The Effect of Regional Financial Autonomy on Economic Growth in Aceh Province

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Abstract: The condition of regional financial independence in Aceh Province is not optimal, so it is expected to affect economic growth. Previous studies have only descriptively explored the condition of the regional financial independence level in Aceh Province. They did not analyze how it affects economic growth. It is important to study this because Aceh is highly dependent on the transfer of funds from the central government. Therefore, this study will investigate the effect of financial independence, degree of fiscal decentralization, and revenue effectiveness as indicators of regional financial independence on economic growth in Aceh Province, Indonesia. The panel data regression method is used to analyze the data, where this study uses panel data consisting of 23 districts/cities in Aceh Province as cross-section data and time series data in an annual form from 2018 to 2022. The data applied were sourced from the Aceh Central Bureau of Statistics (CBS) and the Directorate General of Fiscal Balance. The findings show that financial independence has a negative and significant effect on economic growth, the degree of fiscal decentralization has a positive and significant effect on economic growth, and revenue effectiveness is not significant on economic growth. It is recommended that district/municipal governments in Aceh Province maximize financial independence to avoid being at the instructive level by increasing PAD and reducing dependence on external funds.

Keywords: Regional financial independence; Degree of fiscal decentralization; Revenue effectiveness; Economic growth

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1. Introduction

So far, the analysis of the determinants of economic growth has only focused on economic and social factors. However, it is rare to find studies examining economic growth in terms of the government's financial condition. This study will investigate the effect of financial independence on economic growth in Aceh Province, Indonesia. It is motivated by the economic growth in Aceh Province, which is smaller than the national economic growth. In addition, financial independence in Aceh Province is still very low and classified as instructive. The pattern of instructive independence shows the dependence of the Aceh Regional Government on the transfer of funds from the central government, which is very large. It indicates that Aceh Province has not optimized the role of Regional Original Revenue or Pendapatan Asli Daerah (PAD). PAD in financing regional expenditures so Aceh Province cannot be said to be a financially
independent region. The lack of financial independence of the Aceh Government is likely to affect the level of economic growth in Aceh Province.

Economic growth shows the ability of a country to produce output. Setyadi et al. (2020) stated that economic growth is closely related to the economic development of a region. The main objective of regional economic development is to improve people's welfare. Economic development that only focuses on infrastructure development will not necessarily improve social welfare, even though the region's economic growth is increasing (Koch, 2013). However, sometimes, for some regions, economic growth is not the primary determinant of community welfare, where economic growth is unable to reduce socioeconomic inequality (Syahnur et al., 2021).

Under stable conditions or no crisis, Indonesia's economic growth is above 5 percent. During a crisis, such as during the Covid-19 pandemic crisis, growth dropped in 2020 to -2.07 percent. However, Aceh Province's economic growth is lower than the national, ± 3 percent, from 2018 to 2022. The average economic growth of all districts/cities in Aceh Province from 2018 to 2022 is 3.07 percent. In 2018 and 2019, 22 districts/municipalities had significantly higher growth rates than the provincial average. Due to the COVID-19 pandemic, in 2020, there was only 1 district that was above 3.07 percent, namely Nagan Raya District, while the rest were below the average economic growth rate of Aceh Province. It can be said that almost all districts/cities in Aceh Province were affected by the Covid-19 pandemic. In the following years, 2021 and 2022, respectively, there were 10 and 20 districts/cities with economic growth rates above the average of Aceh Province.

Economic growth is influenced by the financial independence of a region that uses a fiscal decentralization system. The more independent a region is the greater its economic growth potential. This is because the region is managed economically, efficiently, and effectively, and there is minimal policy intervention from the central government (Yasin & Hardi, 2022). In addition, a region's high level of financial independence reflects its financial capacity to finance the local government's activities. Regional financial independence is also a measure of the successful implementation of the autonomy policy (Qisthina et al., 2019). In reality, most of the local governments in Indonesia still have a high dependence on the Central Government, especially Aceh Province. Based on the financial independence ratio calculation, the condition of financial independence in Aceh Province shows the phenomenon of the level of independence of districts/cities in Aceh on average very low and classified as instructive. This instructive relationship pattern shows the lack of financial independence of local governments in Aceh, so it is still financially dominated by financing from the central government.

