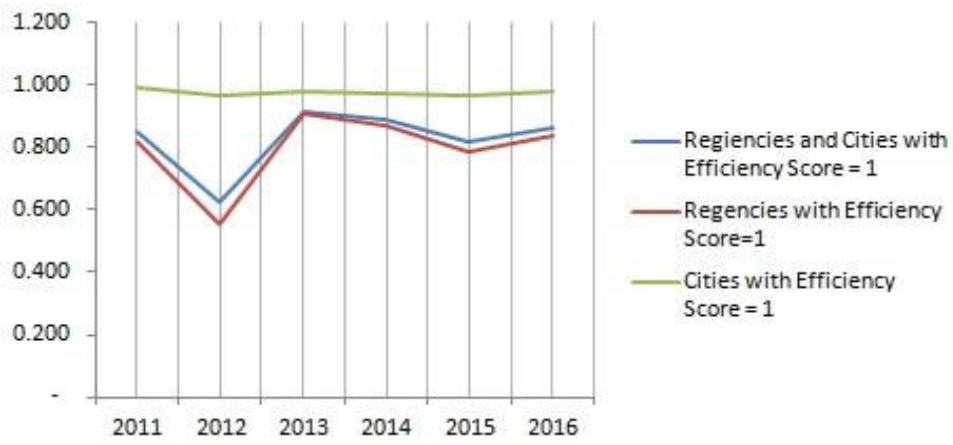
List of average technical efficiency scores of Public Expenditure in Central Java from 2010 to 2016 is shown in Table 3. The table shows the average technical efficiency scores in Central Java is 0.827 which means that the public expenditure in Central Java can reduce inputs (expenditure) of approximately 17.30 percent annually to reach the same level of output. Table 3 also shows the average technical efficiency scores for each city or regency in Central Java, the bigger the efficiency score, the more efficient public expenditure relative to other public expenditures in the province of Central Java

Table 3. Average Technical Efficiency Score of Public Expenditure in Central Java 2011-2016

No.	City / Regency	2011	2012	2013	2014	2015	2016	Average
1	Regency of Cilacap	1	1	1	1	1	0.872	0.979
2	Regency of Banyumas	0.941	1	0.918	0.902	0.899	0.859	0.920
3	Regency of Purbalingga	0.974	0.508	0.944	0.934	0.786	0.976	0.854
4	Regency of Banjarnegara	0.857	0.650	1	1	1	1	0.918
5	Regency of Kebumen	1	0.298	0.855	1	1	1	0.859
6	Regency of Purworejo	0.979	0.466	0.998	0.996	0.79	0.862	0.849
7	Regency of Wonosobo	0.78	0.455	0.98	1	0.756	0.691	0.777
8	Regency of Magelang	1	0.466	0.959	0.945	0.82	0.964	0.859
9	Regency of Boyolali	1	0.625	0.803	0.843	0.878	0.903	0.842
10	Regency of Klaten	0.904	1	0.849	0.732	0.624	0.756	0.811
11	Regency of Sukoharjo	0.706	0.338	0.951	0.9	1	0.982	0.813
12	Regency of Wonogiri	0.802	0.447	0.979	0.904	0.757	0.783	0.779
13	Regency of Karanganyar	0.645	0.35	0.845	0.984	0.902	0.914	0.773
14	Regency of Sragen	0.706	0.414	0.943	0.912	0.736	0.828	0.757
15	Regency of Grobogan	0.593	0.293	0.633	0.833	1	1	0.725
16	Regency of Blora	0.703	0.431	1	0.874	0.684	0.86	0.759
17	Regency of Rembang	0.825	0.377	0.931	0.877	0.704	0.817	0.755
18	Regency of Pati	0.85	0.431	0.961	0.851	0.628	0.712	0.739
19	Regency of Kudus	0.86	0.357	0.9	0.847	0.718	0.873	0.759
20	Regency of Jepara	0.752	0.45	0.864	0.81	0.667	0.745	0.715
21	Regency of Demak	0.738	0.432	0.896	0.787	0.583	0.73	0.694
22	Regency of Semarang	0.587	0.412	0.904	0.771	0.595	0.665	0.656
23	Regency of Temanggung	0.827	0.509	0.914	0.896	0.797	0.859	0.800
24	Regency of Kendal	0.677	0.567	0.876	0.567	0.879	0.877	0.741
25	Regency of Batang	0.567	0.629	0.876	0.551	0.654	0.812	0.682
26	Regency of Pekalongan	0.651	0.534	0.674	0.761	0.511	0.806	0.656
27	Regency of Pemalang	1	1	0.804	0.809	0.841	0.782	0.873
28	Regency of Tegal	0.901	0.911	1	1	0.791	0.509	0.852
29	Regency of Brebes	0.921	0.819	1	1	0.761	0.87	0.895
30	City of Magelang	1	1	1	0.988	0.908	0.989	0.981
31	City of Surakarta	0.991	0.901	0.954	1	1	1	0.974
32	City of Salatiga	1	1	1	0.89	0.985	0.981	0.976
33	City of Semarang	1	1	1	1	1	0.902	0.984
34	City of Pekalongan	1	1	1	0.965	0.907	1	0.979
35	City of Tegal	0.943	0.909	0.911	1	1	1	0.961
	Average	0.848	0.628	0.918	0.889	0.816	0.862	0.827

