

# Empirical Study of Effects of Local Financial Structure on Regional Economic Growth (Studies Conducted in Regencies in The Province of East Java, Indonesia)

**Kusuma Ratnawati**

Faculty of Economics and Business, University of Brawijaya, Malang, Indonesia

## ABSTRACT

Fiscal decentralization in Indonesia has officially been implemented since 2001. This led to a fundamental change in the relationship regulation of central government and local government, particularly in the financial balance between central government and local government in Indonesia. Implementation of the fiscal decentralization is the beginning of the transformation of the local financial structure which is reflected in the regional budget. Theoretically, the fiscal decentralization affects the regional economic growth because local government has been authorised with regional autonomy. The research aims to test the effect of changes of the local financial structure triggered by the fiscal decentralization on the regional economic growth in the regencies in East Java. The research involved 25 regencies in East Java, with the data taken for eight years from 2005 to 2012 by using Johansen cointegration test, Granger Causality Test, and Vector Error Correction Model. The first hypothesis shows that there is a significant cointegration relationship (long-term balance) between the autonomy ratio and the regional economic growth ratio in East Java. This means that there is a balance relationship and a movement equality in the long-term between the local financial structure and the regional economic growth in East Java. The results of the second hypothesis test shows that there is only one-way causality relationship which is significant; the local financial structure affects the regional economic growth of regencies in East Java. These findings indicate that change in the local financial structure will cause change in regional economic growth, but change in the regional economic growth does not lead to change in the local financial structure.

**Keywords:** Local Financial Structure, Economic Growth, Fiscal Decentralisation, Regional Autonomy, Causality, Cointegration.

## INTRODUCTION

Fiscal decentralisation is a policy which is implemented in countries to improve the welfare of societies. Indonesia has officially implemented fiscal decentralisation policy since 1 January 2001. The Implementation of the decentralisation gives more authorities to local government to run government-related affairs ranging from planning, management, and evaluation. Therefore, local government will be encouraged to empower all available potential resources to develop its regency. This triggers fundamental change in the regulation that controls the relationship between central and local government, especially in governmental administration and the financial balance between the central and local government. The implementation of fiscal decentralisation marks the beginning of transformation which is embodied in Regional Government Budget.

The increasing number of authorities in central government delegated to the local government causes the increase in Own Source Revenue (OSR) as a source of funding in regional financial structure. Potential sources of regional revenue should be maximally used without ignoring the rules embodied in the Legislation. Increasing Own-Source Revenue (OSR) reflects the independence of local government which has been given an autonomy.

East Java is one of provinces in Indonesia that has potentials. East Java contributes almost 15% to the economic development of the nation. The proportion of economic activities which is influenced by the increasing number of trading activities gives East Java an important role to play in the economy of Indonesia. Since decentralisation was implemented, East Java has experienced an increase in economic performance, with its revenue in gross domestic regional product doubling from Rp. 5.8 millions per capita in 2000, to Rp. 9.1 millions per capita in 2010 (Analysis of Public financial Report in East Java, 2011). The revenue

in gross domestic regional product per capita did not stop increasing until 2014, reaching Rp. 39.90 millions. Gross domestic regional product of East Java contributed 14.51% to the nation in 2015.

The growth of gross domestic regional product of East Java was also influenced by the proportion of Region Own-Source Revenue in the financial structure of the Province of East Java, which reached to 61% of total revenue in 2014. In regencies of East Java Province, however, the average Own-Source Revenue in regencies accounted for only 11.6% of total revenue in 2014. Therefore, the financial structure in regencies of East Java Province is still dominated by the source of revenue from central government.

Kuncoro (2004) agrees that decentralisation affects regional economic growth because it is believed to give authorities and autonomies to local government in planning its own financial plan and in making policies for the development of the regencies. The development in regencies will encourage the local government to develop the economy of its area by optimising natural resources, providing more vacancies for the unemployed, so that it is expected to be able to support the development of economy.

