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# The impacts of fiscal decentralization, institutional transformation, and regional revenue on income disparities between provinces in Indonesia

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## ABSTRACT

This study aims to determine the impacts of fiscal decentralization, institutional transformation, and regional revenue to the income disparity among the provinces in Indonesia. This study uses panel data with the number of runs 528 pieces of data that includes 33 provinces in Indonesia period 2000-2015. The data were taken from the Central Bureau of Statistics (BPS) and Bank Indonesia. They were analyzed using a multiple linear regression analysis. The results show that tax revenue sharing fund and natural resources revenue sharing fund impact positive and significant on the income disparity among the provinces in Indonesia, while the general allocation fund, special allocation fund, institutional transformation, and the local revenue do not significantly affect the income disparity among the provinces in Indonesia. Tax and natural resources revenue sharing fund are actually exacerbating the gap of income distribution among regions in Indonesia. The implication of this study is that the government needs to review the allocation mechanism of General Allocation Fund, Special Allocation Fund, Tax Revenue Sharing Fund and Natural Resources Revenue Sharing Fund in order to serve as an instrument of fiscal capacity equalization of each region as well income distribution equalization among regions in Indonesia. The local government needs to continue improving the local revenue through the optimization of local tax revenue, regional retribution, profits of Regional Owned Enterprises, and other legitimate acceptances.

## ABSTRAK

Penelitian ini bertujuan untuk mengetahui dampak desentralisasi fiskal, transformasi kelembagaan dan penerimaan daerah terhadap disparitas pendapatan antar provinsi di Indonesia. Penelitian ini menggunakan data panel dengan jumlah deret data 528 buah yang mencakup 33 provinsi di Indonesia periode 2000-2015. Data penelitian berasal dari Badan Pusat Statistik (BPS) dan Bank Indonesia. Teknik analisis data yang digunakan analisis regresi linear berganda. Hasil penelitian menunjukkan bahwa dana bagi hasil pajak, dana bagi hasil sumber daya alam berdampak positif dan signifikan terhadap disparitas pendapatan antar provinsi di Indonesia sedangkan dana alokasi umum, dana alokasi khusus, transformasi kelembagaan, dan penerimaan daerah tidak berdampak signifikan terhadap disparitas pendapatan antar provinsi di Indonesia. Dana bagi hasil pajak maupun dana bagi hasil sumber daya alam justru semakin memperparah kesenjangan distribusi pendapatan antar daerah di Indonesia. Implikasi dari penelitian ini adalah, pemerintah perlu mengkaji ulang mekanisme pengalokasian Dana Alokasi Umum, Dana Alokasi Khusus, Dana Bagi Hasil Pajak maupun Dana Bagi Hasil Sumber Daya Alam supaya bisa berfungsi sebagai instrumen pemerataan kemampuan fiskal tiap daerah sekaligus pemerataan distribusi pendapatan antardaerah di Indonesia. Pemerintah daerah perlu terus meningkatkan penerimaan daerah melalui optimalisasi penerimaan pajak daerah, retribusi daerah, keuntungan Badan Usaha Milik Daerah, dan penerimaan lain yang sah.

## 1. INTRODUCTION

The multi-dimensional crisis during 1997-1998 has

caused some changes in the government policies in Indonesia, starting from the amendment of the

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1945 Constitution of the State of the Republic of Indonesia, the direct election of President, and Regional Heads, the separation of Bank Indonesia from the government, the birth of many new political parties politics and, especially the birth of regional autonomy (Nurman 2013).

For example, The government issued the regional autonomy regulation through Law Number 22 of 1999 on Regional Government (State Secretariat of Indonesia 1999) and Law Number 25 of 1999 on Central and Regional Financial Balance (Secretariat of State of Indonesia 1999). The two laws are subsequently renewed into Law No. 32 of 2004 on Regional Government (State Secretariat of Indonesia 2004) and Law No. 33 of 2004 on Central and Regional Financial Balance (State Secretariat of Indonesia 2004). Regional autonomy gives each region the right, authority and obligation to manage local government in accordance with legislation through decentralization (Nurman 2013).

In Law Number 23 Year 2014 on Regional Government, Article 1 paragraph 8 states that decentralization is the handover of government affairs by the central government to the regional one for autonomous government based on the principle of autonomy (Secretariat of the State of Indonesia 2014). The principle of autonomy is the basic principle of local governance based on regional autonomy. Regional autonomy is the right, authority, and obligation of autonomous regions to regulate and manage on their own. With the existence of regional autonomy, the local government is directed to accelerate the realization of community welfare through the improvement of services, empowerment and the active role of society and regional competitiveness by taking into account the principles of democracy, equity, justice, privilege and specificity of a region in the governance of the Republic of Indonesia.

The implementation of fiscal decentralization began on January 1, 2001 by using the basic principles of "Money follows functions," the central function of public services, with the support of central financing through the delivery of sources of revenue to the regions (Sasana 2006). The implementation of fiscal decentralization will provide optimal benefits if followed by adequate fiscal capacity of the autonomous region (Mahi 2005).

