



THE INFLUENCE OF GENUINE REVENUE, GENERAL ALLOCATION FUNDS, SPECIAL ALLOCATION FUNDS AND OIL AND GAS PRODUCT SHARING FUNDS ON THE ECONOMIC GROWTH OF ACEH PROVINCE

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Abstract

This study aims to analyze the effect of regional own-source revenue, general allocation funds, special allocation funds, and oil and gas profit-sharing funds on the economic growth of Aceh province using the Vector Auto Regression (VAR)/ Vector Error Correction Model (VECM) method. The results showed that based on the VECM estimation test, in the short term, local revenue and general allocation funds had a negative and significant effect on economic growth. Meanwhile, the special allocation fund variable has a positive and insignificant long term effect. however, the oil and gas profit-sharing fund variable has a negative and significant effect on the economic growth of Aceh province. In general, based on the IRF test, the shock that occurred in the variables of general allocation funds and oil and gas profit-sharing funds was responded negatively by economic growth.

Keywords : *Regional Own Revenue, General Allocation Fund, Special Allocation Fund, Oil and Gas Profit Sharing Fund, Economic Growth, and VECM*

1. INTRODUCTION

1999 can be noted as a major change in viewing the regions from a centralized to decentralized system. In the planning and management of development funds for each region contained in Law no. 22 of 1999 concerning Regional Autonomy and Law no. 25 of 1999 concerning Central and Regional Financial Balance. Regional Autonomy implies the delegation of broad public service authority to the regions, which brings budgetary consequences (expenditure assignments), so that it must be accompanied by broad delegation of authority in terms of revenue (revenue assignments).

Through decentralization regulated in Law no. 25 of 1999 which was perfected by Law no. 33 of 2004 concerning Financial Balance between the Central and Regional Governments, Revenue Sources Used by Regional Governments in the Implementation of Regional Autonomy include: regional original income, general allocation funds, special allocation funds, profit sharing funds and other sources.

Aceh is a province in Indonesia whose capital is in Banda Aceh. Aceh is one of the provinces that is given the status of a special region and is also given special autonomy authority. Aceh Province in the era of regional autonomy continues to strive to increase economic growth through increasing GRDP.

In the macro concept, it can be analogized that the greater the GRDP obtained, the greater the regional revenue potential. So, with an increase in GRDP, this indicates that it will encourage an increase in local revenue, general allocation funds, special allocation funds, and oil and gas profit sharing funds.

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Table 1. Growth Rate of GRDP, PAD, DAU, DAK, and Oil and Gas DBH in Aceh

Year	GRDP (Trillion IDR)	PAD Realization (billion IDR)	DAU Realization (billion IDR)	DAK Realization (billion IDR)	Oil and Gas DBH Realization (billion IDR)
2017	121.24	2,276.31	2060.26	1489,20	148.25
2018	126.82	2,359.39	2060.26	1,487.63	129,48
2019	132.07	2,698.91	2322,27	1,744.87	167,38
2020	131.58	2570.78	1961.33	1765,27	141.32
2021	135.25	2505.89	1945.98	1720.32	19.80

Source: Central Bureau of Statistics and <http://djpk.kemenkeu.go.id/>

Based on Table 1, it can be seen a comparison of GRDP with the realization of PAD, DAU, DAK, and Oil and Gas DBH of Aceh Province over the last 5 years. GRDP growth rate has increased from year to year. However, it decreased in 2020 by 0.37%. The realization of PAD in 2019 has increased by 14.40%, but in 2020 to 2021 it has decreased by 2.52%. The realization of DAU decreased in 2020 by -15.54%, but in the same year the realization of DAK increased by 0.99%. The realization of the Oil and Gas DBH in 2021 experienced a free fall of 85.99%.

Efforts by local governments to optimize their regional revenues for financing development activities will have an impact on regional economic growth. In the economic growth of a region, the realization of provincial government revenues and expenditures is by calculating the province's regional expenditure budget (PDRB) in each fiscal year. As for regional income, namely regional original income, balancing funds and other legal income.

The decline in the amount of PAD that occurred in 2020 and 2021 does not necessarily indicate inequality in economic growth in Aceh. This decrease in PAD could also be caused by the outbreak of the Covid-19 virus which began to appear in early 2020. In the era of fiscal decentralization, where the authority is held by the regional government to improve public services by transferring the revenue sector and also financing the regional budget. PAD is a very important source of regional income because it can encourage increased economic growth. This is in line with research by Erlinda Siagian in 2017, Anita Sri Wahyuni in 2020, and Rahmah AR and Basri Zein in 2016, which stated that PAD has a positive effect on economic growth.

