Fiscal decentralization and regional income: evidence from Papua province, Indonesia

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Abstract. The purpose of this research was to study the effect of fiscal decentralization in terms of regional original income, balance funds and special autonomy with economic growth in the province of Papua in 2010-2017. Our results showed a positive relationship between local revenue and economic growth. Positive and significant relationships are aimed at balancing funds, special autonomy funds, and economic growth.

1. Introduction

In 1998 there was a reformation in Indonesia. Reformation took place in all fields, one of which was in the financial sector. In addition to experiencing economic reformation on a large scale, Indonesia also experienced changes in the state management system, from centralized systems to decentralized systems. The existence of this change explains the Central and Regional Financial Balance which gives authority or autonomy that is broad, real and accountable to the regional government proportionally. All of this is reflected in the State document Law No. 33 of 2004.

Local governments can manage and implement their resources good governance that will have an impact on the services provided to the community. Autonomy or decentralization is intended to provide better public services and create a more democratic public decision-making process. This form of decentralization is in the form of authorization from the central government to the level of the regional government to spend, collect taxes, form a council elected by the people, elect regional heads by the people, and have assistance (transfers) from the central government. Generally, decentralization includes political, administrative and fiscal aspects.

The primary function of financial decentralization is the efficiency of the public sector and leads to long-term economic growth [1]. The decentralization of the financial sector is expected to bring several benefits to public administration, including growth, accountability, and the response of government officials to local needs and needs [2].

Fiscal decentralization can be divided into two categories, namely: regional government fiscal autonomy, and the fiscal importance of regional governments. Regional government fiscal autonomy is related to intergovernmental fiscal transfers. Regional loans and responsibilities for the provision of public goods and services, while fiscal interests are directly connected with the level of responsibility for regional government expenditure on the level of all government expenditure[3].

Government-specific financial responsibility is in the context of the decentralization of financial markets. It also includes financial instruments and procedures to support the delivery of public goods...
According to Thießen (2001) decentralization of funding takes into account the transfer of accountability responsibilities to local governments [5]. He argues that decentralized funding is seen as a potential for local governments to increase tax revenues and make decisions about how to use cash resources within the legal boundaries of various projects. In general, fiscal decentralization has been monitored as part of a package of reforms aimed at increasing the efficiency of the public sector, encouraging competition between lower levels of government in the provision of public goods and accelerating economic growth[6].

Research also stated that fiscal decentralization had a positive effect on economic growth in Iran during the period 2001-2007 [7]. Philip (2012) stated that fiscal decentralization with indicators of government revenues and expenditures in Africa has a negative impact on economic growth in the period 1970-2009 [8]. According to Hanif et al., (2014), fiscal decentralization indicators of government revenues and expenditures had a significant positive impact on Pakistan in the period 1972-2010 [9].

According to Penthury, in financial decentralization, local authorities must be able to provide public facilities to all communities [10]. Infrastructure is the key to economic growth. By preparing good infrastructure it will increase productivity [11]. The government can provide economic infrastructure to facilitate economic growth, increase resource allocation, and improve economic activity.

Indicator of success in development in an area can be seen from the overall economic growth and sectoral economic growth. High economic growth is expected to improve the living standards of existing communities, which in turn can achieve the prosperity of a nation and region.

Regional development is an integral part of national development carried out based on the principles of regional autonomy and national resource regulation that provide opportunities for improving democracy and regional performance to improve the welfare of society towards a civil society that is free of collusion, corruption, and nepotism. The implementation of regional government as a sub-system of the state is intended to increase the usability and results of the implementation.

The growth of the economy caused by real changes in the production, reduced the effects of price changes. The more economic activities carried out, the higher the economic growth, and the increased welfare, or vice versa [12].

If seen from the financial data of the districts/cities in Papua, the special autonomy funds are observed to grow and always increase. It can be said that in general regional revenues are still dominated by central government transfer funds. Meanwhile, from the viewpoint of Papua's economic growth rate, it ranks in the top three lowest at 6.06%. Although the allocation of funds used is quite large, there are still problems in the regions/cities in Papua that are related to welfare. Very ironic, the last few years of the tragedy for the sake of the humanitarian tragedy have continued to occur. Disbursement of funds continues to increase, but there is still an Extraordinary Event of hunger, malnutrition, and epidemics that never stop.

2. Literature review
Since work, Oates (1993) in the literature, stated that fiscal decentralization is generally a successful way to increase efficiency and productivity of public expenditure and income from a theoretical and practical perspective [13].

Akai and Sakata’s (2002) research showed the evidence that fiscal decentralization on income and expenditure indicators contributes to economic growth, while the autonomy indicator has no significant effect on economic growth in the United States in the period 1992-1996 [4]. Ebel and Yilmaz discuss the problem of decentralized economic growth, expenditure, and income from six countries in Central and Eastern Europe [14]. They use two-dimensional estimation techniques for analysis. The study found that local taxes on income and non-tax revenues from private sources of local government had a positive impact on growth.

Jin et al. [15] plate data used in 29 Chinese provinces covered a period of time from 1970 to 1999. The analysis was carried out according to the two-way method of fixed impact painting data. The growth of non-agricultural employment is a variable, and the proportion of regional expenditure to central expenditure in a province is the fiscal decentralization variable. The analysis shows that fiscal decentralization income has a positive impact on private employment.
Malik et al., based on time series data for the period 1972-2005, provides theory and evidence of the relationship between fiscal decentralization and economic growth in Pakistan [16]. The search produces different results. They found many positive and important decentralization variables. The overall study concluded that the decentralization of public finance led to accelerated economic growth.