According to Fisher in Kuncoro (2004), the transfer of funds from the government is the most prominent feature of the financial relationship between central and regional governments. In Indonesia, transfers from the central to the local

government include: general allocation funds, special allocation funds and profit-sharing funds. According to the Law of the Republic of Indonesia Number 33 of 2004 article 11, 12, 27.29, and 35 (Secretariat of State of Indonesia 2004), general allocation funds are some funds distributed by the central government to local governments to strengthen the regional fiscal conditions and reducing inequality of income distribution between regions. A special allocation fund is a fund transfer from a central government that is specific to certain regions within the framework of a national commitment and is only distributed to the district/city government. Tax-sharing funds are derived from land and building tax (PBB), land and building acquisition fees (BPHTB), and income tax (PPh). The revenue-sharing funds are from forests, general mining, fishery, petroleum mining, natural gas mining and geothermal mining.

According to Amri (2000), there are two main motives of regional autonomy and fiscal decentralization, namely economic motives and political motives. First, the economic motive is the desire to obtain justice and equity. So far, the areas with abundant natural resources cannot be utilized optimally because the tax is submitted to the central government. Second, the political motive of democratic demands to end the centralization. In essence, Indonesians in different regions want greater involvement in local governance.

The fiscal decentralization can affect income disparities. This is supported by the opinion of Mardiasmo (2009) which states that the implementation of fiscal decentralization as one of the instruments of government policy has principles and objectives, among others, to: 1) reduce the fiscal gap between the central government and the local government (vertical fiscal imbalance) as well as fiscal gap between regions (horizontal fiscal imbalance); 2) improving the quality of public services in the regions and reducing the disparity of public services between regions; 3) improve the efficiency of national resource utilization; 4) transparent and accountable governance in the implementation of funds allocation activities to the regions in a timely, efficient, and fair manner; 5) supporting fiscal sustainability in macroeconomic policy.

Government efforts to reduce the income distribution gap are also supported by improved governance activities through institutional transformation policies. According Yustika (2008), institutional transformation is a change in the principles of regulation, organization, behavior and patterns

of interaction in society. Institutional transformation provides widespread space for local governments to manage the basic functions of public services, with financial support from the central government through the disbursement of balancing funds. Through the improvement and improvement of the quality of local government governance, it is expected that the income gap between regions can be minimized.

Another factor that allegedly contributed to the income disparity among provinces was the Regional Revenue. According to Muluk (2006), local revenue in the decentralized government system comes from three sources: the original regional income, the transfer fund from the center and the loan. Regional revenue derived primarily from Regional Original Revenue is expected to be the main source of funding for operational and regional development while the Balancing Fund, in this case the General Allocation Fund is an unconditional grant which is expected to be a counterweight in the event of a fiscal gap (Mahi 2005). However, based on Nurman's (2013) study, regional revenues can not be a major source of local expenditure financing.

One of the measures often used as a benchmark of regional income disparity is Theil Index (Akita and Lukman 1999). According to Sjafrizal (2008), if the index is close to 1 (one), it means very imbalanced and vice versa, if close to zero, it means very equal. Based on the study by Nurman (2013), the level of income disparity in Indonesia is relatively high and it shows an increasing trend. The results of the studies by Burns, Jonathan K., Andrew Tomita, Crick Lund (2017: 10) in South Africa show that income inequalities and poverty are the greatest challenges that affect the mental health of the population. The high inequality of income distribution increases the risk of depression and mental problems of the population, causing other socio-economic problems. The results of the study, by Martinson, Melissa L., Julien O. Teitler, Rayven Plaza, Nancy E. Reichman (2016: 904) in the United States, show that income disparities have an impact on the health risk factors of the population especially on women. Health issues become one of the indicators of good socio-economic life. If people are able to manage their health, their social life will be better.

One of the main objectives of fiscal decentralization and institutional transformation is to reduce regional income disparities among local governments (Mardiasmo 2009; Siddik 2009). Based on the above background, this study focuses on

the effect of fiscal decentralization, institutional transformation and regional revenue on income disparities between provinces in Indonesia. The main problem of this study is to what extent the influence fiscal decentralization, institutional transformation and regional revenue on income disparity between provinces in Indonesia both simultaneously and partially?

## **2. THEORETICAL FRAMEWORK AND HYPOTHESES**

According to Law No. 23 of 2014 on Regional Government, article 1, paragraph 8, decentralization is the shifting of government affairs by the central government to an autonomous region-based on the principle of autonomy. The basic principle that must be considered is money follow functions, meaning that the transfer or delegation of government authority brings the necessary budgetary consequences to implement the authority.

There are two proxies for fiscal decentralization: decentralization of expenditure and decentralization of revenues. According to Bonet (2006), decentralization of expenditure is the direct expenditure of local governments per capita calculated by dividing direct local government spending by the total population of the area, while decentralization of revenues in the form of general allocation funds, local revenues and profit sharing (Nurman 2013).