In addition, the implementation of regional autonomy has an impact on increasing the transfer of balance funds from the central government to regional governments. As stated in Article 1 point 19 of Law No. 33 of 2004, regional funding balance funds sourced from the APBN consist of Revenue Sharing Funds (DBH), General Allocation Funds (DAU), and Special Allocation Funds (DAK).

General allocation funds (DAU) are transfers of funds from the central government to regional governments that are intended to close the fiscal gap and equalize fiscal capabilities between regions in order to help the independence of local governments carry out their functions and duties to serve the community. General allocation funds originating from the APBN are allocated with the aim of equalizing regional financial capacity to finance expenditure needs in the context of implementing decentralization.

General allocation funds should be managed selectively so that the funds benefit the public. Utilization of DAU is intended to be managed in a balanced manner as routine employee spending and infrastructure development to increase economic growth. Thus, the general allocation fund has a positive effect on economic growth. Even though there are inconsistencies in the movement of DAU and GRDP in 2021, Erlinda Siagian's research in 2017 shows that general allocation funds have a positive and significant effect on economic growth. Likewise in research by Widtri Wulandari in 2017, Anita Sri Wahyuni in 2020 and Rahmah AR and Basri Zein in 2016 which also prove the same helmet.



Meanwhile, in addition to the General Allocation Fund (DAU), the Special Allocation Fund (DAK) is also part of the balancing regional funding sourced from the APBN. DAK is part of regional revenue sources to improve services to the community in the implementation of regional autonomy. Special allocation funds (DAK) are intended to finance investment in the procurement and improvement of physical facilities and infrastructure for the long term. There are so many benefits from DAK that are managed optimally, especially during the pandemic, namely in the construction of clinics, health centers and hospitals. In its development, DAK has the same direction of movement as DAU.

The final component of the balancing fund sourced from APBN revenues is the profit sharing fund. Revenue-sharing funds are funds allocated to regions based on a certain percentage aiming to fund regional needs in implementing decentralization. Aceh Province's wealth is very abundant and must be utilized because it is a source of income for the State and Regions which will affect development and economic growth in Aceh Province. However, based on research by Wira Bintang Perdana in 2020 and Cut Nur Fajrina in 2021, oil and gas profit sharing funds have no effect on economic growth. The inconsistency in the direction of movement of oil and gas profit sharing funds is also shown by the data in table 1.

Based on this background, the research problem can be structured with the aim of answering how the response to Aceh's economic growth through the GRDP variable for the movement of the Regional Original Income variable, General Allocation Funds, Special Allocation Funds and Oil and Gas Revenue Sharing Funds.

2. LITERATURE REVIEW

Economic growth

Economic growth is the development of economic activity that occurs from time to time and causes real national income to grow. The rate of economic growth shows the percentage increase in real national income in a given year when compared to real national income in the previous year.

Economic growth can be determined by using the Gross Domestic Product (GDP) on a national scale and the Gross Regional Domestic Product (GRDP) as a measuring tool on a regional or regional scale. The purpose of GDP and GRDP is to summarize economic activity in a certain value for money during a certain period of time. Economic Growth has a dynamic nature, namely an economy develops or changes from time to time. Therefore, economic growth grows over a certain period of time, for example, years and even decades.

To measure economic growth, it can be calculated based on the following formula:

$$\text{Laju Pertumbuhan PDRB} = \frac{PDRB_t - PDRB_{t-1}}{PDRB_{t-1}} \times 100 \%$$

Information : GRDP_t : real GRDP in a certain year period
GRDP_{t-1} : real GRDP in the initial period
r : Growth rate
t : Period period

Locally-generated revenue

Regional original income is one of the components of revenue/regional income besides balancing funds and other legal income. Law No. 33 of 2004 concerning Financial Balance between the Central and Regional Governments it is explained that regional original income is income obtained by the regions collected based on regional regulations in accordance with statutory regulations with the aim of giving authority to regional governments to fund regional autonomy in accordance with its potential as a manifestation of decentralization.

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Local own-source revenue is a right for regional governments which is recognized as an addition to net worth consisting of regional taxes, regional levies, results of regionally owned companies and separated regional wealth management, and other legitimate regionally generated revenues. The regional revenue sector plays a very important role because this sector can be seen to what extent a region finances government activities in regional development.

Research conducted by Erlinda Siagian in 2017 in DI Yogyakarta Province which shows that Regional Original Income has a positive and significant effect on economic growth. This is in line with research conducted by Anita Sri Wahyuni in 2020 in the city of Surakarta which also shows that partially local own-source revenue has a significant effect on economic growth. This is also the case with research conducted by Rahmah AR and Basri Zein in 2016 which shows that regional own-source revenue, general allocation funds, and profit-sharing funds simultaneously affect economic growth in Aceh province during 2011-2014.

