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Special Autonomy Funds and Regional Economic Convergence in Indonesia: Panel Evidence from Special Autonomy Areas[1]

Abstract. Persistent regional disparities and limited developmental progress in Indonesia's special autonomy regions, despite substantial fiscal transfers, raise important questions about the effectiveness of Special Autonomy Funds as an instrument for accelerating regional economic convergence and growth. This study examines the role of these funds in reducing regional disparities and stimulating economic growth in special autonomy regions. Although designed as an affirmative fiscal instrument, their capacity to achieve long-term macroeconomic goals remains in question. Prior research has largely focused on development indicators such as poverty reduction and infrastructure improvement, with few studies explicitly examining whether Special Autonomy Funds contribute to faster regional economic convergence. This study addresses that gap by evaluating both the convergence process and the direct impact of Special Autonomy Funds on growth. Drawing on unbalanced panel data from 496 cities and regencies in Indonesia, including 59 special autonomy areas, over the period 2007–2020, the study employs two econometric models: the Hausman–Taylor Estimator for convergence analysis and the Fixed Effects Model for growth estimation. Both models incorporate fiscal transfer variables and control for sectoral economic structure. The results indicate that while interregional economic convergence exists at the national level, convergence in special autonomy regions proceeds more slowly than in other provinces. Moreover, the positive effects of Special Autonomy Funds appear limited to the short term and do not generate a sustained growth stimulus, suggesting that fund utilization has yet to translate into productive capacity. The study concludes that long-term effectiveness requires both improved fund management and a reorientation of allocations toward strategic infrastructure, education, and health. Future research should examine micro-level impacts and governance mechanisms to further strengthen the developmental impact of these funds.

Keywords: special autonomy fund, regional economic convergence, fiscal decentralization, economic growth, special regions, regional disparities

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ИССЛЕДОВАТЕЛЬСКАЯ СТАТЬЯ

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Фонды специальной автономии и региональная экономическая конвергенция в Индонезии: панельные данные по регионам со специальным автономным статусом

Аннотация. В Индонезии регионы со специальным автономным статусом получают значительные бюджетные трансферты, при этом региональное неравенство сохраняется, а прогресс в развитии остаётся ограниченным, что свидетельствует о недостаточной эффективности фондов специальной автономии как инструмента экономической конвергенции. В предыдущих исследованиях в основном оценивались такие показатели развития, как сокращение бедности или улучшение инфраструктуры, однако лишь в немногих напрямую рассматривался вопрос о том, способствуют ли фонды специальной автономии ускорению региональной экономической конвергенции. Данное исследование восполняет этот пробел, оценивая сам процесс конвергенции и непосредственное влияние фондов специальной автономии на экономический рост. На основе несбалансированных панельных данных по 496 городам и регентствам Индонезии, включая 59 территорий со специальным автономным статусом, за период 2007–2020 гг. в работе применяются такие эконометрические модели, как метод Хаусмана–Тейлора для анализа конвергенции и модель с фиксированными эффектами для оценки роста. Модели включают переменные фискальных трансфертов и контролируют отраслевую структуру экономики. Результаты показывают, что, несмотря на присутствие межрегиональной экономической конвергенции на национальном уровне, в регионах со специальным автономным статусом она протекает медленнее, чем в остальных провинциях. Кроме того, положительный эффект фондов специальной автономии ограничен краткосрочным периодом и не обеспечивает устойчивого стимула для роста. Полученные результаты свидетельствуют о том, что использование средств фондов пока не трансформировалось в производственный потенциал. Делается вывод о том, что долгосрочная эффективность фондов может быть обеспечена лишь при условии совершенствования механизмов их администрирования и концентрации ассигнований на приоритетных направлениях — инфраструктуре, образовании и здравоохранении. В качестве перспектив дальнейших исследований обозначены микроуровневый анализ и изучение институциональных механизмов управления.