Fiscal decentralization arises from the existence of horizontal imbalances and vertical imbalances. Horizontal imbalances are an imbalanced financial distribution between rich provinces and poor regions, whereas vertical imbalance is an imbalance of financial distribution between central, provincial and district/city. The financial balancing act between the Central Government and Regional Government is done through the Balancing Fund mechanism. According to Law No. 33 of 2004 Article 10, Balancing Fund consists of: 1) revenue sharing fund; 2) general allocation funds, and: 3) special allocation funds. The amount of Balancing Fund shall be set for each fiscal year in APBN (State Secretariat of Indonesia 2004).

Fiscal decentralization is implemented through the following balance fund mechanisms: First, Revenue Sharing Fund is revenue sharing derived from taxes and natural resources. Tax-sharing funds are derived from taxes derived from Land and Building Tax (PBB), Land Acquisition Rights and Building (BPHTB), and Income Tax

(PPh). The revenue-sharing fund derived from natural resources comes from forestry, general mining, fishery, petroleum mining, natural gas mining, and geothermal mining. Second, the General Allocation Fund is the channeling of central government funds that are lump sum the formula is based on several variables, among others, the population, the area, and the fiscal capacity of the area concerned. These funds are distributed in order to reduce disparities between provinces and inter-district/city. Third, the Special Allocation Fund (SAF) is a fund transfer that is specific to certain regions in the framework of the national commitment and is only distributed to the District/City Government (Law No. 33 of 2004 Article 11, 12, 27, 28, 35 38, 39, 40, 41, and 42).

Fiscal decentralization is thought to affect the income disparity between provinces. According to Wengast (1997), regional disparities relate to the efficiency of public services, so fiscal decentralization not only contributes to increased efficiency but also contributes to reducing regional disparities that occurred earlier. However, uncontrolled fiscal decentralization is likely to lead to concentrations of resources in certain geographic locations that can increase fiscal disparities among local governments (Granado, Arze del, F. Javier, Jorge Martinez-Vazquez & McNab, Robert M 2012). The results of the Jutting, Johannes, Celine Kauffmann, Ida Mc Donnell, Holger Osterrieder, Nicolas Pinaud & Lucia Wegner 2004) studies indicate that the relationship of fiscal disenfranchisement with poverty eradication is ambiguous.

The governance institution in Indonesia is dynamic in accordance to the interaction of economic interactions between interests. Institutional transformation in society means changes in regulatory and organizational principles, behaviors, and patterns of interaction (Yustika 2008). Institutional change has 2 dimensions. First, changes in the configuration between economic actors will trigger institutional change. Second, institutional transformation is deliberately designed to regulate economic activity (Yustika 2008).

According to North (1995), institutional transformation has 5 basic characteristics: 1) continuous institutional and organizational interaction; 2) Competition that makes the organization invest skills and knowledge to survive; 3) The institutional framework that directs the type of skills and knowledge to achieve the maximum pay-off; 4) Perceptions of mental constructs of the players (mental constructs of the players); 5) economic coverage, complementarities, and externalization

of institutional matrix networks that have path dependent paths.

Institutional transformation is thought to have a significant effect on reducing the inequality of income distribution between provinces in Indonesia. Institutional transformation embodied in regional expansion and changes in government structure led to the emergence of new governance that began pioneering economic activity in the region. The newly-expanded province continues to pursue socio-economic life in a more prosperous society through the provision of stimulus and support to the economic and monetary sectors in the area.

Regional revenue is thought to have a significant effect on regional income disparities. Based on Law Number 33 of 2004 on Fiscal Balance Between Central and Local Governments, local revenues are sourced from: local revenue, balancing funds, regional lending and other income (Secretariat Negara Indonesia 2004). According to Prud'homme (1995), the magnitude of regional revenue affects regional income disparities. With higher tax revenues, the area can provide better public services compared to the poorer areas. However, the results of the contradictory study were put forward by Gil, Pascud and Rapun (2002), Widhiyanto (2008), and Akai and Sakata (2005) indicating that local revenue is negatively and significantly correlated with regional income disparities.

Income disparity is the income distribution gap between regions or regions with other regions or regions (Sjafrizal 2008). Theil's Coefficient of Concentration has become a very popular index for analyzing spatial distribution and has advantages over other disparity indices. Theil Index is a statistical analysis used to measure income disparities by using entropy measures of inequality (Sjafrizal 2008). Theil coefficient can be interpreted as the logarithm of the weighted average geometry of regional per capita incomes deflected by the average per capita national income. Further, Wibisono (2003) states that for per capita income that is evenly distributed, the Theil index is given a weight of zero value. Theil Index has several advantages: 1) its nature is not sensitive to the scale of the area and is not affected by extreme values; 2) Theil index is independent of the number of areas so that it can be used as a comparison of disparities from different regional systems; 3) Theil index can be decomposed into index of inequality between and intra groups of regions to disparity between and disparities within the re-

gion of groups or groups simultaneously.

In addition, to determine the level of income disparity between provinces, the Weighted Coefficient Variation can also be used, in which it is the index of income variation between regions within a region (Kuncoro 2002; Weyerstrass 2000). Indonesia's disparity index when compared with developed countries (0.49-0.54) and middle income (0.46) will be above average (2000-2015). Indrayani's (2010:123) study indicates that the higher growth of Gross Regional Domestic Income (RIRB) or greater per capita income, the greater the disparity of income that occurs. Disparities fluctuate and tend to increase in subsequent stages of development.