Godsmith (1969), Li Songhua (2016), Wang, Yougang et al.(2014, Li, H & Han, R (2009) found that the change in regional financial structure due to fiscal decentralisation affects economic growth, and vice versa.

Adi (2012) also conducted research on local financial potential in supporting economic growth in local autonomy era in Indonesia. This research examined the influence of local financial structure on economic growth before and after local autonomy was implemented. From the research, it is implied that there was an increase in Own-Source Revenue after the autonomy, which also led to regional economic growth. In addition, it was also stated that the potential of regional finance also improved significantly. It is assumed that one of the contributing factors causing the increase was the level of economic growth. The estimate on the influence of regional economic growth on regional financial potential has not been previously measured. Thus, a test to measure cointegration and causality relationship between regional financial structure and regional economic growth is required.

Figuring out the relationship and influence of financial structure in regencies of East Java Province on regional economic growth could be considered by local government to plan and design Own-Source Revenue. Moreover, the information on the relationship and influence of regional economic growth in regencies of East Java Province on regional financial structure could serve as a means of evaluation to find out the potential of a region in increasing Own-Source Revenue (OSR) as the regional economy grows. As a result, the goal of regional autonomy could be realised and development in the era of fiscal decentralisation could be performed optimally. This research aims to test the relationship of cointegration and causality between the regional financial structure and economic growth in regencies in the Province of East Java.

## LITERATURE REVIEW

According to Oates (1972), one of the reasons why fiscal decentralisation needs to be implemented is simply because fiscal decentralisation could contribute to efficiency in economy such as efficiency of public resources. Fiscal decentralisation helps increase revenue and efficiency of public sectors and reduce deficit in budgets, and support economic growth (Bird, 1993; Bird, Wallich, 1993; Bahl, Linn, 1992; Gramlich, 1993, and Oates, 1993).

Oates (1993) asserts that fiscal decentralisation will be able to increase economic growth and the welfare of societies because local government is seen to be more efficient in producing and providing public goods and services. This is because the local government holds autonomous rights with better position than central government in providing public services required by societies in regional areas, which will improve efficiency of and accelerate regional economic growth that will also lead to the development of national economy.

Regional autonomy brings a consequence: regional funding. Mardiasmo (2002) suggests that there are two aspects of financial performance expected to be better implemented when regional autonomy is applied, one of which involves authorities given to regencies in planning their own funding, in which Own-Source Revenue could serve as the main source of funding. The second aspect involves the management of regional expenses. The principle of regional autonomy underlines that regional financial management must be transparent and accountable, as transparency and accountability will bring regencies to more efficient and effective regional expenditure.

Decision made at local government level will be more taken into account for more efficient allocation. Oates (1993) suggests that fiscal decentralisation increases efficiency of economy related with the dynamic of economic growth. Expenses on

infrastructure and social sector spent by government contribute more to economic growth than to the improvement of central government policy. Regional areas are more potential in planning regional budgets, for the local government knows better its areas. As a result, meeting the need of the local societies could be realised more efficiently.

According to Vazquez and McNab (2001), there are two reasons for efficient fiscal decentralisation. Firstly, an intelligent and sensitive local leader of a region who could read the aspiration of the societies will build his/her own path to easier adaptation to spending budget policy. As a consequence, it could improve individual welfare (consumer efficiency). Secondly, spending budget at local level gives rise to “producer efficiency”, as in this type of efficiency, services required in providing infrastructure are more affordable.

Zang and Zou (1998) agree that decentralisation of both revenue and expenses are involved in efficiency improvement in public sector, reduce deficit in budgets, and encourage economic growth because decentralisation will help improve economic efficiency, recalling that the local government has more potential than the central government in providing public services that fit the need and the preference of societies. Sooner or later, efficiency gained will accelerate regional economic growth as it is at national level.

## RESEARCH METHODS

This research employed quantitative positive research approach which focuses on analysing figures. Arikunto (2010) agrees that quantitative-based research involves numbers starting from collecting data, data interpretation, to result presentation.