Ключевые слова: фонд специальной автономии, региональная экономическая конвергенция, фискальная децентрализация, экономический рост, специальные регионы, региональные диспропорции

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Introduction

Inclusive and sustainable economic development is a key pillar in achieving societal welfare and interregional equity (van Niekerk, 2020). In recent years, issues of interregional development have received increasing global attention (Bathelt et al., 2024; Ezcurra & Del Villar, 2021; Peck et al., 2023). Despite this attention, many countries, both developed and developing, continue to face challenges in promoting inclusive growth, particularly in remote or underdeveloped regions and in areas with distinct historical and socio-cultural contexts (Hopkins et al., 2024). Existing research suggests that targeted fiscal transfers can serve as an important instrument for reducing structural regional disparities, as illustrated by mechanisms such as the structural funds of the European Union (Bostan et al., 2022; Crucitti et al., 2024). However, the effectiveness of such fiscal interventions depends critically on policy design, local governance capacity, and the alignment between fiscal instruments and regional characteristics (Spilioti & Anastasiou, 2024).

Against this background, Indonesia presents a particularly relevant case. Comprising more than 17,000 islands and marked by significant ethnic and cultural diversity, Indonesia faces persistent challenges in achieving balanced regional development (Aginta et al., 2023). There are long-standing disparities between western and eastern regions, as well as between urban and rural areas, which have persisted since the reform era. These disparities are especially evident between relatively developed regions such as Java and Sumatra, which are dominated by capital-intensive industries, and more remote areas with limited interregional connectivity, such as Papua (Erlando et al., 2020; Hill, 1991). To address

these imbalances, the regional autonomy framework introduced in 2001 has included various fiscal transfer schemes, notably Special Autonomy Funds allocated to regions such as Aceh, Papua, and West Papua (Barter & Wangge, 2021). These transfers are designed not only to accelerate economic development but also to respond to historical grievances and broader political and social considerations.

Within this national context, Papua and Aceh represent two prominent cases of special autonomy implementation, each shaped by distinct historical trajectories. The development path of Papua has evolved over more than six decades, closely linked to shifts in national policy and political leadership. Under President Soekarno (1945–1967), policy focused on integrating Irian Jaya (now Papua) into Indonesia. This was followed by the Soeharto era (1967–1998), which emphasised security and political stability. The Reformasi period marked a significant turning point. Under President B. J. Habibie (1998–1999), policy shifted toward political dialogue and regional expansion, while President Abdurrahman Wahid (1999–2001) advanced greater recognition of local identities and institutional reform. Special autonomy arrangements were then formally introduced under President Megawati Soekarnoputri (2001–2004) and expanded through development acceleration policies during President Susilo Bambang Yudhoyono's administration (2004–2014). More recently, under President Joko Widodo (2014–2024), these policies have been further strengthened through Special Autonomy Phase II, provincial expansion, and efforts to improve connectivity and public service delivery in Papua (Hafiszrianda & Iek, 2025).

Similarly, Aceh has followed a distinct but equally complex development trajectory shaped by prolonged internal conflict beginning in the 1970s, which significantly constrained socio-economic progress. Following decades of conflict, the 2005 Helsinki Agreement marked a turning point by granting Aceh Special Autonomy status, subsequently formalised under Law No. 11 of 2006. This framework provides extensive regional authority and special fiscal allocations from the central government, with the dual objectives of accelerating development and strengthening long-term regional stability (Heger & Neumayer, 2022).

Despite the implementation of development acceleration policies, the socio-economic profile of special autonomy regions has shown limited structural change. Presidential Regulation No. 63 of 2020 continues to classify these areas as underdeveloped regions. In particular, across the special autonomy regions of Aceh, Papua, and West Papua, 31 out of 65 districts/cities (47.7 %) are still designated as underdeveloped.

Existing research on Indonesia's Special Autonomy Funds has primarily focused on evaluating their effectiveness in improving regional development indicators, including economic growth, human development, poverty reduction, and infrastructure quality (Hafiszrianda & Iek, 2025; Safwadi, 2020; Wijatmoko et al., 2023). However, studies explicitly examining whether these funds contribute to the broader macroeconomic objective of reducing interregional disparities through economic convergence remain limited. This study addresses this gap by integrating a regional economic convergence framework with an analysis of the direct effects of Special Autonomy Fund allocations. In doing so, it goes beyond assessing developmental outcomes to evaluate whether these fiscal transfers contribute to the acceleration of regional convergence.