From the results of research that has been done, regional original income has a positive relationship with economic growth. If the original regional income increases, it will have an impact on increasing the level of economic growth so that regional and community welfare will be achieved. So the initial hypothesis can be arranged as follows:

H1 : Regional Original Income Has a Positive Influence on Economic Growth

General Allocation Fund

General allocation funds are funds originating from the APBN which are allocated with the aim of equalizing regional financial capacity to finance expenditure needs in the context of implementing decentralization. The General Allocation Fund (DAU) is a transfer of funds from the central government to regional governments which is intended to close the fiscal gap and equalize fiscal capacity between regions in order to help the independence of local governments carry out their functions and duties to serve the community.

Based on Government Regulation no. 104 of 2000 concerning Balancing Funds, the General Allocation Fund (DAU) that will be received by each region will be influenced by the basic allocation (the number of civil servants in the area), the number of residents in the area, the area of the area, the regional original income generated each year, and Profit Sharing Funds (DBH) which are obtained from the central government every year. General allocation funds (DAU) are transfers of funds from the central government to regional governments that are intended to close the fiscal gap and equalize fiscal capabilities between regions in order to help the independence of local governments carry out their functions and duties to serve the community.

Research conducted by Erlinda Siagian in 2017 in DI Yogyakarta Province which shows that general allocation funds have a positive and significant effect on economic growth. This is in line with research conducted by Rahmah AR and Basri Zein in 2016 and Widtri Wulandari in 2017 which also showed that DAU had a positive and significant effect on Aceh's economic growth in 2011-2015.

From the results of research that has been done, general allocation funds (DAU) to economic growth are interconnected. This shows that the greater the amount of general allocation funds has a positive effect or increases GRDP. So the hypothesis can be arranged as follows:

H2 : General Allocation Funds Have a Positive Influence on Economic Growth

Special Allocation Fund

In Law no. 33 of 2004 concerning Financial Balance between Central and Regional Finances states that: special allocation funds are funds sourced from the APBN allocated to certain regions with the aim of helping fund special activities which are regional affairs in accordance with national priorities. Special allocation funds (DAK) are funds provided to regions to meet special needs. There are three criteria for special needs as stipulated in the applicable laws and regulations,



namely; First, needs cannot be calculated using the general allocation fund formula. Second, needs are national commitments or priorities. Third, the need to finance reforestation and afforestation activities by producing regions.

Research conducted by Widtri Wulandari in 2017 showed that DAK in the current period had a negative and significant effect on economic growth in Aceh Province in the 2011-2015 period. From the results of previous studies, the following hypotheses can be developed:

H3 : Special Allocation Funds have a Negative Effect on Economic Growth

Oil and Gas Revenue Sharing Fund

Revenue-sharing funds as a component of balancing funds are funds originating from APBN revenues allocated to regions based on a certain percentage figure to fund regional needs in the context of implementing decentralization. Revenue sharing transferred by the central government to local governments consists of two types, namely tax revenue sharing and non-tax profit sharing (natural resources). Regions that have natural wealth and tax income will have regional revenues sourced from the results of the management of these sources by the central government to finance their regional expenditures.

Oil and natural gas are natural resources that support the national economy. Aceh is famous for its abundant natural resources but cannot be felt in terms of development in Aceh. Gas Arun, which operated in 1976, in its time has had a good impact on the national economy. However, Aceh as a producing area only gets less than 1%. This is one of the reasons for the conflict in Aceh. After the peace, the government issued Law Number 11 of 2006 concerning the Government of Aceh, namely that it can regulate various sectors. In article 181 (paragraph 1) letter b numbers 5 and 6 it is explained that from oil mining Aceh gets 15% and natural gas gets 30%. Besides Oil and Gas DBH,

In the implementation of regional autonomy and fiscal decentralization, oil and gas profit sharing funds are an instrument of balancing funds in the context of central and regional financial balances. They can use them together with other balancing funds to fund some of the authority delegated by the central government to regional governments (money follow functions). Meanwhile, the definition of Oil and Gas DBH according to Article 1 (paragraph 15) of Qanun Aceh No. 2 of 2008, namely additional funds for the production of oil and gas are funds originating from APBN revenues which are part of Aceh government revenues.

After the formation of Law no. 11 of 2006 concerning the Government of Aceh Article 160 states that the central government and the Aceh government carry out joint management of oil and gas natural resources located in the land and sea areas of Aceh. In carrying out this management, both the central and regional governments formed an implementing agency called the Aceh oil and gas management agency (BPMA).

