The Effects of Special Autonomy Fund and Oil and Gas Revenue Sharing on Education Spending and the Quality of Education: The case of Districts and Cities in Aceh

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Abstract: As a special autonomy region in Indonesia, Aceh is entitled to additional fund of special autonomy and oil and gas revenue sharing. Education sector has become a main focus to utilize these funds. Therefore, the issue of special autonomy related funds and its association with the quality of education is interesting to study. Data were collected based on documents and reports available in Directorate General of Fiscal Balance of The Indonesian Ministry of Finance and Aceh Development Board. The results showed that special autonomy fund and oil and gas revenue sharing provide a positive effect on the allocation of education spending. Further analysis showed that the allocation of education spending provide a positive effect on the quality of education.

Keywords: Quality of education, allocation of education spending, Special Autonomy Fund, oil and gas shared revenue

Introduction

Law No. 20 of 2003 on Indonesian National Education System requires that the national education system must be able to guarantee equal educational opportunities, improving the quality and relevance and efficiency of education management to meet the challenges in accordance with the demands for changes in local, national, and global environment. So, educational reform should be carried out in a planned, purposeful, and sustainable. According to this Law, central government is required to provide a high quality of education for every citizen without any discrimination, and responsible for providing adequate facilities and infrastructure for education in accordance with the changes of local, national and global environmental.

Under the framework of the implementation of the special autonomy (Otsus), Aceh received a significant amount of funds, either the special autonomy fund or from oil and gas revenue sharing. Organisation For Economic Coorperation and Development (OECD) (2006:4) explain: “Intergovernmental grants are one of the revenue sources of subnational governments”. Grants are an important source of revenue for subnational governments, complementing their own revenues which include revenues from direct and indirect taxation and non tax revenues”. According to Law No.11 of 2006 on The Government of Aceh article 183 paragraph (1) stated that Aceh entitled Special Autonomy Fund as Aceh Government income aimed for financing development especially development and maintenance of infrastructures, economic empowerment of the people, eradicating poverty, as well as funding of education, social and health. Special Autonomy Fund is valid for a period of 20 (twenty) years, with the details that for the first year up to the fifteenth year the amount of which is equal to 2% (two percent) of the ceiling of National General Allocation Fund and for the sixteenth year up to the twentieth year the amount of which is equal to 1% (one percent) of the ceiling of National General Allocation Fund.

According Department Finance of the Republic of Indonesia and the Directorate General of Fiscal Balance (2008: 46), the notion of revenue sharing of Natural Resources Oil and Gas as a fund derived from natural resources mining of oil and gas from the district / city in province. In Law 11 of 2006 article 181 subsection (3) states that The Government of Aceh obtain additional revenue sharing of oil and gas which are part of the acceptance of the Government of Aceh, part of the
oil mining by 55% (fifty-five percent); and part of the mining of natural gas by 40% (forty percent).

The total amount of these funds received by the Government of Aceh and its districts and cities for seven year period of 2008-2014 has reached 40,294 billions Rupiah - (Bappeda 2014).

To support the fulfillment of the educational facilities, the government must allocate sufficient of fund to achieve the expected educational goals. Based on Aceh Rules (Qanun) No. 5 Year 2008 and the Governor Regulation No. 79 Year 2013 Aceh Government must allocate education budget of at least 20% of the special autonomy funds and 30% of the funds from oil and gas. For districts and cities level, National Law No.11 of 2006 urged the districts/ cities to allocate funds for the delivery of education by 20% of their budget.

Discussing the allocation of education spending should be related with the issue of the funds available for the provision of educational infrastructure both physical and non-physical. So, public expenditure in education is the total expenditure, in a certain percentage, allocated in education to ensure the extent of the government's priority to education as compared to other fields such as health, social security and defense and security, and also to ensure that education is affordable by the society.

Public expenditure on education, as a percentage of total public expenditure, indicates the extent to which Governments prioritise education in relation to other areas of investment, such as health care, social security, defense and security. Education is one area in the which all Governments Intervene to fund or direct services. As there is no guarantee that markets will provide equal access to education opportunities, government funding ensures that education is not beyond the reach of some members of society " OECD (2011: 249).

Based on data from the The Directorate General of Fiscal Balance of The Ministry of Finance (MOF DJPK) the amount of funds that have been allocated for education expenditures at the provincial level and districts and cities in Aceh for the same period (7 years) has reached 35,949 billions Rupiah, include both direct and indirect expenditures of education programs and activities. Although the allocation for education spending is quite large but the achievement of education quality in Aceh have not shown satisfactory results. Majid (2011) in his research concluded that although the education indicators in most districts / cities in Aceh has been satisfactory, but the quality is still very poor compared to other provinces in Indonesia.