Research Background

Intergovernmental Transfers

Indonesia is a unitary state with a decentralized governance structure, in which regional governments have substantial authority in delivering public services and promoting regional development. Since the enactment of the Regional Autonomy Law in 2001, fiscal decentralization has become a central pillar of Indonesia's public financial system, aimed at reducing interregional disparities and strengthening regional capacity to respond to local needs (Wiryawan & Otchia, 2022).

One of the key instruments of fiscal decentralization is intergovernmental transfers, which channel funds from the central government to regional governments to finance public sector responsibilities. These transfers consist of several main components (Saptono & Mahmud, 2023):

1. Unconditional Transfer (*Dana Alokasi Umum*), a grant designed to equalize fiscal capacity across regions by addressing gaps between fiscal needs and fiscal resources.

2. Conditional Transfer (*Dana Alokasi Khusus*), which is earmarked for national priority programs implemented by regional governments, particularly in sectors such as infrastructure, education, and health.

3. Revenue Sharing Transfer (*Dana Bagi Hasil*), which allocates a proportion of central government revenues derived from natural resources, taxes, and non-tax revenues back to producing regions.

Beyond its financing role, the intergovernmental transfer system also ensures that regional governments can deliver public services in line with national standards, regardless of their own fiscal capacity (Aritenang, 2020). Through these transfers, the central government can guide regional development toward national priorities while still allowing flexibility for local adaptation (Yang et al., 2024). Fiscal transfers therefore serve not only to support development but also to reduce both vertical disparities (between central and regional governments)

and horizontal disparities (across regions) in fiscal capacity (Digdowiseiso et al., 2022).

In many regions, particularly remote and underdeveloped areas, intergovernmental transfers constitute the main source of public revenue, as local own-source revenues remain limited (Desdiani et al., 2022). Without these transfers, many regions would struggle to finance even basic public services. As such, fiscal transfers play a critical role in shaping fiscal relations between central and regional governments and significantly influence regional capacity to promote economic development (Arlashkin et al., 2025).

Special Transfer for Regions with Special Statuses

Apart from the general intergovernmental transfer system in Indonesia, certain regions with special administrative statuses receive dedicated fiscal transfer schemes as stipulated by national law (Wijatmoko et al., 2023). Currently, five provinces hold special status: the Special Capital Region of Jakarta, the Special Region of Yogyakarta, and the Special Autonomy Regions of Aceh and Papua. In the case of Papua, the administrative structure has recently changed: while it previously consisted of Papua and West Papua Provinces, it was expanded in 2022 into four provinces—South Papua, Central Papua, Papua Mountains, and Southwest Papua. These special statuses are granted based on distinct regional characteristics, including strategic functions, historical background, cultural values, and unique socio-economic conditions.

Each special-status region receives specific forms of fiscal transfers designed in line with its respective policy objectives. According to the Asian Development Bank, the Special Capital Region of Jakarta and the Special Region of Yogyakarta receive Privilege Funds (Dana Keistimewaan), which are allocated to support their unique institutional functions.[1] In Jakarta, these funds are directed toward its role as the national capital and centre of government.[2] In Yogyakarta, they are used to preserve cultural heritage, strengthen governance rooted in historical and customary institutions, and support other legally defined special functions[3].

On the other hand, Aceh and the Papua Special Autonomy Regions receive Special Autonomy Funds (Dana Otonomi Khusus), which explicitly have the macro goal to accelerate regional development, decrease interregional disparity, as well as increase societal welfare (Prabowo et al., 2021). These funds are intended to address region-specific development challenges, including infrastructure deficits, economic inequality, and limited human resource capacity (Hafiszrianda & Iek, 2025; Maksum & Sahide, 2019; Wijatmoko et al., 2023).