Note: Efficiency scores are written the range of 0 to 1 with 1 being the most efficient

Graph 1 shows the frequency of full efficiency expenditure trends (Efficiency Scores = 1) in the period 2011-2016 to the public expenditure (regencies and cities) in Central Java. There has been an upward trend in the frequency of full efficiency for public expenditure (regencies and cities) in Central Java.



Source: From the authors' own data.

Graph 1. Frequency of Public Expenditure in Central Java with full Expenditure Efficiency between 2011-2016

Graph 2 shows the average technical efficiency scores for the period 2011-2016 for public expenditure in Central Java. The average technical efficiency scores for public expenditure in Central Java in 2011 is 0.848. There has been an upward trend in the average technical efficiency scores for public expenditure in Central Java. The average technical efficiency scores for public expenditure in West Java in 2016 is 0,862.

Source: From the authors' own data.

Graph 2. Average Technical Efficiency Scores in Central Java Between 2011-2016

The results of regression for Central Java can be seen in Table 4. The summary of regression's results for Central Java shows that all independent variables significantly positively associated with the variable regional economic growth at a significance level (α) = 1%.

Table 4. Results of Regression for Central Java

Dependent Variable = LOG (PDRB)			
Independent Variable	Coefficients	Standart Error	Prob
LOG (Eff)	0.015677 ***	0.004569	0.0029
LOG (PAD)	0.132289 ***	0.008905	0.0000
LOG (DP)	0.162428 ***	0.014021	0.0000
LOG (Labor)	0.121189 ***	0.025677	0.0003
Constant	10.82429		

Note: *p<0.1; ** p<0.05; ***p<0.01; Source: From the authors' own data

East Java

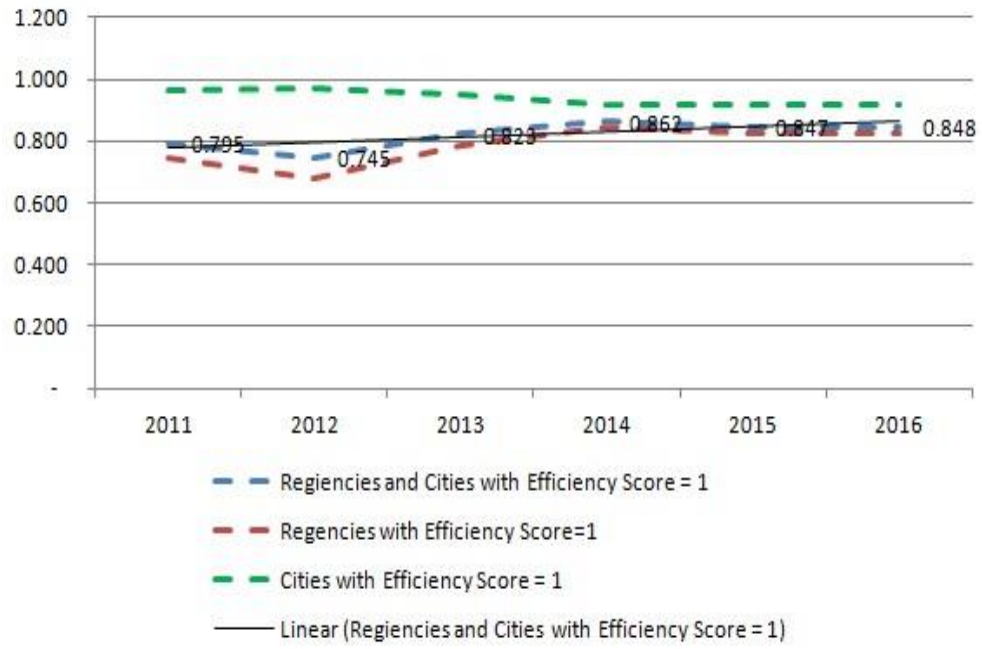
List of average technical efficiency scores of Public Expenditure in East Java from 2010 to 2015 is shown in Table 5. The table shows the average technical efficiency scores in East Java is 0,820, which means that the public expenditure in East Java can reduce inputs (expenditure) of approximately 18 percent annually to reach the same level of output. Table 5 also shows the average technical efficiency scores for each city or regency in East Java the bigger the efficiency score, the more efficient public expenditure relative to other public expenditures in the province of East Java.