Currently, BPMA manages six oil and gas fields or oil and gas blocks which are under the authority of Aceh. The Aceh oil and gas fields are as follows:

Table 2. List of Oil and Gas Fields in Aceh

No.	Profile	Operator	Location	Work Area Status
1.	Andaman III	Talisman Andaman BV	Pidie Jaya & Bireuen	Exploration
2.	South Block A	Renco Eagle Energy (REE)	East Aceh, Aceh Tamiang, and Langsa	Exploration
3.	Block A	PT Medco E&P Malacca	East Aceh	Exploitation

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4.	Block B	PHE NSB	Lhoksukon	Exploitation
5.	Lhoksemawe	Zaratex NV	Lhokseumawe	Exploitation
6.	Pasee	Triangle Pase INC	East Aceh	Exploitation

Source: Aceh Oil and Gas Management Agency (BPMA)

The presence of the BPMA as a special task force in Aceh is expected to have a positive impact, especially for the province of Aceh. If the six oil and gas areas in Aceh operate optimally, this will have a major impact on oil and gas DBH and TDBH in Aceh.

Research conducted by Wira Bintang Perdana in 2020 entitled *The Influence of Oil and Gas Revenue Sharing Funds, Minerba and Forestry on Economic Growth in North Kalimantan Province in 2014-2019* shows that partially, oil and gas revenue sharing funds do not affect economic growth. While the research conducted by Cut Nur Fajrina in 2021 entitled *"The Influence of Revenue Sharing Funds and Additional Oil and Gas Revenue Sharing Funds on the Aceh Economy After the Special Autonomy Fund Expired Viewed From an Islamic Economic Perspective"* shows that oil and gas DBH partially has a negative effect and does not significant to economic growth.

From the results of this study indicate that oil and gas revenue-sharing partially has a negative effect and is not significant. However, that does not mean that oil and gas DBH has no effect on GRDP. Oil and gas DBH originates from natural resources state revenue allocated to regions to fund regional needs in the framework of implementing decentralization. Thus the hypothesis proposed is:

H4 : Profit Sharing Fund Negative Influence on Economic Growth

3. IMPLEMENTATION METHOD

This research uses quantitative methods. The type in this research is a literature review that examines or examines the literature in the form of books of scientific articles and other relevant data that supports research. This research was carried out for 1 (one) month, starting from June 2022 to July 2022.

The unit of analysis in this study is Economic Growth which is published in the Central Bureau of Statistics (BPS), local revenue, general allocation funds, special allocation funds, and oil and gas profit sharing funds in the form of a yearly period. using time series data, taken from 2012 to 2021 which was published for 10 consecutive years due to the completeness of the available data from 2012-2021.

The data sources used in this study are secondary data sources obtained from the central statistics agency (BPS), the directorate general of financial balances (DJPK) and Aceh information and communication management officials (PPID).

The research model used in this study is the dependent variable attachment model, namely economic growth to the independent variables, namely regional original income, general allocation funds, special allocation funds and oil and gas profit sharing funds using VECM. The estimation model in this study is as follows:

$$Y_t = \alpha_1 I + \beta_1 X_{1t} + \beta_2 X_{2t} + \beta_3 X_{3t} + \beta_4 X_{4t} + \epsilon_t$$



Information :

- Y_t = Economic Growth time t
- αI = Constant
- $\beta_1, 2, 3, 4$ = independent variable coefficient
- X_{1t} = Regional Original Income at time t
- X_{2t} = General Allocation Fund at time t
- X_{3t} = Special Allocation Fund at time t
- X_{4t} = Oil and Gas Revenue Sharing Fund at time t
- e_t = Errors

4. RESULTS AND DISCUSSION

Data Stationarity Test

Stationary testing of the data in this study used the Augmented Dicky Fuller (ADF) test with a level (alpha) of 5%. If the value of the ADF test statistic is smaller than alpha 0.05 or if the probability value of the ADF test statistic is smaller than the Mackinnon critical then it can be said that the data is stationary. It should be noted that in this ADF test not all research data is stationary at the level level, the first difference or the second difference. Based on the results of the ADF test on all research variables, namely economic growth, local revenue, general allocation funds, special allocation funds, and oil and gas revenue sharing, the following results are obtained:

Table 3. Stationarity Test Results

Stationary Data	Statistics	Prob	Ket
Levels	1.27	0.90	Not Stationary
1 difference	0.40	0.66	Not Stationary
2 Differences	-9.90	0.00	stationary

Source: Primary Data Processed On Eviews 10, 2022

The table illustrates that the variables GRDP, PAD, DAU, DAK, and Oil and Gas DBH have a probability value of 0.00 at the second difference level. This shows that the estimation using the second difference is far better than using the estimation of the data level or first difference. So the VECM estimation data will use second difference data.

Optimum Lag Determination (Lag Length)

The determination of the lag length is enabled to produce Gaussian residuals or free from autocorrelation and heteroscedasticity. There are several ways to determine the lag length in VAR or VECM analysis by looking at the smallest value of Final Prediction Error (FPE), Akaike Information Criterion (AIC), Schwarz Criterion (SC) and Hannan Quinn (HQ).