The prevailing fiscal decentralization policy has provided flexibility for the regions to manage funding sources in the regions within their regions optimally (Lubis & Ningsi, 2022). The level of regional financial independence will be reflected through the accumulation of Regional Original Revenue or Pendapatan Asli Daerah (PAD). PAD that continues to increase will provide a better indication of the region's financial ability to regulate regional autonomy rights or its households. Transfer funds obtained from the central government only stimulate regions to be motivated to increase efforts to increase PAD. With the special autonomy fund, PAD can affect spending on goods and services (Abrar, 2018). PAD and transfer funds in Aceh Province are almost equal, although PAD is slightly more excellent. The high transfer funds the central government provides to the Aceh local government indicate that the region still needs to manage its finances independently.

Previous research relevant to this study that mainly discusses economic growth and regional financial independence has been conducted such as Prakoso et al. (2019) dan Nabillia et al. (2023), found that regional financial independence has a positive and significant effect on economic growth. Sadarrudin et al. (2022) found that regional independence positively affects regional economic development. Widilestariningtyas (2019) shows that increased financial independence is not followed by increased economic growth in Jawa Barat. In contrast, Suarjana et al. (2019) shows that increasing economic growth will increase regional financial independence. Regional financial independence can also be assessed through the degree of fiscal decentralization, as used by research by Gemmell et al. (2013) in OECD countries by finding that fiscal decentralization in the form of revenue will be in line with increased economic growth. In descriptive analysis, Prakoso et al. (2019) found that in Central Java, regional financial independence is classified as instructive. Oki et al. (2020) found the same thing as Prakoso et al. (2019) in Belu Regency. Research examining financial effectiveness has been conducted by Ulfah et al. (2020) in Aceh Province, who found that finance in Aceh was ineffective. Qisthina et al. (2019) found that implementing fiscal decentralization through PAD has not significantly improved the economy in 12 districts/cities in SWP Gerbangkertosusila Plus. In different directions, Lubis & Ningsi (2022) found that economic growth has a negative effect on regional financial performance.
Based on Neoclassical Growth Theory, economic growth is largely determined by economic capital formation (Neoclassical quote). The level of regional independence will illustrate the amount of capital deployed by the central and local governments to a region. The capital will be used for regional development activities, such as increasing economic growth and encouraging poverty reduction (Arafah, 2022; Nalle & Pangastuti, 2023). Previous research relevant to this study that mainly discussed economic growth and regional financial independence, such as research by Gemmel et al. (2013), Oki et al. (2020), Prakoso et al. (2019), Nabillia et al. (2023) and Ulfah et al. (2020) have been conducted. Concerning previous research, this study is quite different. These studies use different indicators of regional financial independence with different research years, and the regions studied are also different, so the results show differences because the methods used are also different. This study specifically bases the level of regional financial independence based on financial independence, fiscal degree, and revenue effectiveness in Aceh Province. This is very important to study, considering that Aceh Province is one of the provinces with a high dependence on funds from the central government.

However, there has yet to be research that specifically examines the financial independence of districts/cities in Aceh Province and its effect on economic growth. Research conducted with Aceh as the object of research only analyzes regional financial independence descriptively without testing its effect on economic growth. Therefore, this study is present to fill the gap with the research objective of analyzing the effect of regional financial independence on economic growth in Aceh Province. Di mana, regional financial independence can be measured through indicators such as the financial independence ratio, degree of fiscal decentralization, and revenue effectiveness. With these indicators, it can be analyzed the performance and ability of local finance in achieving regional financial independence in Aceh Province. Analysis of regional financial independence can be used as helpful evaluation material to improve the performance of local governments in the next period (Oktalina, 2020). In addition, the analysis of the relationship between regional financial independence and economic growth aims to study the extent to which the regional financial independence can contribute to economic growth in Aceh Province.

2. Materials and Methods

2.1. Materials

The data used is panel data, namely a combination of cross-section data from 23 districts/cities in Aceh province and time series data for 2018 - 2022. Secondary data was obtained from the Central Bureau of Statistics of Aceh Province Directorate General of Fiscal Balance. Economic growth is the dependent variable, while financial independence, degree of fiscal decentralization, and revenue effectiveness as independent variables. All variables used are measured in units of percent. Measurement of the value of the financial independence ratio is obtained by dividing PAD by transfer funds and loans multiplied by 100%. The degree of fiscal decentralization can be obtained by dividing PAD by total regional income, which is then multiplied by 100%. Revenue effectiveness can be assessed by sharing the amount of PAD revenue realization with the PAD revenue target and multiplying by 100%.