Hanif et al. [9] investigating the impact of fiscal decentralization on economic growth in Pakistan used time-series data (1972-2010). Pilot evidence shows that financial decentralization (expenditure and income) is an effective tool to promote economic growth in Pakistan. Also, note that increasing regional income in total government revenues also has a positive relationship with economic growth.

3. Methodology
To explore the relationship between fiscal decentralization determined by Regional Original Income, balanced funds, and special autonomy funds and economic growth in Papua province, Indonesia, this study uses secondary data derived from data on the results of examination reports of the financial audit of the Republic of Indonesia, and reports on the statistics center bodies of districts and cities in the relevant Papua Province from 2010-2017. The type of data used is panel data. The data used are data from 29 districts/cities in the Papua Province with a period of data examined between 2010 - 2017.

Variable research used:
1) Regional Original Income is income derived from the total regional tax, Regional tax yields, the results of regional institutions, results of treatment of separate regional assets and other legitimate regional revenues for total regional income.
2) Balancing funds are funds sourced from the National Revenue and Expenditure Budget (APBN) allocated to the regions to fund regional needs consisting of Revenue Sharing Funds, General Allocation Funds, Special Allocation Funds for total regional income.
3) Special Autonomy Funds is the proportion of the realization of the Special Autonomy Fund to the total Regional Income.
4) Economic growth, namely the development of economic activities as seen from the increase in GRDP of regencies/cities in the province of Papua. Economic growth in this study was measured by a ratio between GRDP year t minus GRDP year t-1 with GRDP year t-1.

4. Results and discussion
Our complete data collection is based on eight yearly observations from 2010 to 2017 on selected variables. Table 1 summarizes the descriptive statistics of the selected variables. The first column shows that the average inflation rate (PAD) of regional initial income for our analysis period is 2.86 with a value of 79.28. As shown in the table, the average value of Equation Funds (DP), Self-Governing Funds (DOK) and variables have an average of 10.49 and Economic Growth (EC) 8.16.

**Table 1.** Descriptive statistics

|       | PAD  | DP   | DOK  | EG   |
|-------|------|------|------|------|
| Mean  | 2.86 | 79.28| 10.49| 8.16 |
| Median| 1.64 | 80.77| 10.06| 7.280|
| Maximum|25.52 | 96.51| 31.40| 29.75|
| Minimum| 0.19 | 57.64| 2.30 | -16.360|
| Std. Dev.| 3.33 | 6.98 | 4.15 | 4.985 |

One of the most important assumptions of the Ordinary Least Square (OLS) method is that there should be no multiple linear relationships between variables. To estimate experimental results, multiline problems were examined in the models observed in the first study. Most related link matrices are used to determine multicollinearity problems. The results of the correlation matrix are given in table 2.
Table 2. Results of the correlation variable

|      | PAD       | DP    | DOK   |
|------|-----------|-------|-------|
| PAD  | 1.000     |       |       |
| DP   | 0.433     | 1.000 |       |
| DOK  | -0.156    | 0.345 | 1.000 |

Table 2 shows the level of relationships between variables. The results showed that each variable did not have multi-linearity.

In this study, we observed that the results of all variables confirmed theoretical expectations. PAD, DP, DOK are directly related to growth and economic development (EC). Our results show a positive relationship between local revenue (PAD) and (EG) economic growth. A positive and significant relationship is addressed by (DP) balance funds, (DOK) special autonomy funds with economic growth (EG).

Table 3. Results with economic growth the dependent variable

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|----------|-------------|------------|-------------|-------|
| C        | 5.303       | 2.080      | 2.549       | 0.011 |
| PAD      | 0.198       | 0.078      | 2.519       | 0.012 |
| DP       | 0.049       | 0.024      | 2.006       | 0.046 |
| DOK      | 0.102       | 0.032      | 3.118       | 0.002 |

Fiscal decentralization is seen from Regional Original Income, balancing funds, and special autonomy funds is an important income for regions to fulfill their regional expenditure. This includes the most important sources and also the backbone of financing in meeting regional needs. It can also be interpreted as the higher the Regional Original Income generated and the transfer funds provided, the higher the regional expenditure incurred by the regional government for public services for the community and creating new economic growth.

In accordance with what is said in the fiscal federalism theory revealing fiscal decentralization is expected to improve the performance of the government in improving public welfare through revenue and expenditure management. The essence of fiscal decentralization is the provision of authority and freedom to allocate budgets according to regional needs and priorities. Two important instruments in implementing fiscal decentralization are the authority to collect taxes and transfer to the regions.

According to these results, the decentralization of public finance is an effective tool for increasing the productivity of the public sector and promoting long-term economic growth in Papua as suggested by Oates [13]. Similar results have been done by Samimi et al. [7], Philip and Isah [8] and Hanif et al. [9]

5. Conclusion

The empirical results explain the local revenue, balance funds and special autonomy funds with growth in the province of Papua has a positive and significant influence. Provincial and regional levels must be given more autonomy and authority in fiscal matters. Undoubtedly, fiscal autonomy will generate more resources, increase self-confidence and also make the regions more responsible for creating people's welfare and economic growth. The government can provide economic infrastructure to facilitate economic growth, increase resource allocation, and increase economic productivity.
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