The result of the study by Firdausy, Carunia Mulya, Haryo Aswicahyono & Lepi Tarmidi (2002) shows that the economic disparity between regions is very sharp. Java-Bali, which covers only 7.2% of Indonesia's territory, is inhabited by 64% of the population and accounts for about 60% of Indonesia's GDP. In contrast, Papua for example, covers an area of 22% of Indonesia, but it is only inhabited by 0.8% of the population and accounts for about 2.1% of Indonesia's GDP. These results support previous findings done in China that economic decentralization can promote economic growth, but it is inflationary (Brandt and Zhu 2000).

The result of study of Akita (2003) shows that income disparity between provinces is caused by unequal distribution of natural resources and low quality of transportation in some areas. The result of Dartanto and Brodjonegoro (2003) study shows that the fiscal decentralization policy in Indonesia has not been able to reduce the disparity between provinces. The result of the Mahroji (2005) study shows that there is still a vertical disparity between the central government, provincial and district/municipal governments in Indonesia in 2001.

The hypotheses in this study are as follows: 1) fiscal decentralization has a negative and significant effect on income disparities between provinces in Indonesia period 2000-2015; 2) institutional transformation has a negative and significant effect on income disparities between provinces in Indonesia period 2000-2015; 3) local revenue has a negative and significant effect on Income Disparities between Provinces in Indonesia period 2000-2015.

### **3. RESEARCH METHOD**

#### **Research Paradigm and Operational Definition**

This study uses a positivistic paradigm because it

is based on science, quantitative data, and facts that have occurred (Hussey and Hussey 1997). The data were those of data panel (pooled data) consisting of 33 Provinces consisting of 26 pieces of the old province (original) with 7 new provinces (bloom) and in the period of 2000-2015. The data were from BPS, BI and Ministry of Finance publications. The data panel has some advantages such as: 1) considering heterogeneity by introducing specific individual variables; 2) more informative, more varied, collinearity between less variables, greater degree of freedom, and more efficient; 3) appropriate to study the dynamics of change; 4) better detect and measure effects that can not be observed in the cross section and time series data; 5) can be used to study complex behavioral models; 6) panel data can minimize possible bias caused by individual data aggregation (Gujarati 2003; Wooldridge 2006).

The operational definition of the research variables is as follows: 1) Fiscal decentralization is the process of budget distribution from the central government level to the local government to support the functions or tasks of the delegated government. The value of fiscal decentralization is determined by the amount of GAF, SAF, TSF, and NRSF in rupiah units; 2) Institutional transformation is a change in regulatory and organizational principles, behaviors, and patterns of interaction within the community resulting from the expansion of the region as well as changes in the organizational structure of government. The value of institutional transformation variables is determined using a scale rating of 1 to 5 with the details of score 1 not very transformative, score 2 not transformative, score 3 quite transformative, 4 transformative and 5 highly transformative score; 3) Regional revenue is the accumulation of local tax revenue, regional retribution, profit of local enterprises, regional loans and other legitimate revenue measured in rupiah; 4) Income disparity is the level of income disparities between provinces as measured by the index unit Theil.

#### **Technique of Data Analysis**

This study used multiple-regression analysis technique analyzing the effect of fiscal decentralization, institutional transformation, and regional revenue on income disparities between provinces. The dependent variables in this study were income disparity among provinces, while the independent variables are General Allocation Fund (GAF), Profit Share Fund originating from Tax (PSFT), Funds of Profit from Natural Resources

**Table 1**  
**Results of Multiple Regression Test**

Coefficients

Model	Unstandardized Coefficients		Std. Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.281	.274		4.673	.000
Regional revenues	-1.608E-10	.000	-.013	-.273	.785
Profit Share Fund derived from Tax	1.255E-9	.000	.393	4.452	.000
Funds of Profit from Natural Resources	2.372E-9	.000	.346	7.750	.000
Special Allocation Fund	-3.225E-9	.000	-.041	-.905	.366
Institutional Transformation	.542	.396	.064	1.366	.173
Original Regional Income	-1.580E-10	.000	-.084	-.920	.358

a. Dependent Variable: Income Disparity between Provinces

Source: BPS data from various editions, processed 2016.

**Table 2**  
**The Value of R2**

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.826a	.682	.679	4.06E+07

a. Predictors: (Constant), Regional Income (in Thousand Rupiah), Special Allocation Fund (in Thousand Rupiah), Institutional Transformation, Profit-Share Fund from Natural Resources (in Thousand Rupiah) General Allocation Fund from Tax (in Thousand Rupiah)

Source: Processed data 2016.