Although all special-status regions receive additional fiscal transfers beyond the general allocation system, the nomenclature, policy orientation, and objectives of these transfers differ. Privilege Funds in Jakarta and Yogyakarta are primarily designed to support historical, cultural, and administrative functions, whereas Special Autonomy Funds in Aceh and Papua are oriented toward accelerating socio-economic development. Accordingly, analyses of fiscal transfer effectiveness in promoting development are most directly relevant to the Special Autonomy regions of Aceh and Papua.

Method

Theoretical Framework and Model Specification

This research uses the Special Autonomy Funds as its main predictor. This choice is consistent with the primary objective of Special Autonomy Funds, namely to accelerate regional development and enable lagging regions to converge with other regions in Indonesia. In addition, the model includes other components of regional revenue, including unconditional grants, conditional grants, revenue-sharing transfers, and local own-source revenue, to provide a more comprehensive representation of Indonesia's intergovernmental fiscal system. Accordingly, the empirical framework specified in Formula (1) is presented as follows.

$$GDP = f(SAF, UT, CT, RST, LOS, Control) \quad (1)$$

In this specification, *GDP* denotes the GDP growth rate; *SAF* represents Special Autonomy Funds per capita; *UT* denotes unconditional transfers per capita; *CT* refers to conditional transfers per capita; *RST* represents revenue-sharing transfers per capita; and *LOS* indicates local own-source revenue per capita. The control variables include the sectoral shares of agriculture, mining, and manufacturing in GDP. All fiscal variables are expressed in per capita terms to account for differences in population size across regions and to avoid scale-related bias. After substituting the control variables, the simplified form of the model is presented in Formula (2):

$$\begin{aligned} GDP_{it} = {} & \alpha + \beta_1 SAF_{it} + \beta_2 UT_{it} + \beta_3 CT_{it} + \beta_4 RST_{it} + \\ & + \beta_5 LOS_{it} + \beta_6 AgriShare_{it} + \beta_7 MiningShare_{it} + \\ & + \beta_8 ManuShare_{it} + e_{it} \end{aligned} \quad (2)$$

Here, *AgriShare* represents the Agriculture Share of GDP; *MiningShare* represents the Mining Share of

[1] Asian Development Bank. (2018). Public Financial Management Systems — Indonesia: Key Elements from a Financial Management Perspective. URL: https://doi.org/10.22617/TCS189338-2 (Date of access: 28.07.2025).

[2] Asian Development Bank. (2018). Public Financial Management Systems — Indonesia. Manila, Philippines, 92. URL: https://doi.org/10.22617/TCS189338-2 (Date of access: 28.07.2025).

[3] Asian Development Bank. (2018). Public Financial Management Systems — Indonesia. Manila, Philippines, 92. URL: https://doi.org/10.22617/TCS189338-2 (Date of access: 28.07.2025).

GDP; and *ManuShare* represents the Manufacturing Share of GDP. By considering natural logarithms (ln), Formula (2) is changed into the square parameter of the linear logarithm to obtain a meaningful interpretation (Bekhet & Othman, 2018) in Formula (3):

$$\begin{aligned} ln(GDP_{it}) &= \alpha + \beta_1 \ln(SAF_{it}) + \beta_2 \ln(UT_{it}) + \beta_3 \ln(CT_{it}) + \\ &+ \beta_4 \ln(RST_{it}) + \beta_5 \ln(LOS_{it}) + \beta_6 AgriShare_{it} + \\ &+ \beta_7 MiningShare_{it} + \beta_8 ManuShare_{it} + e_{\text{it}} \end{aligned} \quad (3)$$

To estimate the economic convergence in Indonesia, this research also uses the second model in Formula (4):

$$\begin{aligned} \ln(GDP_{it}) &= \alpha + \beta_1 \ln(GDP_{i,t-1}) + \\ &+ \beta_2 (\ln(GDP_{i,t-1}) \cdot SpecialAutonomy_i) + \\ &+ \beta_3 SpecialAutonomy_i + \beta_4 \ln(UT_{it}) + \beta_5 \ln(CT_{it}) + \\ &+ \beta_6 \ln(RST_{it}) + \beta_7 \ln(LOS_{it}) + \beta_8 JavaRegion_i + \\ &+ \beta_9 AgriShare_{it} + \beta_{10} MiningShare_{it} + \\ &+ \beta_{10} ManuShare_{it} + e_{it} \end{aligned} \quad (4)$$