2.2. Methods

This research uses a quantitative approach to achieve the research objectives. Because it uses panel data, this research uses the panel regression method to estimate data and analyze research results. The regression model estimation method using panel data can be done through three approaches, including the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). Several tests can be done to choose the most appropriate model, including the Lagrange Multiplier, Chow, and Hausman tests. More, in the economic growth model, the Cobb-Douglass production function is described as an equation of the economic relationship between inputs and outputs. Economic growth and regional financial independence can be linked through the Cobb-Douglas function, so indicators of regional financial independence can affect economic growth through capital formation (K). In general, this production function can be described in the following equation:

\[ Q = f(K, L) \]  \hspace{1cm} (1)

\[ Q = A.K^{a}.L^{b} \]  \hspace{1cm} (2)
Changes in Linear Regression Equations

Before the data can be processed and analyzed further, the data obtained must be converted into natural logarithms (Ln). However, since the units of all variables used in this study, such as economic growth, financial independence, degree of fiscal decentralization, and revenue effectiveness, are in percent, it was decided not to convert them into logarithms. Then the regression equation becomes:

\[ \log Q_{it} = \log A + \alpha \log K_{it} + \beta \log L_{it} + e_{it} \]  

\[ (3) \]

Where \( \log Q_{it} \) is the natural logarithm of economic growth; \( \log A \) represents the constant term; \( \alpha \) and \( \beta \) denote the regression coefficients; \( \log K_{it} \) and \( \log L_{it} \) represent financial independence and degree of fiscal decentralization, respectively; \( e_{it} \) is the error term; \( i \) denotes the \( i \)-th district/city; \( t \) is the \( t \)-th year.

3. Results

3.1. Descriptive Statistics

Descriptive statistics will provide a concise overview of the overall data used. The overview is known from information related to the average, median, maximum data, minimum data, standard deviation, and the number of observations of each variable in this study.

Table 1. Descriptive Statistics (N=115)

<table>
<thead>
<tr>
<th></th>
<th>EG (Percent)</th>
<th>FI (Percent)</th>
<th>DFD (Percent)</th>
<th>EFT (Percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>3.09</td>
<td>14.68</td>
<td>10.31</td>
<td>92.91</td>
</tr>
<tr>
<td>Median</td>
<td>3.78</td>
<td>12.75</td>
<td>9.55</td>
<td>93.20</td>
</tr>
<tr>
<td>Maximum</td>
<td>10.14</td>
<td>39.14</td>
<td>24.78</td>
<td>183.56</td>
</tr>
<tr>
<td>Minimum</td>
<td>-3.39</td>
<td>6.49</td>
<td>5.56</td>
<td>13.63</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>2.07</td>
<td>6.53</td>
<td>3.77</td>
<td>13.63</td>
</tr>
</tbody>
</table>


Notes: EG: Economic Growth; FI: Financial Independence; DFD: Degree of Fiscal Decentralization; EFT: Regional Financial Effectiveness

Table 1 presents the descriptive statistical values of economic growth, financial independence, degree of fiscal decentralization, and financial effectiveness in Aceh Province from 2018 to 2022. Overall, the number of data observations of the four variables used in this study is the same, each with 115 data observations. Descriptive statistics for the district/city economic growth variable in Aceh Province show that the average economic growth is 3.09 percent. With an average figure of 3.09, it means that the economic growth of Aceh Province is still at a stable level during 2018-2022. The average district/city regional financial independence level in Aceh Province is 14.68 percent. This value indicates that the average regional financial independence in Aceh is inadequate, meaning that local governments in Aceh do not have good financial independence and have not maximized the implementation of regional autonomy. With these descriptive statistics, local financial independence in Aceh is still lacking because funding provided by the central government still dominates it.

The degree of fiscal decentralization of districts/cities in Aceh Province from 2018 to 2022 shows an average value of 10.31 percent. With this value, it can be interpreted that the level of fiscal decentralization in Aceh Province, on average, is still classified in the less category. Regional financial effectiveness in Aceh Province shows an average value of 92.91 percent which can be interpreted that the condition of regional financial effectiveness of the Aceh Government is quite effective. Through descriptive statistics that provide an overview of this research data, it can generally be concluded that district/city economic growth in Aceh Province is neither low nor high at 3.09 percent. The level of regional financial independence is still classified as not independent enough because it has a number included in the instructive independence group. The degree of fiscal decentralization provides information that the average district/city in Aceh Province is still lacking, and the level of regional financial effectiveness is quite adequate. Generally, the condition of regional finances in Aceh Province still needs to be improved.
3.2. Determining the Best Model

Further testing is required in the Chow, Hausman, and Lagrange Multiplier (LM) tests to determine the best panel model. The test results of determining the best model are shown in Table 2.