Table 4. Optimum Lag Test Results

lag	LogL	LR	FPE	AIC	SC	HQ
0	620.8561	NA*	3.58e-22*	-35.19177*	-34.96958*	-35.11507*
1	625.0238	6.906608	1.20e-21	-34.00136	-32.66821	-33.54116
2	626.6097	2.174856	5.01e-21	-32.66341	-30.21929	-31.81970
3	631.8296	5.667312	2.00e-20	-31.53312	-27.97804	-30.30590

Source: Primary Data Processed On Eviews 10, 2022

Note: The * mark indicates the optimum lag

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Based on the results of this study, the researcher uses lag 1 because lag 0 cannot be processed.

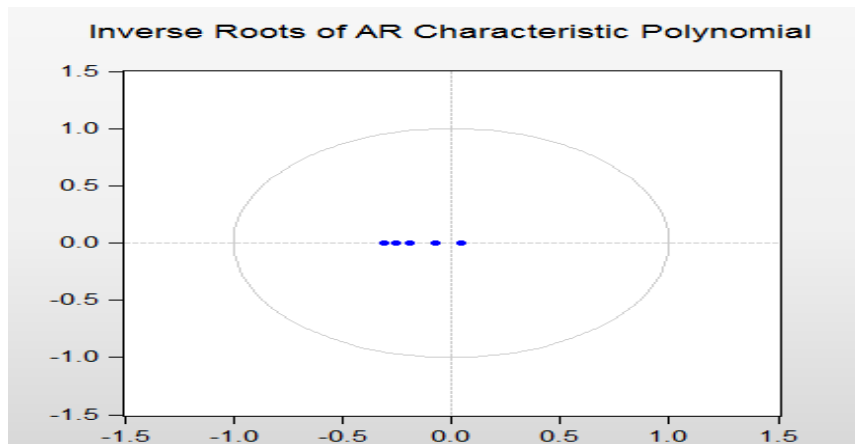
VAR Stability Test

The VAR/VECM stability test is carried out by calculating the roots of the polynomial function. If all the roots of the polynomial function are in the unit circle or if the modulus value < 1 then the VAR model is considered stable. The stable condition of the model also shows that the resulting Impulse Response Function (IRF) and Forecast Error Variance Decomposition (FEVD) are considered valid. If the results show stable, then the next VECM pre-estimation test can be carried out.

Table 5. VAR Stability Test Results

roots	Modulus
-0.304389	0.304389
-0.256303	0.256303
-0.187467	0.187467
-0.075781	0.075781
0.045160	0.045160

Source: Primary Data Processed On Eviews 12, 2022



Source: Primary Data Processed On Eviews 10, 2022

Figure 1. Circle Unit Stability Test Results

It can be concluded that the VAR/VECM model is considered stable because the (absolute) modulus value is < 1 which lies in the range 0.045160 to 0.304389 and all the roots of the polynomial function are in the unit circle.

Cointegration Test

The cointegration test is carried out to determine whether the non-stationary variables are cointegrated or not.



Table 6. Cointegrity Test Results

Hypothesized No. of CE(S)	Eigenvalue	trace Statistics	0.05 Critical Values	Prob.**
None *	0.480099	84.16650	60.06141	0.0001
At most 1 *	0.439867	60.61831	40.17493	0.0001
At most 2 *	0.400298	39.75339	24.27596	0.0003
At most 3 *	0.303874	21.34580	12.32090	0.00012
At most 4 *	0.206034	8.305735	4.129906	0.0047

Source: Primary Data Processed On Eviews 10, 2022

Note: The * sign indicates trace statistics > critical value (0.05)

Based on the results of the study, it shows that the value of the trace statistic is greater than the critical value. So it can be concluded that there is a cointegrity equation in this study, so that the next stage of analysis can use the VECM (Vector Error Correction Model) analysis.

Granger Causality Test

The Granger causality test is used to identify the mutual relationship between two variables in time series data or time series data so that causality and the direction of causality can be identified.

Table 7. Granger Causality Test Results

Null Hypothesis:	Obs	F-Statistics	Prob.
X2 does not Granger Cause X1	39	1.98027	0.1679
X1 does not Granger Cause X2		0.00012	0.9913
X3 does not Granger Cause X1	39	1.05753	0.3106
X1 does not Granger Cause X3		0.00139	0.9704
X4 does not Granger Cause X1	39	0.44828	0.5074
X1 does not Granger Cause X4		0.22552	0.6377
Y does not Granger Cause X1	39	0.44828	0.5074
X1 does not Granger Cause Y		0.22552	0.6377
X3 does not Granger Cause X2	39	2.64749	0.1124
X2 does not Granger Cause X3		1.74483	0.1949
X4 does not Granger Cause X2	39	3.22126	0.0811
X2 does not Granger Cause X4		3.33863	0.0760
Y does not Granger Cause X2	39	0.03262	0.8577
X2 does not Granger Cause Y		0.48179	0.4921
X4 does not Granger Cause X3	39	4.30458	0.0452
X3 does not Granger Cause X4		2.60706	0.1151
Y does not Granger Cause X3	39	1.05250	0.3118
X3 does not Granger Cause Y		6.90227	0.0126
Y does not Granger Cause X4	39	0.06878	0.7946
X4 does not Granger Cause Y		13.8663	0.0007