In this case, the *SpecialAutonomy* represents a dummy variable with a value of one for cities /regencies in a special autonomy region and 0 for the rest. Then, *JavaRegion* represents the variable with a value of 1 for cities / regencies located in Java Island, α is the intercept, *e* is the error term, and parameters $\beta_1 - \beta_{10}$ denote the estimated coefficients, i and t denote cities / regencies and year. The first model (Formula 3) is estimated using data from all cities and regencies in Indonesia, while the second model (Formula 4) is estimated using data from cities and regencies located in the special autonomy regions. This approach allows for a more detailed examination of the role and impact of Special Autonomy Funds on economic growth. A dummy variable for Java is included, reflecting the concentration of economic activity on Java Island, which accounts for approximately 59 % of national GDP and 75 % of industrial areas (Malisan et al., 2023). The inclusion of agriculture, mining, and manufacturing shares as control variables is intended to account for differences in regional economic structure, thereby improving the accuracy of the estimated relationships. This is important because regional economic structure may influence both the explanatory and dependent variables.

Research Hypotheses

The Solow–Swan growth model explains that areas with a low level of capital accumulation will experience faster economic growth when obtaining additional capital or public investment (Giombini et al., 2023), leading to the β-convergence process. Increased government capital expenditure, including investment in infrastructure, education, and basic services, can reduce economic costs, expand access to productive activities, and accelerate convergence with more advanced regions (Marmad & Ritahi, 2025). This theoretical framework underpins the assumption that fiscal interventions that expand public capital can accelerate interregional economic convergence.

Prior studies show that targeted fiscal transfers can have positive effects on the growth of underdeveloped regions and contribute to the reduction of interregional disparities (Fan et al., 2020; Ong et al., 2023). Empirical evidence from Aceh and Papua also indicates that Special Autonomy Funds are associated with higher economic growth over certain periods (Sanggrangbano et al., 2024; Wijayanti et al., 2021). Overall, these empirical and theoretical findings suggest that Special Autonomy Funds have the potential to accelerate the process of economic convergence.

From the perspective of the Keynesian theory, increased regional government expenditure through Special Autonomy Funds can stimulate short-term economic growth via the fiscal multiplier effect, primarily through higher aggregate demand (Arestis et al., 2021). In contrast, endogenous growth theory and Barro's public capital model emphasise that public investment in infrastructure, services, and human capital enhances productivity and the long-term capacity of the regional economy, thereby generating more sustainable growth (Chowdhury & Ghose, 2024). Based on this discussion, the hypotheses of this study are formulated as follows:

H1: Special Autonomy Funds have a positive effect on the acceleration of regional economic convergence in special autonomy beneficiary areas.

H2: Special Autonomy Funds have a positive effect on economic growth, both in the short run and in the long run.

Data Source and Description

To assess the influence of Special Autonomy Funds (SAF) on economic disparity in Indonesia, the authors employed an unbalanced panel dataset covering 496 cities / regencies across the country, of which 59 were located in special autonomy regions, for the period 2007–2020. Data on Special Autonomy Funds (SAF), Unconditional Transfers (UT), Conditional Transfers (CT), Revenue Sharing Transfers (RST), and Local Own-Source Revenue (LOS) were obtained from the Directorate General of Fiscal Balance.[1] These data were complemented by the data from the World Bank[2] on Gross Domestic Product (GDP), from which the authors calculated GDP growth rates. Data on the Agricultural Share of GDP (AgriShare), Mining Share of GDP (MiningShare), and Manufacturing Share of GDP

[1] Directorate General of Fiscal Balance. (2025). Regional Financial Data Starting 2006. URL: https://djpk.kemenkeu.go.id/?page_id=23282 (Date of access: 05.07. 2025).

[2] World Bank. (2025). World Development Indicator. URL: https://databank.worldbank.org/source/world-development-indicators (Date of access: 05.07.2025).

(ManuShare) were derived by dividing the GDP of each respective sector by total GDP.