The quality of education is a measure or standard used to measure the success of the provision of education by comparing indicators in the field of education. United Nations Children ‘s Fund concluded that quality of education includes processes through the which trained teachers use child-centered teaching approaches in well managed classrooms and schools and skilful assessment to facilitate learning and reduced disparities, and outcomes that encompass knowledge, skills and attitudes, and are linked to national goals for education and positive participation in society.

In Aceh, the quality of primary school up to high school graduates are ranked 30 out of 34 provinces in Indonesia. The low quality of the graduates was primarily caused by the low quality of teachers, which is ranked 30 nationwide.

The low quality of education in Aceh is also conveyed by Abdullah (2014), who found that the results of the National Selection for Higher Education (SNMPTN) for academic year of 2011/2012 show low competency attainment of secondary school graduates in Aceh compared to other provinces in Indonesia. The average score reached by high school graduates in Aceh was 44.86 for science group (ranked 31 out of 33 provinces), while the social group was 43.19 (ranked 25 out of 33 provinces).

These conditions indicate that that, although substantial amount of funds from the special autonomy funds and funds for oil and gas as well as other funding sources has been granted, but unfortunately the quality of education in Aceh is still not satisfaction. It should become a serious concern of the government, academics and all related parties at improving the quality of public education and to increase the quality of academic year human resources in the future.

The problem of Education quality as influenced by the substantial of funds in Aceh becomes interesting to study. The purpose of this research is to examine the influence of special autonomy funds and funds for oil and gas on the allocation of education spending and its impact on the quality of education in Aceh.

**Methods**

This study sought to explain the relationship between special autonomy funds (X1), oil and gas...
revenue sharing (X2), and the allocation of education spending (Y), and the quality of education (Z). The data used is secondary data obtained from the Directorate General of Fiscal Balance of the Ministry of Finance (DJPK) and from Aceh Development Board as well as The Education Council of Aceh.

In this study, data were collected from Aceh Provincial Government and 23 districts in Aceh, with the observation period of 5 (five) years 2008-2012. Data that were collected consist of special autonomy fund, oil and gas shared revenue, and the allocation of funds for education. Meanwhile, the quality of education were observed for the period of 2009-2013.

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In this study, the quality of education (Z) is measured by: literacy rate (AMH), net enrollment ratio (NER), education attained (AL), school participation rate (APS), eligible teachers. This indicator is based on the education performance indicators in the Aceh Medium Term Development Plan 2012-2017.

Data were analysed using path analysis, which is processed using SPSS. According to Sugiono (2011:297) path analysis is used to delineate and test the model of the relationship between variables in the form of causation (not a form of interactive relationship / reciprocal). Path analysis follows the pattern model of the structure as in figure 1.

![Diagram](image)

**Figure 1.** Path analysis on expected relationship between variables in the study

Based on the pattern of the path analysis as in Figure 1, the test of relationship used the following equation:

For Sub structure of the I: \( Y = \beta_1 X_1 + \beta_2 X_2 + \epsilon_1 \)

For Sub Structure II: \( Z = \beta_3 X_1 + \beta_4 X_2 + \beta_5 Y + \epsilon_2 \)

Wherein Z is the quality of education, Y is the allocation of education spending, X1 is a special autonomy fund, and X2 is oil and gas shared revenue.

**Results and Discussion**

The Influence of Special Autonomy Fund and Oil and Gas Shared Revenue on Education Expenditure Allocation (Structure I)

Test of the effect of special autonomy funds and oil and gas shared revenue on the allocation of education spending was done. Based on Table 1, correlation coefficient (R) of 0.525 and coefficient of determination (R2) of 0.276 were found, that means the allocation of education spending is simultaneously affected by revenue of special autonomy funds and funds for oil and gas.

The Influence of Special Autonomy Funds on the Allocation of Education Spending
The results show that there are positive influence of special autonomy funds with the allocation of education spending as can be seen from the path coefficient of 0.347. which means that if the special autonomy funds rose by 1 (one) unit, the allocation of education spending will increase by 0.347.