Source: Primary Data Processed On Eviews 10, 2022

It can be concluded that there is a one-way causality relationship between the dependent and independent variables, namely the Oil and Gas DBH significantly affects DAK. The same

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thing also happened in the economic growth variable. Then the DAK variable also significantly influences economic growth.

Vector Error Correction Model (VECM) Estimation Test

The results of the VECM estimation test are said to have a good or significant effect for the short and long term when the t-count value is greater than the t-table value which has been set at 5%.

Table 8. VECM Estimation Test Results

Cointegrating Eq:	CointEq1				
Y(-1)	1.000000				
X1(-1)	-0.311475 (0.21896) [-1.42251]				
X2(-1)	-0.729408 (0.27362) [-2.66580]				
X3(-1)	0.019127 (0.04342) [0.44051]				
X4(-1)	-0.126582 (0.04834) [-2.61857]				
Error Correction:	D(Y)	D(X1)	D(X2)	D(X3)	D(X4)
CointEq1	0.017165 (0.00761) [2.25471]	0.058102 (0.02947) [1.97154]	0.206666 (0.08674) [2.38272]	0.963407 (0.29311) [3.28684]	-0.012141 (0.23347) [-0.05200]
D(Y(-1))	0.609575 (0.13025) [4.68007]	-0.197647 (0.50420) [-0.39200]	-0.327229 (1.48393) [-0.22052]	-2.088034 (5.01472) [-0.41638]	2.446982 (3.99427) [0.61262]
D(X1(-1))	-0.098555 (0.04843) [-2.03501]	0.583480 (0.18747) [3.11235]	-1.109629 (0.55176) [-2.01108]	-5.896177 (1.86459) [-3.16218]	0.011275 (1.48517) [0.00759]
D(X2(-1))	0.042250 (0.03797) [1.11261]	0.010961 (0.14700) [0.07457]	0.972225 (0.43264) [2.24721]	2.784328 (1.46204) [1.90442]	-0.267552 (1.16453) [-0.22975]
D(X3(-1))	-0.006989 (0.00916) [-0.76279]	-0.027781 (0.03547) [-0.78333]	-0.129748 (0.10438) [-1.24302]	-0.192086 (0.35274) [-0.54455]	-0.070173 (0.28096) [-0.24976]
D(X4(-1))	0.007565 (0.00746) [1.01459]	0.049801 (0.02886) [1.72548]	0.160229 (0.08495) [1.88625]	0.772878 (0.28706) [2.69237]	1.054144 (0.22865) [4.61034]



Source: Primary Data Processed On Eviews 10, 2022

563 Based on the results of the VECM model, it is known that the table at the top represents the long-term relationship between variables while the bottom table is the short-term relationship between these variables. It is known that if the t statistic value $>$ t table, it will have a significant effect. For the t table value in this study is 2.022691.

From the results of the Vector Error Correction Model (VECM), it can be interpreted as follows.

1. In the short term, changes in X1 in the past quarter significantly affect Y at this time, with a statistical value of t [-2.03501] $>$ critical value of t [2.022691]. If X1 during the past quarter increased by 1 rupiah, it would cause a change in X1 at this time to decrease by -0.098555 rupiah.
2. In the short term, changes in X1 in the past quarter significantly affect X1 at this time, with a statistical value of t [3.11235] $>$ critical value of t [2.022691]. If X1 at one quarter ago increased by 1 rupiah, it would cause a change in X1 at this time to decrease by 0.583480 rupiah.
3. In the short term, changes in X1 in the past quarter significantly affect X3 at this time, with a statistical value of t [-3.16218] $>$ critical value of t [2.022691]. If X1 during the past quarter increased by 1 rupiah, it would cause a change in X3 at this time to decrease by -5.896177 rupiah.
4. In the short term, changes in X2 in the past quarter significantly affect X2 at this time, with a statistical value of t [2.24721] $>$ critical value of t [2.022691]. If X2 at one quarter ago increased by 1 rupiah, it would cause a change in X2 at this time to decrease by 0.972225 rupiah.
5. In the short term, changes in X4 in the past quarter significantly affect X3 at this time, with a statistical value of t [2.69237] $>$ critical value of t [2.022691]. If X4 at one quarter ago increased by 1 rupiah, it would cause a change in X3 at this time to decrease by 0.772878 rupiah.
6. In the short term, changes in X4 in the past quarter significantly affect X4 at this time, with a statistical value of t [4.61034] $>$ critical value of t [2.022691]. If X4 at one quarter ago increased by 1 rupiah, it would cause a change in X4 at this time to decrease by 1.054144 rupiah.
7. In the short term, changes in Y in the past quarter significantly affect Y at this time, with a statistical value of t [4.68007] $>$ critical value of t [2.022691]. If Y during the past quarter increased by 1 rupiah, it would cause a change in Y at this time to decrease by 0.609575 rupiah.
8. In the long term, X2 has a significant effect on Y, with a statistical value of t [-2.66580] $>$ critical value of t [2.022691].
9. In the long term, X4 has a significant effect on Y, with a statistical value of t [-2.61857] $>$ critical value of t [2.022691].