The data on Regional Government Budgets and Gross Domestic Regional Product from 2005 – 2013 was taken from 25 regencies in East Java (Table 1).

Variable of financial structure (X1) as a proxy for independence ratio formulated as follows:

$$\text{Independence Ratio} = \frac{\text{PAD}}{\text{TPD}} \times 100\%$$

PAD = Own-Source Revenue

TPD = Own-Source Revenue in Total

Variable of Regional Economic Growth (X2) is formulated as follows:

$$\text{Regional Economic Growth} = \frac{(\text{PDRB}_{t-1} - \text{PDRB}_t)}{\text{PDRB}_t} \times 100\%$$

**Table 1: List of regencies**

No	Regency	No	Regency
1	Regency of Bangkalan	14	Regency of Mojokerto
2	Regency of Banyuwangi	15	Regency of Ngawi
3	Regency of Blitar	16	Regency of Pacitan
4	Regency of Bojonegoro	17	Regency of Pamekasan
5	Regency of Bondowoso	18	Regency of Pasuruan
6	Regency of Gresik	19	Regency of Probolinggo
7	Regency of Jember	20	Regency of Sampang
8	Regency of Jombang	21	Regency of Sidoarjo
9	Regency of Kediri	22	Regency of Situbondo
10	Regency of Lamongan	23	Regency of Sumenep
11	Regency of Lumajang	24	Regency of Tuban
12	Regency of Magetan	25	Regency of Tulungagung
13	Regency of Malang		

Source: data modified in 2016

$PDRB_t$  = Gross Domestic Regional Product in the year t.  
 $PDRB_{t+1}$  = Gross Domestic Regional Product after the year t.

The data used in this research involved secondary data of Regional Government Budgets and Gross Domestic Regional Product in 25 regencies in East Java from 2005 – 2012. The data used in this research was panel data, meaning that it combined time series and cross section data. The data of Regional Government Budgets was gained from official website of Directorate General of Fiscal Balance ([www.djpk.kemenkeu.go.id](http://www.djpk.kemenkeu.go.id)) while the data of Gross Domestic Regional Product was obtained from official website of Central Bureau of Statistics (<https://www.bps.go.id/>).

Data analysis method covered several stages, in which *software Eviews 7* was used to assist the analysis of all stages. The analysis involved the following stages:

## Assumption Test

### Unit root test and degree of integration

Stationarity test is required in testing econometric model for time series data. This test reveals mean, variants, and autovariants which will remain stable whenever the data is used. The data of time series is possible to be stationary when the average of  $E(x_t)$  is independent from t, with a particular variant which is systematically stable in time (Nachrowi and Usman, 2006).

Unit root test, which was developed by David Dickey and Wayne Fuller (1981), was employed in this research to find out whether time series data met the assumption of stationarity or not; it was then known as Augmented Dickey-Fuller (ADF) test. Equation in Augmented Dickey-Fuller (ADF) test was obtained as follows:

$$\Delta X1_t = \beta_1 + \beta_2 t + \delta X1_{t-1} + \alpha_i \sum_{i=1}^m \Delta X1_{t-i} + \varepsilon_t$$

$$\Delta X2_t = \beta_1 + \beta_2 t + \delta X2_{t-1} + \alpha_i \sum_{i=1}^m \Delta X2_{t-i} + \varepsilon_t$$

$\Delta X1_t$  = Financial Structure in period t

$\Delta X2_t$  = Economic growth in period t

t = Time

$\beta_1, \beta_2$  = Constant

$\delta$  = Autoregressive constant

$\alpha_i$  = Coefficient

m = Optimal lag length

$\varepsilon_t$  = Residual

Hypothesis:  $H_0: \delta = 0$  (data *time series* with unit root)

$H_1: \delta \neq 0$  (data *time series* without unit root)

All data in this research was tested by using unit root test. Hypothesis 0 in this test showed that stochastic variable had unit root. To determine whether there were some unit roots in this test, MacKinnon critical value was involved to substitute t-test, which was then compared to statistical critical value in t in the table of ADF. When hypothesis 0 was obtained, it could be concluded that the variable was not stationary.