### Table 1. Coefficients of structure 1

<table>
<thead>
<tr>
<th>Variables</th>
<th>Path Coefficient (B)</th>
<th>R</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1 (Special autonomy fund)</td>
<td>0.347</td>
<td>0.525</td>
<td>0.276</td>
</tr>
<tr>
<td>X2 (Oil and gas fund)</td>
<td>0.223</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### The Influence of Oil and Gas Shared Revenue on the Allocation of Education Spending

Testing the effect of oil and gas shared revenue on the allocation of education spending shows the result that there are positive influence between the amount of the receipt of oil and gas revenue on the allocation of education spending. It is seen from the value of the path coefficient of 0.223. It means that if the funds for oil and gas revenue increased by 1 (one) unit, the allocation of education spending will increase by 0.223.

### Table 2. Coefficient of Structure 2

<table>
<thead>
<tr>
<th>Variables</th>
<th>Path Coefficient</th>
<th>R</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1 (Special autonomy fund)</td>
<td>0.210</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X2 (Oil and gas fund)</td>
<td>-0.354</td>
<td>0.254</td>
<td>0.0 65</td>
</tr>
<tr>
<td>Y (Education spending)</td>
<td>0.069</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### The Effect of Special Autonomy Fund on the Quality of Education

The influence of special autonomy funds to quality education is shown by the path coefficient of 0.210. It can be explained that the special autonomy funds positively affect the quality of education. That is, each of the addition of 1 unit of special autonomy fund will increase 0.210 units of the quality of education.

### The Effect of Oil and Gas Shared Revenue on the Quality of Education

Partial path coefficient of structure 2 shows that oil and gas revenue sharing negatively affects the quality of education. The value of path coefficient is -0.354, this means that despite a decline in revenue-sharing of oil and gas revenues, but the quality of education keeps rising. It is reasonable since oil and gas revenue keep declining lately as the decline of oil and gas production in this region. Meanwhile, Special autonomy fund keep rising. So, the quality of education is increasing as special autonomy fund increased.

### The Effect of Education Expenditure Allocation on the Quality of Education

The influence of the allocation of education spending on the quality of education is shown by path coefficient values of 0.069. It shows that the allocation of education spending positively affects the quality of education. That is, an increase or addition of 1 unit of allocation of education expenditure will increase 0.069 units of the quality of education.
spending will increase the quality of education by 0.069. This proves that the education budget allocation can raise the quality of education in Aceh.

Direct and indirect relationship between variables is depicted as in table 3.

Table 3. Direct and Indirect Relationship between Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Path coefficient</th>
<th>Relationship</th>
<th>Total</th>
<th>Keterangan</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Direct</td>
<td>Indirect</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_1$ on $Z$</td>
<td>0.210</td>
<td>0.210</td>
<td>0.210</td>
<td>Positive</td>
</tr>
<tr>
<td>$X_2$ on $Z$</td>
<td>-0.354</td>
<td>-0.354</td>
<td>-0.354</td>
<td>Negative</td>
</tr>
<tr>
<td>$Y$ on $Z$</td>
<td>0.069</td>
<td>0.069</td>
<td>0.069</td>
<td>Positive</td>
</tr>
<tr>
<td>$X_1$ on $Z$ through $Y$</td>
<td>$0.499^*$</td>
<td>$2 \times (0.210 \times 0.069 \times 0.499)$</td>
<td>0.014</td>
<td>Positive</td>
</tr>
<tr>
<td>$X_2$ on $Z$ through $Y$</td>
<td>$0.460^*$</td>
<td>$2 \times (-0.354 \times 0.069 \times 0.460)$</td>
<td>-0.022</td>
<td>Negative</td>
</tr>
<tr>
<td>Simultaneous impact</td>
<td></td>
<td></td>
<td>0.083</td>
<td></td>
</tr>
<tr>
<td>Other variables</td>
<td></td>
<td></td>
<td>0.917</td>
<td></td>
</tr>
</tbody>
</table>

Based on path analysis of structures 1 and 2, it can be explained that there is a direct influence of special autonomy funds on the quality of education with path coefficient of 0.210 (Table 2). According to the previously set up criteria of 0.01 - 0.08, the influence is medium, and weak when the influence is through the allocation of education spending. Oil and gas revenue-sharing negatively influence the quality of education with a coefficient of -0.354 (Table 2). According to the criteria of acceptance of 0.24 to 0.49, and weak negative influence (-0.022) through the variable of allocation of education spending. Both of these conditions show that the influence of special autonomy fund and oil and gas shared revenue on education quality is partially mediated by the allocation of education spending.

Conclusions

The results show that the special autonomy funds and oil and gas shared revenue affects the quality of education either directly or through the mediation of the allocation of education spending.

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