(FP-NS), Special Allocation Fund (SAF), Institutional Transformation (IT), and Original Regional Income (ORI). The income disparity function ( $Y_2$ ) = f (GAF, TSF, NRSF, SAF, IT, and Regional original Income, so the regression equation as follows:  
 $Y_2 = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + e$ . (1)

Description:

$Y_2$  = Regional revenue Disparity per Province in Indonesia

$X_1$  = General Allocation Fund/GAF

$X_2$  = Profit Sharing Funds derived from Taxes (PSF\_Tax)

$X_3$  = Revenue Funds derived from Natural Resources (RFNS)

$X_4$  = Special Allocation Fund (SAF)

$X_5$  = Institutional Transformation (IT)

$X_6$  = Regional Income (RI)

$\beta_0$  = The regression constant

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$  = Regression coefficient

$e$  = disturbance's error.

In order for multiple regression becomes the model estimator of BLUE (best, linear, unbiased, estimator), it is necessary to test the classical assumption.

### The Classical Assumption Test

There are three classical assumption tests that

need to be done so that the BLUE multiple regression is fulfilled such as multicollinearity test, heterocedasticity test, and autocorrelation test. First, multicollinearity is a condition that indicates that one or more independent variables can be expressed as linear combinations of other variables. The multicollinearity test was done by using Collinearity Statistics analysis. Secondly, the heterocedasticity of the state indicates that the disturbance factor does not have the same variant. To reveal the presence or absence of heterocedasticity problem, Spearman Rank Correlation Test used. Third, the autocorrelation of circumstances indicates that the confounding factors are one with the other interconnected. Tests of autocorrelation symptoms were done by using Durbin-Watson test (Ghozali 2005; Wooldridge 2006).

### T-test and F-Test

To test the level of significance of each regression coefficient, this study used the t-test. If t-computed < t table means individually independent variable has no significant effect on dependent variable, vice versa if t-arithmetic  $\geq$  t table, means individually independent variable have significant effect to dependent variable.

To test all coefficients of regression estimator simultaneously then the test was done by using F-



test. If  $F\text{-arithmetic} < F\text{ table}$ , mean simultaneously the independent variable does not affect the dependent variable, otherwise if  $F\text{-arithmetic} \geq F\text{ table}$ , means simultaneously the independent variable influences the dependent variable (Gujarati 2003).

#### 4. DATA ANALYSIS AND DISCUSSION

The Impacts of Fiscal Densentralization, Institutional Transformation and Regional Revenue on Income Disparities

The test results of panel data on the effect of fiscal decentralization, institutional transformation and regional revenue on income disparities between provinces in Indonesia in 2000-2015 can be seen in Table 1.

Table 1 presents the results of multiple regression on fiscal decentralization, institutional transformation and regional revenue to income disparities among provinces in Indonesia in 2000 - 2015. Based on Table 1, the following regression equation can be shown.

$$ID = 1.281 - 1.608 \text{ GAF} + 1.255 \text{ PSFT} + 2.372 \text{ FP-NS} - 3.225 \text{ ORI} + 0.542 \text{ IT} - 1.580 \text{ RG} + e_t$$

Description :

*IID* = Income Disparity among Provinces

*GAF* = General Allocation Fund

*TSF* = Tax Share Fund

*NRSF* = Natural Resource Share Fund

*SAF* = Special Allocation Fund

*IT* = Institutional Transformation

*RI* = Regional Income.

Further, it can be calculated for the value of  $R^2$  as in Table 2. Based on Table 2, it can be seen that the R-squared ( $R^2$ ) value is 0.682.  $R^2$  means that 68.2% Income Dividend (ID) among provinces in Indonesia can be explained by Special Allocation Fund (SAF), General Allocation Fund (GAF), Profit Sharing Fund (PSF\_TAX), Revenue Sharing Fund (PSF\_NS), Institutional Transformation, and Regional Revenue, while the remaining 31.2% is explained by other variables outside the model, eg consumption level, development expenditure, employment, population, investment, interest rate, and governance.

The beta constant coefficient (C) is positive with 1.281 with probability of 0.0000 meaning significant at alpha 0.01. The coefficient implies that the Revenue Disparity (ID) between provinces in Indonesia is 1.281 when the Institutional Transformation, SAF, GAF, TSF, PSF\_NS and Regional Revenue are zero. In other words, if there is no SAF, GAF, TSF PSF\_NS, Institutional Transformation, and Regional Revenue, the Income Disparity

among Provinces in Indonesia is 1.281.

The beta coefficient of the General Allocation Fund (GAF) of -1.608E-10 with a probability of 0.785 is not significant at  $\alpha = 0.05$ . It implies that the GAF has no significant impact on income disparities (ID) among provinces in Indonesia. The beta coefficient of Profit Sharing Fund (TSF\_TAX) is positively marked as 1.255E-9 with probability of 0.0000. TSF probability is 0.000 smaller than significance level  $\alpha = 0.01$  with positive value beta coefficient so it can be concluded that TSF has positive and significant impact to income disparity among provinces in Indonesia at significance level  $\alpha = 5\%$ . This means that if TSF increased by 1 unit then Income Disparity (ID) increased by 1.255E-9 units.