When non-stationary time series data was in the order of null, I (0), the degree of integration test was required, in which stationarity data was found from the next order so that the degree of stationary was obtained in the order n (first difference), I (1), or second difference, I (2), and so forth. The degree of integration test was employed to find out at which degree or order of difference the data observed would be stationary.

### Lag length estimation

Optimal lag length is one of essential methods to design a model, for cointegration test and VECM are sensitive to lag length. Lag length was applied to find out the length of time which is important for each variable. When the optimal lag length 1 is

obtained, it means that the value of a variable in this month is equal to the value of variable in a previous month (Nofiatin, 2013).

Optimum lag length in this research was measured by looking at criterion lag length such as Schwarz Information Criterion (SIC), as suggested by Ajija, et al.(2011). Optimal lag length was obtained from the equation of VAR with the smallest value of SIC. Schwarz Information Criterion (SIC) equation is formulated as follows:

$$SIC(k) = T \ln \left( \frac{SSR(k)}{T} \right) + n \ln(T)$$

T = Total of observation

k = Lag length

SSR = Residual Sum Square

n = Total of estimate parameter

### Hypothesis Test I: Cointegration test (Johansen's Cointegration Test)

Cointegration is a combination of linear relationship of several variables which are not stationary, and all the variables must be integrated at equal degree or order of difference. The integrated variables show that the variables have equal stochastic trend, and, in the long term, the length of the variables shows the same movement. Engle and Granger (1987) assert that cointegration test is the continuation of unit root test and degree of integration test. If one or more variables have different degree of integration, the variables cannot be cointegrated.

The test on cointegration relationship was employed to find out the variables that were not stationarily cointegrated in the long term. This linear combination is known as cointegration equation and can be interpreted as long-term balance relationship between variables.

Johansen's Cointegration Test uses maximum likelihood method to determine the existence of cointegration relationship:

$$\Delta X1_t = C + \sum_{i=1}^m \Gamma_n X1_{t-1} + \Pi X1_{t-1} + \varepsilon_t$$

$$\Delta X2_t = C + \sum_{i=1}^m \Gamma_n X2_{t-1} + \Pi X2_{t-1} + \varepsilon_t$$

$\Delta X1_t$  = Financial structure in periode t

$\Delta X2_t$  = Economic Growth in period t

C = Constant

$\Gamma$  = Coefficient

m = Lag length

$\Pi$  = Coefficient of matrix dimension

$\varepsilon_t$  = residual vector

Hypothesis:  $H_0$  = no cointegration relationship (*trace statistic < critical Value*)

$H_1$  = there is cointegration relationship (*trace statistic > critical Value*)

### Hypothesis Test II

#### Causality test (granger's causality test)

Causality test was performed to measure the significance of relationship between variables and indicate cause and effect relationship. This test is to find out whether variable y causes any change in variable z or vice versa, or both variables cause change to each other, or there is no relationship between the two variables. Variable y influencing or changing variable z means

how many variables of  $y$  in current period can be explained by the value of variable  $z$  and variable  $y$  in the previous period. Granger's Causality test is believed to be more meaningful than conventional correlation test (Ascarya, 2009).

Granger's Causality was used to test whether there is causality or cause and effect relationship between two variables. The accuracy in prediction made according to previous information could indicate that there was causality relationship between variable  $y$  and  $z$  in a long term. It is recommended that lag be used longer according to the presumption indicating causality. Equation in Granger's Causality test is formulated as follows:

$$\Delta X1_t = \beta_0 + \sum_{i=1}^m \beta_{1i} \Delta X1_{t-i} + \sum_{i=1}^m \beta_{2i} \Delta X2_{t-i} + \varepsilon_{1t}$$

$$\Delta X2_t = \beta_0 + \sum_{i=1}^m \beta_{1i} \Delta X2_{t-i} + \sum_{i=1}^m \beta_{2i} \Delta X1_{t-i} + \varepsilon_{2t}$$