<table>
<thead>
<tr>
<th>Testing</th>
<th>Prob. Description</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chow Test</td>
<td>Cross-section Chi-Square</td>
<td>0.6400</td>
</tr>
<tr>
<td>Hausman Test</td>
<td>Cross-section random</td>
<td>0.1638</td>
</tr>
<tr>
<td>LM Test</td>
<td>Cross-section Breusch-Pagan</td>
<td>0.1362</td>
</tr>
</tbody>
</table>

With a confidence level of 5%, the test results to determine the best model show that the Chow test with insignificant results decided that the CEM was chosen temporarily. The Hausman test, which also showed insignificant results, made REM the best model. Due to the different results from the Chow and Hausman tests, the LM test showed that the CEM is the best panel data model to be selected. The conclusion of the best model determination test decided that the CEM is the best panel data model to be chosen as a reference in analyzing the research results.

3.3. Common Effect Model

Testing the best model determines the common effect model, the best model in this study that can be used for analysis and as part of the research results. The common effect model estimation results are shown in Table 3.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>1.6658</td>
<td>1.2186</td>
<td>1.3669</td>
<td>0.1744</td>
</tr>
<tr>
<td>FI</td>
<td>-0.1885</td>
<td>0.0704</td>
<td>-2.6774</td>
<td>0.0085</td>
</tr>
<tr>
<td>DFD</td>
<td>0.3755</td>
<td>0.1246</td>
<td>3.0129</td>
<td>0.0032</td>
</tr>
<tr>
<td>EFT</td>
<td>0.0034</td>
<td>0.0096</td>
<td>0.3596</td>
<td>0.7198</td>
</tr>
<tr>
<td>R-Squared</td>
<td>0.0769</td>
<td></td>
<td></td>
<td>0.0302</td>
</tr>
</tbody>
</table>

Table 3 captures the estimation result using the common effect model show that the level of financial independence negatively and significantly affects economic growth in Aceh Province. The degree of fiscal decentralization has a positive and significant effect on economic growth in Aceh Province. The effectiveness of local finance shows insignificant results on economic growth in Aceh Province. The probability value of the F-statistic shows a significant number, which implies a simultaneous or joint influence of local financial independence, the degree of fiscal decentralization, and the effectiveness of local finance on economic growth in Aceh Province. On the other hand, the r-squared value of this study shows a value of 0.0769. The variation in changes in the rise and fall of the level of economic growth in Aceh can be explained by the level of local financial independence, the degree of fiscal decentralization, and the effectiveness of local finance by 7.69 percent. In contrast, the rest is explained by other variables not included in this study.

4. Discussion

The level of regional economic growth is determined by many factors, one of which is how local governments manage their finances through local budgets and revenues. This study investigates local financial independence through the ratio of financial independence, degree of fiscal decentralization, and local financial effectiveness on economic growth in Aceh. This study has three main findings. First, the financial independence ratio's influence on economic growth in Aceh. It was found that the ratio of financial independence negatively influences economic growth. This finding is contrary to theory and how things should be, where the financial independence of each region should be able to increase the region's economic growth instead of contributing to lower growth.

Fiscal or financial independence will show the ability of district/city local governments in Aceh to finance their expenditures. Its negative effect on economic growth indicates that the more independent the district/city governments in Aceh are in funding their expenditures, the lower the economic growth. It
Inaccurate budget allocation causes the sector or field allocated by the government budget to be unable to make a significant contribution, and output for PAD, and economic growth cannot be achieved. This statement is supported by the research results by Dewi & Suputra (2017), who found a negative relationship between PAD and economic growth. Meanwhile, PAD is closely related to financial independence. The amount of PAD will determine how financially independent a region is. Fulfillment of public services indicates more significant fiscal needs. The magnitude of fiscal needs should not make the government depend more on the central government, but local governments must be able to optimize local revenues, especially in the form of PAD as a form of fiscal independence (Uhise, 2013). Meanwhile, research by Abrar (2018) has proven that special autonomy funds have helped PAD increase spending on goods and services.