The beta-sharing coefficient of TSF is positive with 2.372E-9 with a probability of 0.000. PSF\_NS probability 0.000 is smaller than significance level  $\alpha = 0.01$  with positive value beta coefficient so it can be concluded that PSF\_NS has positive and significant impact on Income Disparity (ID) among provinces in Indonesia at significance level  $\alpha = 0.01$ . PSF\_NS beta coefficient of 2.372E-9 means that if PSF\_NS increases by 1 unit then Income Disparity (ID) in Indonesia increases by 0.000 units.

The beta coefficient of the Special Allocation Fund (SAF) of -3.255E-9 with a probability of 0.366 is not significant at  $\alpha = 0.05$ . It implies that SAF has no significant impact on income disparities (ID) among provinces in Indonesia. The beta coefficient of Institutional Transformation (IT) of 0.542 with a probability of 0.173 is not significant at  $\alpha = 0.05$ . It implies that Institutional Transformation has no significant impact on income disparity (ID) among provinces in Indonesia period 2000-2015. The Regional Acceptance (beta) Coefficient beta of -1.580 with a probability of 0.358 is not significant at  $\alpha = 0.05$ . Thus, Regional Revenue (RI) has no significant impact on income disparities (ID) among provinces in Indonesia.

Furthermore, to find out whether GAF, TSF, PSF\_NS, SAF, institutional transformation (IT), and RI together significantly influence income disparities between provinces in Indonesia, F test results can be observed in Table 3.

As presented in Table 3, it can be seen that the F arithmetic value is 19.810 with asymptote significance of 0.000. Since the asymptote significance value of F arithmetic is smaller than 0.05, it can be concluded that there is a mutual and significant effects of GAF, TSF, NRSF, SAF, institutional transformation (IT), and RI to income disparity

**Table 3**  
**Results of F-Test**

ANOVA<sup>b</sup>

	Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1074.186	6	179.031	19.810	.000 <sup>a</sup>
	Residual	3515.638	389	9.038		
	Total	4589.824	395			

a. Predictors: (Constant), Regional Income (RI), Natural Resource Share Fund (NRSF), Special Allocation Fund (SAF), GAF, Institutional Transformation (IT), Tax Share Fund (TSF)

b. Dependent Variable: Income Disparities Between Provinces

Source:: Data processed 2016.

**Table 4**  
**Results of Multicollinearity Test**

Coefficients<sup>a</sup>

	Model	Unstd. Coefficients		Std. Coefficients	T	Sig.	Collinearity Stat.	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-9.573E6	4.521E6		-2.117	.035		
	Institutional Transformation	1.160E7	6.539E6	.036	1.774	.077	.885	1.130
	GAF	.007	.010	.016	.764	.445	.837	1.194
	Tax Share Fund	-.060	.005	-.495	-12.872	.000	.252	3.967
	Natural Resource Share Fund	.024	.005	.091	4.697	.000	.989	1.011
	Special Allocation Fund	.127	.059	.042	2.152	.032	.978	1.022
	Regional Income	.092	.003	1.294	32.628	.000	.237	4.221

a. Dependent Variable: Revenue Disparity

Source: Processed data 2016.

among provinces in Indonesia period 2000-2015. In other words, the regression model used is fit to predict Income Disparities among provinces in Indonesia.

### Results of Classic Assumption Test

The multicollinearity test relies on the value of Variance Inflation Factor (VIF) and its tolerance values. For example, if the VIF value is below 5, and the tolerance value is below 1 and close to 1. Thus, it means that there is no a multicollinearity. From the statistical test, the values of VIF and tolerance can be seen as in Table 4.

From Table 4, it can be concluded that the regression model has no multicollinearity problems because all Variance Inflation Factor (VIF) values are below 5 and its tolerance values are close to 1.

Heterocedasticity test in this research was done by using Spearman-Rank and Kendall Method. The result of heterocedasticity test can be seen in Table 5.

From Table 5, it is seen that the asymptote significance value (2-tailed) correlation of each independent variable with dependent variable is smaller than alpha 5%, meaning that regression did not contain heterocedasticity problem.

Autocorrelation test was done using Durbin Watson method. The results of the Durbin Watson autocorrelation test can be observed in Table 6.

From the results of the autocorrelation test, it can be seen that the DW value is 1.282. By observing the Durbin Watson table, the a significance is of 0.05, with the number of panel data 528 and k = 6 (the number of variables obtained dL = 0.85 and DU = 1.05.). Thus, it was obtained with the dU <DW <4-dU (1.05 <1.282 <2.35) that is, the model has no an autocorrelation problem.

From this test, it turns out that the regression equation has been free from symptoms of multicollinearity, heterocedasticity and autocorrelation which means that the regression equation has already qualified as a BLUE estimator (best, linear, unbiased, estimator).