$\Delta X1_t$  = Economic Growth in period  $t$

$\Delta X2_t$  = Financial structure in period  $t$

$\beta_0$  = constant vector

$\beta_1, \beta_2$  = Matric coefficient

$m$  = Lag length

$\varepsilon_{1t}, \varepsilon_{2t}$  = residual vector

Hypothesis:  $H_0$  = No causality relationship

$H_1$  = there is causality relationship

### **Vector error correction model (VECM)**

According to Engle and Granger (1987), error will be made when variable  $X_t$  and  $Y_t$  are cointegrated, which shows that the change in dependent variable serves as imbalance level in cointegration relationship.

VECM method explains short-term and long-term relationship. When variables cointegrate in short term, the distribution from long-term balance to the change in dependent variable moves towards long-term balance. Error correction which is based on  $z$  is the parameter in which it measures the sort-term distribution based on long-term balance. In short term, variables may be distributed from one another, causing system imbalance. The equation of VECM is formulated as follows:

$$\Delta X1_t = \beta_0 + \sum_{i=1}^m \beta_{1i} \Delta X1_{t-i} + \sum_{i=1}^m \beta_{2i} \Delta X2_{t-i} + \lambda_1 Z_{t-1} + \varepsilon_{1t}$$

$$\Delta X2_t = \beta_0 + \sum_{i=1}^m \beta_{1i} \Delta X2_{t-i} + \sum_{i=1}^m \beta_{2i} \Delta X1_{t-i} + \lambda_1 Z_{t-1} + \varepsilon_{2t}$$

$\Delta X1_t$  = Economic Growth in period  $t$

$\Delta X2_t$  = Financial structure in period  $t$

$\beta_0$  = constant vector

$\beta_1, \beta_2$  = Matric coefficient

$m$  = Lag length

$\lambda_1$  = Matric loading

$Z_{t-1}$  = Cointegration vector (error correction in cointegration equation)

$\varepsilon_{1t}, \varepsilon_{2t}$  = residual vector

Hypothesis:  $H_0$  = no short-term and long-term causality relationship

$H_1$  = There is short-term and long-term causality relationship.

### **Wald test**

Kyngas and Rissanen agree that Wald Test is used to test the significance of independent variable in statistical model, while Polit (1996) and Agresti (1990) define Wald Test as a tool to test if parameter correlated to some variables is zero.

Wald Test was used in this research to test the significance level of short-term influence of economic growth on independence ratio and, vice versa, the significance level of influence of independence ratio on economic growth in its short term.

The hypothesis used in Wald test was:

H0 = independent variable tested individually does not significantly influence dependent variable

H1 = independent variable tested individually significantly influences dependent variable.

H0 is rejected when Wald Probability is  $<0.05$  and H0 is accepted when Wald Probability is  $>0.05$ .

## RESULTS AND DISCUSSION

In assumption test in unit root at the level of first difference either with ADS or PP test, independence ratio variable and stationary economic growth revealed 1% significance level, so it was possible to continue with lag length measure, cointegration and causality test. However, according to Schwarz Information Criterion (SIC), Optimal lag length suggested was lag 2. This optimal lag could mean that the value of independence ratio variable and Economic growth of this year are equal to those in the last two years. This optimal lag length was to be used in cointegration, causality, and VECM test.

### Hypothesis Test Result I: Johansen's Cointegration Test

In Johansen's cointegration test with category PP-Statistic in Table 2, it was found that the statistic value was -18.493 and weighted statistic value was -4.607 with the probability value for both reaching 0.0000. This result showed that hypothesis 0 which represented the absence of cointegration relationship between Independence Ratio and Economic Growth was rejected and received alternative hypothesis because the probability value was  $0.0000 < 0.01$ .

Johansen's cointegration test result with category PP-Statistic in this research revealed that there was a cointegration relationship (long-term balance) between Independence Ratio and Economic Growth in regencies in East Java Province with significance level at 1%.