Table 5. Average Technical Efficiency Score of Public Expenditure in East Java 2011-2016

No.	City / Regency	2011	2012	2013	2014	2015	2016	Average
1	Pacitan	0.761	0.532	1	0.952	1	0.952	0.866
2	Ponorogo	0.694	0.405	1	0.928	0.792	0.73	0.758
3	Trenggalek	0.752	0.333	0.617	0.884	0.744	0.927	0.710
4	Tulungagung	0.589	0.626	0.774	0.856	0.739	0.766	0.725
5	Blitar	0.817	0.776	0.887	1	0.856	0.751	0.848
6	Kediri	0.871	0.652	1	1	0.976	1	0.917
7	Malang	0.872	0.756	0.905	0.859	0.969	1	0.894
8	Lumajang	0.763	0.608	0.7	0.901	0.744	0.697	0.736
9	Jember	1	0.753	0.824	0.828	1	0.95	0.893
10	Banyuwangi	0.833	0.495	0.677	0.833	0.756	0.956	0.758
11	Bondowoso	0.767	0.528	0.795	0.82	0.741	0.769	0.737
12	Situbondo	0.556	1	0.678	0.829	0.728	0.789	0.763
13	Probolinggo	0.508	0.411	0.705	0.823	0.74	0.628	0.636
14	Pasuruan	1	0.838	1	1	1	1	0.973
15	Sidoarjo	1	1	1	1	0.782	0.908	0.948
16	Mojokerto	0.848	0.939	0.951	0.983	1	1	0.954
17	Jombang	0.673	0.781	0.685	0.897	0.908	1	0.824
18	Nganjuk	0.599	0.397	0.634	0.691	0.714	0.372	0.568
19	Madiun	0.521	0.623	0.551	0.673	0.712	0.731	0.635
20	Magetan	0.672	0.746	0.801	0.798	0.806	0.789	0.769
21	Ngawi	0.691	0.688	0.673	0.754	0.721	0.781	0.718
22	Bojonegoro	0.891	0.853	0.891	0.709	0.931	0.984	0.877
23	Tuban	0.806	0.851	0.808	0.921	0.797	0.675	0.810
24	Lamongan	0.561	0.573	0.652	0.691	0.781	0.895	0.692
25	Gresik	0.872	0.876	0.894	1	0.713	0.718	0.846
26	Bangkalan	0.542	0.651	0.667	0.802	0.823	0.815	0.717
27	Sampang	0.629	0.631	0.642	0.598	0.795	0.827	0.687
28	Pamekasan	0.829	0.747	0.748	0.822	0.851	0.843	0.807
29	Sumenep	0.623	0.545	0.562	0.629	0.791	0.709	0.643
30	Kota Kediri	1	1	1	1	1	0.965	0.994
31	Kota Blitar	1	1	0.925	0.961	0.859	0.879	0.937
32	Kota Malang	1	1	0.974	0.795	0.812	0.897	0.913
33	Kota Probolinggo	0.769	1	0.862	0.866	0.872	0.908	0.880
34	Kota Pasuruan	0.893	1	0.781	0.895	1	1	0.928
35	Kota Mojokerto	1	0.927	1	0.816	0.887	0.891	0.920
36	Kota Madiun	1	0.786	1	0.931	1	0.872	0.932
37	Kota Surabaya	1	1	1	1	0.899	0.859	0.960
38	Kota Batu	1	1	1	1	0.941	0.976	0.986
	Jawa Timur	0.795	0.745	0.823	0.862	0.847	0.848	0.820

Note: Efficiency scores are written the range of 0 to 1 with 1 being the most efficient