### Discussion

General Allocation Fund (GAF) has no significant effect on income disparities between the provinces with beta coefficient of -1.608E-10 and the probability of 0.785 significant at  $\alpha = 0.05$  (5%). GAF transfers could not reduce the income distribution gap between provinces in Indonesia over the period 2000-2015. This is due to the weak monitoring

**Table 5**  
**Results of Heterocedasticity Test**

			ID
Spearman's rho	Institutional Transformation	Correlation Coefficient	-.237**
		Sig. (2-tailed)	.000
		N	396
	GAF	Correlation Coefficient	.093*
		Sig. (2-tailed)	.045
		N	396
	Tax Share Fund	Correlation Coefficient	.816**
		Sig. (2-tailed)	.000
		N	396
	Natural Resource Share Fund	Correlation Coefficient	.371**
		Sig. (2-tailed)	.000
		N	396
	Special Allocation Fund	Correlation Coefficient	.073*
		Sig. (2-tailed)	.048
		N	396
	Regional Income	Correlation Coefficient	.829**
		Sig. (2-tailed)	.000
		N	396

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

Source: Processed data 2016.

and evaluation of GAF in every province. Therefore, the GAF usage has not functioned optimally as fiscal equalizing transfer and income equalization.

Equalizing the transfer is an effort to equalize the fiscal capacity of each region (province) which is the main objective of providing equalization funds within the framework of regional autonomy. Yet, income equalization is an effort of equal distribution of income between regions in Indonesia. GAF has not been optimally utilized to lead to equitable distribution of fiscal capabilities among regions in order to help the independence of local governments perform their functions and duties to serve the community.

The finding by Nurman (2013: 3) indicated that there is a potential efficiency loss from the GAF allocation, which is often targeted. GAF's allocation during this time was purely based on the fiscal gap. The fiscal gap is the difference from fiscal needs and fiscal capacity. Some rich areas receive GAF several times as much as they should, while many poorer regions receive less than they should. However, different findings are presented by Waluyo (2007) that GAF is able to reduce the income gap between regions although the decline

in the coefficient value of no variation is too significant with alpha 10%.

Tax Sharing Funds (TSF) have a positive and significant impact on the income distribution gap. The beta coefficient of PSF of 1.255 implies that TSF\_TAX contributes to the disparity of income between provinces in Indonesia period 2000-2015. This is because TSF consisting of Land and Building Tax (PBB), Acquisition of Land and Building Rights (ALBR), and Income Tax are very uniformly distributed throughout Indonesia Province. Distribution of Income Tax for areas with high level of industrial and service activities such as Jakarta, East Kalimantan and Riau is much larger than other provinces in Indonesia.

The result of this research is in line with Waluyo (2007) findings that Income Tax and Land Building Tax (LBT), ALBR become one of the causes of income gap between regions. Brodjonegoro (2001) also states that tax-sharing funds are not likely to result in a disparity in national income. Funds however, different findings proposed by Siagian (2010) that TSF negatively affect on regional inequality in West Java. Nurman's study results (2013: 15) indicate that revenue sharing has a negative but significant impact on the increase of

**Table 6**  
**Results of Autocorrelation Test**

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.826a	.682	.679	4.06E+07	1.282

a. Predictors: (Constant), regional Income, Natural Resource Share Fund, Special Allocation Fund, GAF, Institutional Transformation, Tax Share Fund

b. Dependent Variable: Income Disparity

Source: Processed data 2016.

regional income disparities in Indonesia during 2001-2008.

Natural Resources Revenue Sharing Fund (NRRSF) has a positive and significant impact on the income disparity gap (disparity). The TSF beta coefficient of 2.372 means that TSF contributes to the disparity of inter-provincial income in Indonesia between 2000 and 2015. This is because the uneven distribution of natural resources is evenly distributed throughout Indonesia. There are 3 Provinces that have a share of TSF greater than the other provinces of Nanggroe Aceh Darussalam, Riau and East Kalimantan with a percentage of more than 3% of the total RIRB, while South Sumatra, Central Kalimantan North Maluku obtain TSF about 1% of the RIRB. Other provinces generally earn less than 1% of their total RIRB. The smallest area receiving TSF is Banten Province, which is 0.008% of its RIRB.

The results of this study are in line with Waluyo's (2007) findings that the PSF\_NS has the greatest positive influence on inter-regional disparities in Indonesia. However, different findings are presented by Siagian (2010) that TSF has a negative impact on regional inequality in West Java. The result of Nurman's study (2013: 15) also indicates that the profit sharing fund including natural resource revenue sharing has a negative but significant effect on the increase of regional income disparity in Indonesia during 2001-2008 period.

The findings above not in line with the main motive for decentralization. According to Amri (2000), one of the main motives behind the demands of regional autonomy and decentralization is the economic motive for obtaining justice and equity. Not all regions in Indonesia have natural resources. Natural resource-sharing funds (NRSF) are mostly received by East Kalimantan, Riau, South Sumatra, Nanggroe Aceh Darussalam, Riau Islands, and Papua, while other regions only receive small natural resource revenue-sharing funds.

The Special Allocation Fund (SAF) has a significant impact on income disparities between provinces in Indonesia for the period 2000-2015. The beta coefficient of the Special Allocation Fund (SAF) is -1.580 with a probability of 0.258 not significant at  $\alpha = 0.05$  (5%). This is because not all provinces in Indonesia receive SAF flows so that SAF has no a significant impact on income disparities between provinces in Indonesia.