Johansen's cointegration test result with category ADF-Statistic in Table 2 was not far different from that with category PP-Statistic. It was found that the statistic and weighted statistic value were -15.170 and -4.412, respectively, with the probability value at  $0.0000 < 0.01$ . In other words, hypothesis 0 implied that there was no cointegration relationship between independence ratio and economic growth rejected, and alternative hypothesis implied that there was cointegration relationship between independence ratio and economic growth accepted.

This analysis result indicated that between Independence Ratio and Economic Growth in regencies in the Province of East Java, there was a balance relationship and linear movement in a long term, which means that in every short-term period, Independence Ratio variable and Economic Growth tended to adjust each other in order to reach long-term equilibrium.

### Hypothesis Test Result II

#### Granger's causality test result

In causality test result with Granger's Causality method (Table 3), it is implied that hypothesis 0 underlines independence ratio variable did not cause any change in economic growth rejected and it received alternative hypothesis. This decision was made based on probability value lower than 5% ( $0.0000 < 0.05$ ). It implies that Independence Ratio caused significant change in Economic Growth with significance level reaching 1% ( $0.0000 < 0.01$ ).

**Table 2: Johansen's cointegration test result**

Category	Statistic	Prob.	Weighted statistic	Prob.
PP-statistic	-18.493***	0.0000	-4.607***	0.0000
ADF-statistic	-15.170***	0.0000	-4.412***	0.0000

\*\*\* Significant with significance level at 1%, Source: Data modified, 2014

**Table 3: Granger's causality test**

Null hypothesis	F-statistic	Prob.
RASIO_KEMANDIRIAN does not Granger Cause PERTUMBUHAN_EKONOMI	10.1187***	0.0000
PERTUMBUHAN_EKONOMI does not Granger Cause RASIO_KEMANDIRIAN	0.46820	0.6271

\*\*\*Significant with significance level at 1%, Source: Data modified, 2016

The second hypothesis 0 shows that Economic Growth did not cause any change in Independence Ratio to be accepted because probability value in the second hypothesis 0 was higher than 5% ( $0.6271 < 0.05$ ). Thus, Economic Growth variable did not cause any significant change in Independence Ratio.

From this research result, it can be concluded that there was one way causality relationship between Independence Ratio and Economic Growth in regencies in the Province of East Java, in which it was found that regional financial structure serving as a proxy for independence ratio caused significant change in regional economic growth, while the regional economic growth did not cause any significant change in independence ratio.

### **Vector error correction model (VECM)**

$$D(RK) = C(1)*(RK(-1) + 116.217286116*PE(-1) - 731.03890497) + C(2)*D(RK(-1)) + C(3)*D(RK(-2)) + C(4)*D(PE(-1)) + C(5)*D(PE(-2)) + C(6)$$

$$D(RK) = 0.000604*(RK(-1) + 116.217286116*PE(-1) - 731.03890497) + 0.121601* D(RK(-1)) + 0.073214*D(RK(-2)) - 0.008585*D(PE(-1)) - 0.053529*D(PE(-2)) + 0.474803$$

RK = Independence Ratio (*Rasio Kemandirian*)

PE = Economic Growth (*Pertumbuhan Ekonomi*)

RK = Independence Ratio

PE = Economic Growth

Table 4 and 5 show that not all lags were significant in their equation, which is typical in VECM (Pyndick and Rubinfeld, 1998).

In the first equation with dependent variable of Independence Ratio, it is known that the movement dynamic in Independence Ratio in lag in one and two previous years did not have significant influence, neither did Economic Growth in lag in one and two previous years, while constant value is shown significant (Table 4.9).

The pattern of relationship between Independence Ratio and Independence Ratio in the lag in one and two previous years was positive, while the pattern of relationship between Independence Ratio and Economic Growth was negative in the lag in one and two previous years.