Based on the results of the VECM model, some of the relationships that occur are negative and significant, which means that short-term imbalances will always be corrected towards long-term balance based on previous information that is accommodated in these variables.

Impulse Response Function (IRF) Test

Impulse Response Function(IRF) is a method for determining the response of an endogenous variable to a certain shock.

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Table 9. Results of Impulse Response Function (IRF) Economic Growth (Y)

Response of Y: period	X1	X2	X3	X4	Y
1	0.000505	-0.000388	9.65E-05	-0.000231	0.000880
2	0.000629	-0.000565	0.000164	-0.000273	0.001432
3	0.000469	-0.000707	0.000186	-0.000334	0.001821
4	0.000135	-0.000854	0.000124	-0.000475	0.002105
5	-0.000302	-0.001014	-4.44E-05	-0.000707	0.002310
6	-0.000804	-0.001189	-0.000328	-0.001031	0.002449
7	-0.001354	-0.001379	-0.000726	-0.001444	0.002532
8	-0.001945	-0.001585	-0.001235	-0.001940	0.002566
9	-0.002573	-0.001806	-0.001852	-0.002517	0.002557
10	-0.003240	-0.002045	-0.002572	-0.003173	0.002508

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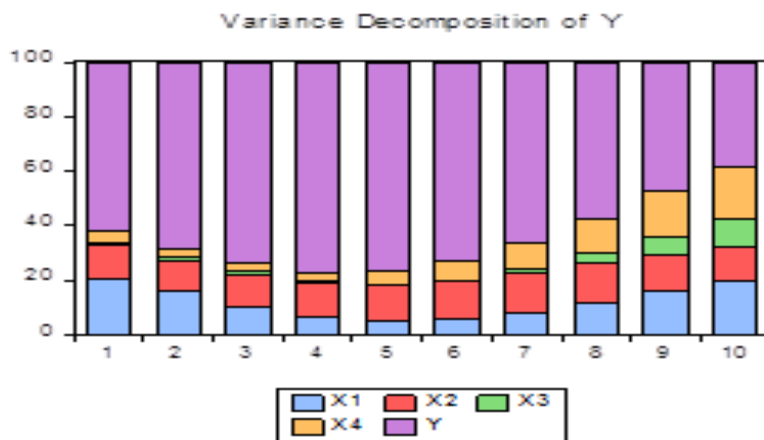
Source: Primary Data Processed On Eviews 10, 2022

In this study, X1 is the regional original income (PAD), X2 is the general allocation fund (DAU), X3 is the special allocation fund (DAK), X4 is the oil and gas revenue sharing fund (DBH Migas), and Y is economic growth.

Based on table 4.7, it shows that the response of economic growth variables to shocks from economic growth itself, PAD, DAU, DAK and DBH Migas. In the first period to the fourth period, there was an economic growth shock that had a positive effect on PAD and DAK. Meanwhile, the DAU shock caused a negative response in the first to tenth periods to economic growth with an average of -0.00115 and the oil and gas DBH shock caused a negative response in the first to tenth periods to economic growth with an average of -0.00121. Shock from economic growth causes a response to economic growth that is always positive with an average of 0.002116.

Forecast Error Variance Decomposition (FEVD) Test

Forecast Error Variance Decomposition (FEVD) is a method to see how changes in a variable indicated by changes in error variance are affected by other variables.



Source: Primary Data Processed On Eviews 10, 2022

Figure 2. Forecast Error Variance Decomposition (FEVD) Results
Economic growth



Based on this research, it explains that the economic growth shock in period one was influenced by the economic growth itself by 62.3%. Meanwhile, the variables PAD, DAU, and DBH Migas were 20.5%, 12.1%, 0.7%, 4.3%.

Based on the end of the observation period, the variable that has the most dominant influence on economic growth is the variable general allocation fund of 12.9%. In the second position there is a regional original income variable in influencing economic growth until the end of the observation period of 11.9%. Furthermore, in the third position in influencing economic growth, namely the oil and gas profit sharing fund variable is 8.4% and for the special allocation fund variable it has the least influence on economic growth until the end of the observation period, only 2.6%.