By 2013, most of the provinces that have earned SAF flows, only 5 provinces have received SAF flows, namely Nanggroe Darussalam, Central Java, Banten, Central Sulawesi and Papua Provinces. Of the 5 Provinces that received the SAF in 2013, the Province with the highest number of SAF is the Province of Papua while the least is Central Sulawesi (BPS 2014).

The Institutional Transformation has a significant effect on the disparities in interprovincial income in Indonesia from 2000-2015. The beta coefficient of Institutional Transformation is 0.542 with a probability of 0.173 not significant at  $\alpha = 0.05$  (5%). This is because the institutional transformation embodied in the division of regions and changes in government structures led to the emergence of new governance that began to pioneer economic activity from the beginning. Consequently, the newly expanded province within a certain time period has not been able to pursue the development and economic growth of other already established provinces. Institutional transformation has not been able to encourage the independence of regional governments to carry out their functions and duties to serve people in their areas. Local governments experiencing regional expansion need to perform internal and external efficiencies and boost regional economic growth in order to minimize inequality income distribution with other provinces.

Regional income has a significant impact on income disparities between provinces in Indonesia for the period 2000-2015. The beta coefficient of the Special Allocation Fund (SAF) is -1.580 with a

probability of 0.258 not significant at  $\alpha = 0.05$  (5%). This happens because local revenue is levied by the local government from the community on a proportional basis. Regional revenues are derived from local taxes, regional levies, local government-owned products and local financial management and other legitimate local revenue less focus on equitable distribution of income across regions.

The same results were found by Nurman (2013: 12) that regional income has no a significant effect on the decline in regional income disparities in Indonesia over the 2001-2008 period. The direction of effect from regional acceptance is contrary to the theory proposed by Prud'homme (1995) stating that the region's tax base will accrue the increased regional income disparity.

The results of the Gil, Pascud, and Rapur (2002) show that there is a negative correlation between local tax decentralization and regional income disparities in the 15 OEDC member countries. Other studies presented by Akai and Sakata (2005) also show that there is a negative and significant correlation between local government revenue and regional income disparities in states in United State of America. The result of the study by Widhiyanto (2008) also shows a significant negative correlation between regional revenue with regional income disparity in Indonesia during 2001-2004 period.

Shah and Thompson (2004) argue that local governments in Indonesia have very limited access to local revenue sources, and even the authority is limited to tariff fixing set by the Central Government. Land and Building Tax, Land Acquisition Rights of Land and Building which by its nature should belong to the category of local taxes but, in fact, all were collected by the Central Government and then distributed to the regions with certain portions.

## **5. CONCLUSION, IMPLICATION, SUGGESTION, AND LIMITATIONS**

Based on the results of this study, it can be concluded as follows:

First, General Allocation Fund (GAF) has no a significant effect on income disparities among provinces because most are used for regional salaries. Second, the Profit Sharing Fund (PSF\_TAX) has a positive and significant effect on the income distribution gap. TSF actually worsens the income disparities among provinces in Indonesia. Third, Natural Resources Revenue Funds (PSF\_NS) have a positive and significant impact on the income disparity gap (disparity). PSF\_NS also exacerbated

the disparity of income between provinces in Indonesia period 2000-2015. Fourth, the Special Allocation Fund (SAF) has no a significant impact on income disparities between provinces in Indonesia period 2000-2015. Fifth, Institutional Transformation has a significant impact on income disparities between provinces in Indonesia. Sixth, regional revenue has a significant impact on income disparities between provinces in Indonesia.

Based on the findings of this study, it can be proposed as follows: First, the central government needs to review and improve the mechanism of allocation of General Allocation Funds, Tax Sharing Funds, Natural Resource Revenue Funds and Special Allocation Funds to optimize the function of tools for equal distribution fiscal region (equalizing transfer) as well as equal distribution of income between regions in Indonesia (income equalization). The mechanism for dividing the proportion of tax-sharing funds needs to be reorganized to reduce inter-regional fiscal gaps. Second, the implementation of institutional transformation needs to be balanced with efforts to reduce the income distribution disparities between communities in the province as well as between provinces through internal and external efficiency in the local government. Third, local governments need to continue to seek to increase local revenue through the optimization of local tax revenues, regional levies, profits of regional government-owned enterprises, and other legitimate receipts. The use of local revenue funds should be supported by monitoring and evaluation mechanisms and intensive assistance from relevant ministries. Fourth, the central government is advised to consider other instruments that can be used to reduce income disparities between provinces in Indonesia because GAF, TSF, PSF\_NS and SAF are proven effective as instrument income equalization.

This study has several limitations: First, data on institutional transformation in this study focuses on institutional changes accrued by the expansion of provincial areas in Indonesia over the period 2000-2015. In reality, during that period, there were also 135 districts, and 32 cities formed as a result of the expansion of the region. Therefore, the next research is expected to capture the effect of the expansion of the region at the district and municipality level to the income disparity between provinces in Indonesia. Second, it is the same over time when regarding the panel data regression from 2000 to 2015 in 33 provinces in Indonesia with 528 data sets with interprovincial

data behavior assumptions across Indonesia. Therefore, the next research is also suggested to use another approach, such as panel data regression model with Fixed Effect Approach or Random Effect Approach.

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