Results

The Results of Economic Convergence Analysis

Interprovincial economic convergence in Indonesia was analysed using the Hausman–Taylor Estimator (HTE). The HTE was selected because it allows for the estimation of the effects of time-invariant variables, which cannot be directly estimated using the Fixed Effects Model (FEM), while simultaneously controlling for potential correlations between province-specific effects and explanatory variables.

This model was designed to test two main hypotheses. First, it examines whether economic convergence exists among provinces in Indonesia. Second, it investigates whether provinces with Special Autonomy status experience faster economic convergence than non-Special Autonomy provinces. To test these hypotheses, the lagged GDP growth rate variable ($GDPrate_{t-1}$) was used as a proxy for the initial level of regional economic development. In addition, an interaction term between the lagged GDP growth rate and the Special Autonomy dummy variable ($GDPrate_{t-1} \cdot SpecialAutonomy$) was included to assess differences in the speed of convergence between the two groups of provinces. Table 1 presents a summary of the HTE estimation results for all provinces in Indonesia.

Based on the results presented in Table 1, the lagged GDP growth rate variable (GDPratet-1) has a negative and statistically significant coefficient, indicating the presence of β-convergence at the national level. This finding suggests that provinces with lower initial levels of GDP tend to experience faster economic growth than provinces with higher levels of Gross Regional Domestic Product per capita. These results are consistent with neoclassical growth theory and the regional economic convergence literature, which argue that poorer regions have the potential to catch up with wealthier regions when they have access to similar levels of capital and technology (Appiah-Otoo & Song, 2021; Das & Drine, 2020).

The interaction term between the initial GDP growth rate and the Special Autonomy dummy variable ($GDPrate_{t-1} \cdot SpecialAutonomy$) is positive and statistically significant. This result indicates that the negative relationship between initial economic conditions and subsequent economic growth is weaker in Special Autonomy provinces than in non-Special Autonomy provinces. In other words, the process of economic convergence occurs more slowly in Special Autonomy provinces. In some cases, the estimated effect may even suggest a tendency toward economic divergence.

Table 1

Results of Economic Convergence Analysis

No.	Variable	Coef.	Robust Std. Error
1	Constant	–0.00831	0.0606
2	$GDPrate_{t-1}$	–0.115***	0.0357
3	$GDPrate_{t-1} \cdot$ SpecialAutonomy	0.157**	0.0746
4	SpecialAutonomy	–0.0319***	0.00802
5	UT	0.0211***	0.00408
6	CT	–0.000966	0.00078
7	RST	0.00111	0.0019
8	LOS	–0.0174***	0.000768
9	JavaRegion	0.00396	0.00385
10	AgriShare	–0.0617***	0.00765
11	MiningShare	–0.0346***	0.0131
12	ManuShare	0.0048	0.013
	Observation	6,196	–
	Number of cities /regencies	494	–

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$
Source: Authors' calculations

These findings indicate that the Special Autonomy policy has not succeeded in accelerating the reduction of interprovincial economic disparities. Although the primary objective of the Special Autonomy Funds is to reduce regional underdevelopment by promoting faster economic growth in beneficiary regions, the empirical evidence from the estimation results suggests that the expected convergence-enhancing effect has not been achieved during the observation period.

Therefore, the HTE results for all provinces in Indonesia provide initial evidence that the Special Autonomy Funds have not yet been effective as an instrument for accelerating economic convergence. These findings serve as the basis for further analysis of the impact of the magnitude of Special Autonomy Funds on economic growth within Special Autonomy provinces, which is discussed in the following subsection.

Analysis of the Effect of Special Autonomy Funds on Economic Growth

Having established that Special Autonomy provinces experience slower economic convergence than non-Special Autonomy provinces in the national model, the analysis subsequently focuses exclusively on Special Autonomy regions. The objective is to examine whether the magnitude of Special Autonomy Funds (SAF) per capita affects the economic growth rate of beneficiary provinces, both contemporaneously and through lagged effects extending up to two years after fund allocation.