The results of this study contradict research by Prakoso et al. (2019) who found a positive effect of regional financial independence on economic growth in West Java. After being observed, West Java has a high level of PAD and independence, so it turns out that regions with a high level of financial independence can positively contribute to economic growth. However, this study's results align with research conducted by Siregar & Pratiwi (2017) which examines the independence of all local governments in Indonesia. In addition to Siregar & Pratiwi (2017), the results of research by Pakaya et al. (2022) found that economic growth in the secondary and primary sectors had a negative effect on regional financial independence in Gorontalo Province.

The financial independence ratio of local governments in Aceh Province is still very low; on average, almost all regions are classified as instructive independence. Increasing the ratio of financial independence to a higher level, such as participatory or delegative, will positively impact economic growth. It is expected that local governments in Aceh can further increase revenue from PAD so that local financial independence can be higher. In addition, Aceh's local government shows a high dependence on external funding sources. Economic growth in Aceh could be more driven by external funding sources such as transfers, loans, grants, and others than using its own funding sources, which are so low that they cannot make a positive contribution to economic growth. The high dependence on funds from outside the region suggests that the performance of district/city governments in Aceh is reduced in increasing economic output. Local governments tend to rely on funding from the central government to carry out financing and development, so the motivation to increase PAD is reduced. This statement is in accordance with research conducted by Suci & Asmara (2014).

Second, the effect of the degree of fiscal decentralization on economic growth in Aceh. This study found that the degree of fiscal decentralization positively affects economic growth. It should be the ability of a region to carry out its financing through its local revenues. The degree of fiscal decentralization shows the ability of district/city local governments in Aceh to finance their local expenditures with revenue or revenue from the region. Funds derived from regional revenues will have a much more positive impact on economic growth. The higher the degree of fiscal decentralization, the higher the financial ability of the region to fund its needs. This indicates that needs met with local revenues will have a much more positive impact on economic growth. Fiscal decentralization will facilitate a better understanding of the exact needs of the region and what is prioritized, resulting in better public services and increased community welfare (Irawan et al., 2022). The results of this study are supported by research Gemmell et al. (2013) who also examined fiscal decentralization in OECD countries by finding that fiscal decentralization in the form of revenue will be in line with increased economic growth. With such results, this study suggests that expenditures be financed locally or through the revenue of each region.

Third, results related to the effectiveness of revenue in influencing economic growth. The results show that the effectiveness of local finance does not affect economic growth in Aceh Province. Revenue
effectiveness explains the ability of local governments to manage their revenues as targeted. With the results showing no effect of effectiveness on economic growth in Aceh, this shows that how the government targets their revenue through the budget against what is obtained in real terms, does not contribute to economic growth in Aceh. Aceh receives Special Autonomy Funds from the central government, which is its main source of revenue. This dependence on autonomy funds can reduce local incentives to optimize local revenue sources and hinder optimal local financial management. This leads to less dynamic local economies that are responsive to fiscal initiatives. The results of this study are in accordance with research Putra & Hidayat (2016), which also found that revenue effectiveness did not affect economic growth in Jambi Province.

5. Conclusions

This study assesses the local financial independence of district/city governments in Aceh Province by analyzing the effect of financial independence, the degree of fiscal decentralization, and the revenue effectiveness on economic growth in Aceh Province. Panel data is applied, which includes 23 districts/cities in Aceh Province as a cross-section, and annual data from 2018 to 2022 as time series data. This study applied the panel data regression method to achieve the research objectives. After the best model selection test, the common effect model was determined as the best panel data regression model. The results of this study showed the following findings: 1) The level of financial independence in Aceh Province has a negative and significant effect on economic growth in Aceh Province. This result can be obtained due to the less than optimal budget management by the Government of Aceh, which does not prioritize budget allocations that can increase economic productivity; 2) The degree of fiscal decentralization has a positive and significant effect on economic growth in Aceh Province. This shows the ability of district/city governments in Aceh to finance their local expenditures through local own-source revenues (PAD), which leads to increased economic growth; and 3) Local financial effectiveness has no significant effect on economic growth in Aceh Province. These results indicate that the effectiveness of revenue targets against the revenue budget does not contribute to economic growth in Aceh.

Based on the results that this study found, suggestions and recommendations can be proposed, including 1) It is hoped that the district/city government in Aceh Province can maximize financial independence by allocating budgets and expenditures effectively and efficiently so that Aceh is no longer at the instructive level of independence. In addition, funding capabilities need to be improved through the region's results by increasing PAD revenue and reducing dependence on external funding such as the central government. Increasing PAD can be studied by finding what the advantages of each region and sector have the potential to contribute to PAD; 2) for further research, it can use data over a more extended period and cover all districts/cities in Indonesia.

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