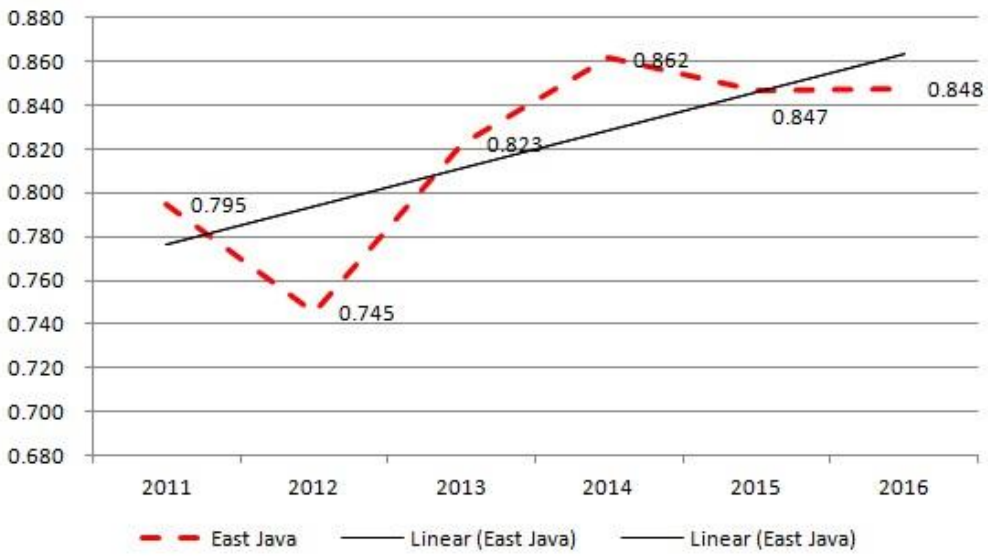
Graph 3 shows the frequency of full efficiency expenditure trends (Efficiency Scores = 1) in the period 2011-2016 to the public expenditure (regencies and cities) in East Java. There has been an upward trend in the frequency of full efficiency for public expenditure (regencies and cities) in East Java.



Source: From the authors' own data.

Graph 3. Frequency of Public Expenditure in East Java with full Expenditure Efficiency between 2011-2016

Graph 4 shows the average technical efficiency scores for the period 2011-2016 for public expenditure in East Java. The average technical efficiency scores for public expenditure in East Java in 2011 is 0,795. There has been an upward trend in the average technical efficiency scores for public expenditure in East Java. The average technical efficiency scores for public expenditure in East Java in 2016 is 0,848



Source: From the authors' own data.

Graph 4. Average Technical Efficiency Scores in East Java Between 2011-2016

The results of regression for East Java can be seen in Table 6. The summary of regression's results for East Java shows that all independent variables significantly positively associated with the variable regional economic growth at a significance level (α) = 1%.

Table 6. Results of Regression for East Java

Dependent Variable = LOG (PDRB)			
Independent Variable	Coefficients	Standart Error	Prob
LOG (Eff)	0.072879 ***	0.031107	0.0006
LOG (PAD)	0.234543 ***	0.013458	0.0000
LOG (DP)	0.145509 ***	0.017997	0.0000
LOG (Labor)	0.315789 ***	0.049226	0.0000
Constant	7.821858		

Note: *p<0.1; ** p<0.05; ***p<0.01; Source: From the authors' own data

DISCUSSION

Decentralization in Indonesia is expected to improve efficiency of public expenditure and further drive economic growth in the regions. Based on the result of efficiency scores shows that performance of public expenditures in Central Java and East Java on public sector expenditure some still relatively inefficient. The public expenditure in Central Java can reduce inputs (expenditure) of approximately 17.30 percent annually and 18 percent for public expenditure in East Java to reach the same level of output. Then the result of regression analysis is Efficiency Scores (SE) variable that is used to measure the efficiency of public expenditures has positive and significant effect on regional economic growth. It gives conclusion that the public expenditure need to improve the efficiency of expenditure because it can give a positive impact on regional economic growth.

Public Own Revenue (PAD) and Transfer Income are sources of public expenditure investment. If PAD and Transfer Income increase, there will be more fund that can be used by public expenditure to increase investment. Based on Solow's Neo-Classical Economic Growth Model, investments may affect the level of the economy and its growth. The result of regression in Central Java and East Java are consistent with the hypothesis in this study that is PAD and Transfer Income have positive and significant effect on regional economic growth. Hence, the higher PAD and Transfer Income, the higher regional economic growth in that region.