The estimation was conducted using the Fixed Effects Model (FEM). The choice of FEM was based on the results of the Hausman test, which yielded a Prob > Chi2 value of 0.0021, showing that the ran-

dom effects assumption was violated. Consequently, the FEM was considered more appropriate because it controls for potential correlations between unobserved province-specific effects and the explanatory variables.

This model encompasses several control variables such as Regional Original Revenue per capita, General Allocation Funds per capita, Revenue-Sharing Funds per capita, and Special Allocation Funds per capita. In addition, provincial economic structure was controlled for using the shares of agriculture, mining, and manufacturing in GDP, represented by the Agriculture Share of GDP, Mining Share of GDP, and Manufacturing Share of GDP, respectively. Table 2 presents a summary of the FEM estimation results for cities and regencies located within Special Autonomy regions.

Based on Table 2, The Special Autonomy Funds of the ongoing year have a positive coefficient but have a limited significance level. This shows the existence of an indication that the increase in the Special Autonomy Funds per capita may encourage economic growth in the receiving year, even though the power of the statistical evidence was still weak. This was consistent with the study of Hannan et al. (2022) and Chudik et al. (2021) that additional fiscal support may also provide short-term economic stimulus through an increase in governmental expenditures.

The Special Autonomy Funds lag 1 year has a negative coefficient with a marginal significance level. The direction of this relationship indicates that the Special Autonomy Fund's effect in the previous year tends to not be sustainable. Even, it may potentially decrease the rate of economic growth in the next year. This phenomenon may happen when the expenditures that are funded by the Special Autonomy Funds rather have a consumptive characteristic, i. e., do not result in new sustainable production capacities.

Table 2

Estimation Results for the Effect of Special Autonomy Funds

No.	Variable	Coef.	Robust Std. Error
1	Constant	0.0341	0.528
2	SAF	0.0148*	0.00804
3	SAF_{t-1}	–0.00983*	0.005
4	SAF_{t-2}	0.00530	0.00451
5	UT	–0.0171	0.0249
6	CT	0.00526	0.00596
7	RST	0.000439	0.000439
8	LOS	–0.0121***	0.00194
9	AgriShare	0.537***	0.199
10	MiningShare	0.159	0.291
11	ManuShare	–0.185***	0.0623
	Observation	595	–
	R-Squared	0.133	–
	Number of cities / regencies	59	–

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$
Source: Authors' calculations

The Special Autonomy Funds lag 2 years shows a positive coefficient, although it is not significant, indicating that the Special Autonomy Funds' effects in the last two years do not have a clear contribution towards the economic growth of the ongoing year. This shows that the impact of the Special Autonomy Funds tends to have short-term effects without any clear evidence on the existence of a sustainable effect in the mid-term.

The control variable shows relatively consistent results with previous literature. The Regional Original Income per capita has significant negative coefficients, indicating the existence of a fiscal convergence pattern, where areas with high Regional Original Income tend to have a slower economic growth. In several models, Agrishare shows a significant positive coefficient, which may reflect the role of the agricultural sector as the main supporter of the economy in the Special Authority region. On the contrary, Manushare tends to have a significant negative coefficient, indicating the relatively small contribution of the manufacturing sector in the Special Authority region, showing its incapability to become a strong supporter of economic growth.

As a whole, the FEM estimation results in the Special Authority region show that Special Autonomy Funds have not been proven to give significant and sustainable results towards economic growth. The impacts that occur tend to only have short-term effects in the receiving year but do not last in a longer period. These findings strengthen the indication that there needs to be an evaluation on the management and effectiveness of the Special Autonomy Fund's usage so that it may provide a real contribution towards the acceleration of economic growth in the receiving area.

Discussion

Do the Special Autonomy Funds Truly Accelerate Economic Growth?

Our empirical results show that the Special Autonomy Funds have not been able to accelerate economic growth in the beneficiary region. These findings are consistent across the two analysis levels used.