In the second equation with dependent variable of Economic Growth, it is seen that the movement dynamic in Economic Growth in one-year lag did not have any significant influence, while in the lag in two previous years, it had significant influence with negative pattern. Movement dynamic in Independence Ratio in one-year lag had a significant influence in a positive pattern on Economic Growth, but in the lag in two previous years it did not have any significant influence.

### **Wald test result**

Table 6 shows that Independence ratio was not significantly influenced by short-term economic growth because the probability was higher than 0.05 ( $0.7704 > 0.05$ ), while economic growth was significantly influenced by short-term independence ratio with 10% significance level because the probability value was higher than 0.05 ( $0.0734 < 0.10$ ).

## **DISCUSSION**

The first hypothesis test result shows that there was significant cointegration relationship (long-term balance) between Independence Ratio and Regional Economic Growth in regencies in the Province of East Java with 1% significance level.

**Table 4: Estimate result of VECM from independence ratio variable**

	<b>Coefficient</b>	<b>t-statistic</b>	<b>Prob.</b>	<b>Remark</b>
C (1)	0.000604	0.731083	0.4654	Not significant
C (2)	0.121601	1.287178	0.1993	Not significant
C (3)	0.073214	0.886504	0.3762	Not significant
C (4)	-0.008585	-0.060078	0.9521	Not significant
C (5)	-0.053529	-0.753824	0.4517	Not significant
C (6)	0.474803	4.506047***	0.0000	Significant

\*\*\* Significant with significance level at 1%, Source: data modified, 2016

**Table 5: Estimate Result of VECM from Economic Growth Variable**

	<b>Coefficient</b>	<b>t-statistic</b>	<b>Prob.</b>	<b>Remark</b>
C (1)	-0.342024	-7.233037***	0.0000	Significant
C (2)	0.018875	0.268306	0.7887	Not significant
C (3)	-0.059886	-1.713096*	0.0880	Significant
C (4)	0.149538	3.215361***	0.0015	Significant
C (5)	0.058657	1.442710	0.1504	Not significant
C (6)	0.116111	2.238384**	0.0261	Significant

\*\*\*Significant with significance level at 1%, \*\*Significant with significance level at 5%, \*Significant with significance level at 10%, Source: Data modified, 2016

**Table 6: Wald test result**

<b>Dependent variable</b>	<b>Value of Chi-square</b>	<b>Prob</b>	<b>Remark</b>
Independence ratio	0.085170	0.7704	Not significant
Economic growth	2.373191	0.0734*	Significant

\*Significant with significance level at 10%, Source: Data modified, 2016

It shows that there was a balance relationship and linear movement in long-term period between regional financial structure and economic growth in regencies in the Province of East Java. In other words, in every short-term period, regional financial structure and economic growth tend to follow one another, resulting in long-term balance. The change in regional financial structure as a result of the increasing Own-Source Revenue in each regency in the Province of East Java will always be followed by the change in economic growth in the regency.

This research conceptually suggests that regional financial structure after fiscal decentralisation is expected to improve in terms of its independence in managing expenditure by optimising Own-Source Revenue (OSR). Regional financial independence means the local government capacity in independently funding government activities, development, and public services. Independence ratio also indicates participation of society in regional development which can be shown through paying tax and regional levy as revenue (Halim, 2002). The higher is the independence of a regional area, the higher the economic growth of a regional area will be.

The findings in this research are in line with the research conducted by LI Songhua (2016), Wang, Yougang et al.(2014), Li, H & Han, R (2009) and Goldsmith (1969) which imply that there is a cointegration relationship (long-term balance) between Financial Structure and Regional Economic Growth.

The second hypothesis test result shows that there was only significant and one-way causality relationship between regional financial structure and economic growth in regencies in the Province of East Java, in which the regional financial structure influenced regional economic growth with 1% significance level, while regional economic growth did not have any significant influence on the regional financial structure. This finding indicates that the change in financial structure in regencies in the Province of East Java will cause significant change in regional economic growth, but the change in regional economic growth in regencies in the Province of East Java will not cause any change in the regional financial structure.