Based on Cobb–Douglas production function with the constant returns to scale, if all inputs (capital and labor) are increased by the same proportion, then output would also increase by the same proportion. The result of regression in Central Java and East Java are consistent with the hypothesis in this study that is labour has positive and significant effect on regional economic growth. Hence, the higher number of labour in the public expenditure, the higher regional economic growth.

CONCLUSION

In this paper, the efficiency of the public expenditure in regencies and cities are still inefficient by mean of Stochastic Frontier Analysis. From the research result can be concluded that from 2011 to 2016, the average technical efficiency scores regencies/cities in Central Java is 0.827 and regencies/cities in East Java is 0,820, so the performance of the regencies/cities in Central Java and East Java on public sector expenditure some still relatively inefficient. The cause of inefficiency is the input value (total expenditure) to achieve output relatively excessive when compared with other regencies/cities in the province. This indicates that several regencies/cities in Central Java and East Java are still able to increase the efficiency of their spending by improving the performance of their public services. The results of regression are consistent with the theory and hypothesis in this study. The conclusions of the regression results are:

1. The efficiency of public expenditures has positive and significant effect on regional economic growth. The higher efficiency of public expenditures then the higher regional economic growth of public expenditure. Findings of this study are consistent with the opinion of Oates (1993) which states that fiscal decentralization will be able to increase economic growth and social welfare, because public expenditures will be more efficient in the production and provision of public goods. In a previous research conducted by Tirtosuharto [37] also argued that the expenditure with higher levels of efficient causes some other factor costs will be reduced.

2. Public Own Revenue (PAD), Transfer Income and labor have positive and significant effect on regional economic growth. The higher PAD, Transfer Income and labor then the higher regional economic growth of public expenditure. Public expenditures which are able to generate their own income tend to be more responsible to the public to provide public goods and services that will generate market incentives and reduces corruption [3]. Furthermore, public expenditure income (including PAD, DAU and DBH) are sources of public expenditure investment. If public expenditure income increases, there will be more fund that can be used by public expenditure to increase investment. Therefore, these findings consistent with Solow's Neo-Classical Economic Growth Model, investments may affect the level of the economy and its growth. The result of impact number of labor on regional economic growth also consistent with Cobb–Douglas production function, with the constant returns to scale, if all inputs (capital and labor) are increased by the same

proportion, then output would also increase by the same proportion. By increasing number of labor in the region can increase the production capacity of the region so that it will create a greater output.

Based on the analysis and summary of the study, the authors propose some policy recommendations related to the topic:

1. The public expenditure should have a good planning for expenditure; conduct periodic evaluations to set minimum service standards; enhancing transparency within public sector procurement; and improve supervision function in public expenditure. It is intended to public expenditures can use the budget to produce better service, especially services that are productive in driving regional economic growth. Productive services such as services in education sector, health sector and infrastructure sector.
2. Public Expenditures need to increase Public Own Revenue (PAD) as the major source of their funding. Public expenditures are expected to be able to maximize revenues from taxes and levies which are elastic on regional economic growth. Maximizing revenue from taxes and levies can be done by identifying new/potential taxpayers. Activities that can be done is checking the number of restaurants and hotels in the area of public expenditure and implement online tax system by using cash register system. Moreover, it is important to raise awareness of taxpayers by giving taxation socialization and simplifying the process of fulfillment tax obligations. The public expenditure also needs to strengthen administrative and collection process, audit capacity and supervision on payment of taxes, this can be done by improving the quality of tax officers.
3. The proportion of transfer income as a source of financing public expenditures is still very large, so the role of the central expenditure through the transfer income is still very large for public expenditure in running programs and development activities. Transfer Income also has a positive impact on regional economic growth. Thus, it is important to make best strategy to allocate transfer income so it can effective in stimulating regional economic growth. Allocation fund balance is expected to be in accordance with public development priorities. Transfer income needs to be distributed timely because it related with the effectiveness and efficiency of expenditures.
4. Public expenditures should improve the quality of labor. To improve the quality of labor can be done with education and training. Improving the quality of labor will improve productivity and output, as well as to encourage economic growth.

These are recommendation for further research relating to the topic of fiscal decentralization and public expenditures efficiency and related with economic growth:

1. Using qualitative indicators in the public expenditure to get whole review on quality of public expenditure services.
2. In-depth analysis of others determinants of regional economic growth to enrich the research, especially socio-political variables.
3. Comparing the efficiency of spending with more public expenditures (regencies/cities), such as comparing all public expenditures in Indonesia

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