1. The Influence of Regional Original Income on Economic Growth in the province of Aceh

The estimation results of the VECM model show that the variable local original income in the short term has a negative and significant effect on economic growth with a statistical value of $t [-2.03501] > \text{critical value } t [2.022691]$, so it can be concluded that if the original regional income increases then it affects decline in economic growth, and vice versa.

In theory, it is said that basically growth in regional own-source income in a sustainable manner will have an impact on increasing regional economic growth, where if regional original income increases, economic growth will increase. However, the conclusion is that local revenue in Aceh province has a negative and significant effect on economic growth. This is not in accordance with the research by Erlinda Siagian in 2017, Widtri Wulandari in 2017, Asrinanda in 2014 and Rahmah AR and Basri Zein in 2016 which states that there is a positive and significant effect on the variable regional original income on economic growth.

2. The Effect of General Allocation Funds on Economic Growth in the province of Aceh

The estimation results of the VECM model show that the general allocation fund variable in the short term has a negative and significant effect on economic growth with a statistical value of $t [-2.66580] > \text{critical value } t [2.022691]$, so it can be concluded that if the general allocation fund increases, it will have an effect to a decline in economic growth and vice versa.

In theory it is said that the general allocation fund is one of the transfer funds used as a development fund that aims to equalize inter-regional financial capabilities. It can be said that general allocation funds have contributed to economic growth.

From the results of the interpretation in this study, it was concluded that the general allocation fund has a negative and insignificant effect on economic growth. This is not in accordance with Erlinda Siagian in 2017, Widtri Wulandari in 2017, Anita Sri Wahyuni in 2020 and Rahmah AR and Basri Zein in 2016 which stated that general allocation funds have a positive and significant effect on economic growth.

3. The Effect of Special Allocation Funds on Economic Growth in Aceh Province

The results of the Granger causality test show that there is a one-way causality relationship between special allocation funds and economic growth in the period 2012 to 2021. This is in accordance with the theory if there is an increase in economic growth it indicates that there has been an increase in special allocation funds. This happens because the special allocation funds are

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used to finance the needs for facilities and infrastructure in public services whose purpose is to encourage economic growth.

The estimation results of the VECM model show that the special allocation fund variable in the long term has a positive and insignificant effect on economic growth with a statistical value t [0.44051] < critical value t [2.022691], so it can be concluded that if the special allocation fund increases, it will effect on the increase in economic growth.

The results of this interpretation are in accordance with research conducted by Erlinda Siagian in 2017 which stated that special allocation funds had a positive and insignificant effect on economic growth.

4. The Influence of Oil and Gas Profit Sharing Funds on Economic Growth in Aceh province

The results of the Granger causality test show that there is a one-way causality relationship between oil and gas revenue-sharing funds and economic growth in the period 2012 to 2021. This is in accordance with the theory that if oil and gas revenue-sharing funds increase, it will be able to increase economic growth through the realization of the Oil and Gas DBH funds .

The estimation results of the VECM model show that the long-term oil and gas revenue-sharing variable has a negative and significant effect on economic growth with a statistical value of t [-2.61857] > critical value t [2.022691], so it can be concluded that if oil and gas revenue-sharing increases it will affect the decline in provincial economic growth.

However, in previous research by Wira Bintang Perdana in 2017, it stated that oil and gas profit sharing funds did not have a significant effect on economic growth. This is not in accordance with the results in this study.

5. CONCLUSION

Based on the results of the research and discussion, several conclusions can be drawn as follows.

1. Regional original income is negative and significant for the economic growth of Aceh province for the 2012-2021 period. This is evidenced by the estimation results of the VECM model in the short term with a statistical value of t [-2.03501] > critical value of t [2.022691], Thus H_{a1} is accepted where PAD has a significant effect on economic growth.
2. The general allocation fund has a negative and significant effect on the economic growth of Aceh province 2012-2021. This is evidenced by the estimation results of the VECM model showing that the statistical value of t [-2.66580] > the critical value of t [2.022691], thus H_{a2} is accepted where DAU has a significant effect on economic growth.
3. The special allocation fund has no significant effect on the economic growth of the Aceh province for 2012-2021. The estimation results of the VECM model show that the statistical value of t [0.44051] < the critical value of t [2.022691], thus H_{03} is accepted where DAK does not have a significant effect on economic growth.
4. Oil and gas profit-sharing funds have a negative and significant impact on the economic growth of Aceh province 2012-2021. The estimation results of the VECM model show that the statistical value of t [-2.61857] > the critical value of t [2.022691], thus H_{a4} is accepted where Oil and Gas DBH has a significant effect on economic growth.



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