This research result strengthens the findings in previous research conducted by LI Songhua (2016), Wang, Yougang et al. (2014), Li, H & Han, R (2009) and Goldsmith (1969) implying that there is a causality relationship between regional financial structure and regional economic growth.

In terms of short-term influence, the result found is in line with the influence in long-term period, in which the regional financial structure functions as a proxy for independence ratio has a significant influence on the regional economic growth with only lower significance level (10%), while economic growth does not have any influence on the regional financial structure.

Findings on significant influence of financial structure on economic growth are also in line with Fiscal Federalism Theory suggested by Hayek (1945), Richard Musgrave (1959), Oates (1972), and Bahl (1992). According to those theories, the implementation of fiscal decentralisation emerging from regional financial structure will increase regional economic growth.

Oates (1993) also suggests that fiscal decentralisation stemming from the change in financial structure will support economic growth and the welfare of societies because local government is seen more efficient in producing and providing goods and public services. Fiscal decentralisation is able to improve economic efficiency because local government has a better potential than central government in giving public services as needed, which leads to higher efficiency, accelerating regional economic growth, and finally supporting national economic growth.

Zang and Zou (1998) also agree that fiscal decentralisation will improve economic efficiency because local government is in its better position than national government in providing public services which fit the preference and the need of local societies. The efficiency gained will surely accelerate economic growth.

Decentralisation demands local government to be more independent in planning and implementing development according to local autonomy regulation. In line with the principle of 'money follows function', incoming revenue should be accompanied with wider discretion in expenditure which is based on the need and regional priority. This condition will give rise to useful local government spending and could be a fiscal stimulus for local economic growth in order to realise the welfare of societies. The successful implementation of fiscal decentralisation could bring to social welfare depends on how local government allocates spending on activities devoted to meeting the need of societies by focusing on quality spending. With delegation of authority, budgeting involves a number of participants that leads to effectiveness (Hagen, 2002).

From the perspective of short-term period, the influence of regional financial structure on regional economic growth shows only 10% significance level, meaning that government spending in regencies in the Province of East Java focuses more on long-term development such as local infrastructure development. Therefore, the influence caused on the economic growth is seen in the long term.

Finally, it was also found that economic growth does not significantly influence regional financial structure. It indicates that the change in economic growth in regencies in the Province of East Java does not significantly influence the optimality in Own-Source Revenue (OSR) in terms of received tax and local levy in regional financial structure. This is not in line with the concept emphasising that economic growth could influence regional financial structure through the change in Own Source Revenue. The proportion of regional revenue in regencies that come from central government reaches about 90%, and it is used for spending in regencies in the Province of East Java, so that the development in regencies still takes more of the central government budget and the chance to optimise own source revenue is small.

According to Bahl and Sally (2001), fiscal decentralisation should go in line with the capability of the local government in optimising received tax (taxing power). Theoretically, local government's capability of collecting tax and levy will give more funding source that could support the development and thus could encourage regencies to be more self-governing. The tax received by local government could bring both positive and negative impact on regional economic growth. It is seen positive when tax revenue is spent by local government to develop infrastructure and support public spending. The tax is seen negative to economic growth when it causes deadweight loss of tax, in which the tax could reduce consumers' and producers' surplus when tax is charged on goods.

In the era of fiscal decentralisation in which local government is demanded to be able to run its function effectively and efficiently, proper funding resources should exist in order to support its function. Therefore, it is expected that local government could improve its fiscal capacity by developing competitive commodity-based economy, intensifying and extending Own Source Revenue (OSR) in order to be more self-governing.

Own source revenue could be increased by improving the existing tax and levy (Sidik, 2002). Increasing tax and levy in regional areas should also be in line with the improvement in public services. Improvement in public services is indicated by the increase in the proportion of spending for development as the empirical findings by Wong (2004) imply that tax increase occurs when local government raises expenditure for development in industrial sectors. It is implied that self-governing capacity will not be achieved when there is no participation from societies in tax paying.

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