In the national-level convergence analysis, the results indicate the presence of β-convergence in Indonesia. Specifically, provinces with lower initial levels of GRDP per capita tend to experience faster economic growth compared to provinces with higher initial GRDP per capita. However, the interaction term between initial GRDP per capita and the Special Autonomy status is positive and statistically significant. This finding suggests that convergence

occurs more slowly in Special Autonomy regions than in non-Special Autonomy provinces. In other words, despite substantial fiscal transfers to these regions, the pace at which income disparities are narrowing remains below the national average.

At the Special Autonomy regional level, the Fixed Effects Model (FEM) estimation results show that the magnitude of Special Autonomy Funds (SAF) per capita does not exert a consistent or statistically significant effect on economic growth. In the year of receipt, the SAF coefficient is positive, which may indicate a short-term stimulative effect on economic activity; however, the statistical evidence supporting this relationship is weak. Consequently, this positive effect cannot be considered robust across all Special Autonomy regions.

When examining lagged effects, the one-year lag of SAF yields a negative and marginally significant coefficient. This suggests that any short-term growth stimulus observed in the receiving year does not persist into the following year and may, in some cases, be associated with slower economic growth. In the two-year lag specification, the coefficient turns positive again but remains statistically insignificant. Overall, there is no strong evidence that the effects of Special Autonomy Funds persist in the medium term.

Within the framework of neoclassical growth theory (Solow, 1956), economic convergence requires faster accumulation of productive capital in less developed regions. In principle, Special Autonomy Funds, which are disbursed annually, should facilitate this process by supporting infrastructure development and enhancing human capital formation. However, the empirical findings suggest that these funds have not significantly altered convergence dynamics in Special Autonomy regions.

Meanwhile, within the endogenous growth framework (Lucas, 1988; Romer, 1986), long-term economic growth is driven by increases in productivity, innovation, and the quality of human capital. If Special Autonomy Funds are not predominantly allocated to sectors that generate sustained productivity gains, such transfers are likely to produce only temporary increases in aggregate demand without corresponding improvements in productive capacity. The empirical results of this study are consistent with this perspective, as the effects of Special Autonomy Funds tend to dissipate after the initial period of disbursement.

Considering the results of these two analyses, it can be concluded that the macro-objective of the Special Autonomy Funds to accelerate economic growth in recipient regions has not been achieved in the research period. Although Special Autonomy regions have not demonstrated faster convergence, they also do not exhibit significant or sustained growth effects from Special Autonomy Funds. This indicates a clear gap between the intended policy objectives and the observed empirical outcomes.

The findings further suggest that Special Autonomy Funds do not generate sustainable economic growth, primarily because a large share of expenditures is not directed toward productive sectors. The majority of funds are allocated to personnel expenditures, routine operational costs, and social expenditures, which do not directly contribute to the formation of public capital that enhances long-term productivity. Limited investment in economic infrastructure, education quality, health services, and value-added economic activities constrains the transformation of fiscal transfers into increases in regional productivity.

This pattern is reflected in the expenditure structure of regions such as Aceh and Papua, where routine expenditures consistently dominate total regional spending compared to capital expenditures during the 2020–2023 period (see Figure 1). This composition helps explain why Special Autonomy Funds appear to have short-term effects but fail to generate sustainable long-term economic growth.

These findings suggest that the success of affirmative fiscal policies, such as Special Autonomy Funds, cannot be adequately assessed based solely on the magnitude of allocated funds. Instead, the effectiveness of fund utilisation is a more critical determinant of sustainable regional economic development. Without a utilisation strategy that translates additional resources into long-term productivity gains, there is a substantial risk that Special Autonomy Funds will generate only short-lived effects, failing to make a meaningful contribution to accelerating growth or narrowing interregional economic disparities.

Policy Implications

To enhance the effectiveness of Special Autonomy Funds, more operational and targeted policy measures are required. First, the central government should establish mandatory spending requirements specifying a minimum share of Special Autonomy Funds allocated to productive capital expenditures, particularly in economic infrastructure, education quality improvement, and healthcare services. Second, regional planning and project management capacities should be strengthened to ensure that program selection prioritises long-term growth objectives. Third, the transfer mechanism should adopt performance-based budgeting, whereby fund disbursement is linked to the achievement of clearly defined output and outcome indicators. Fourth, monitoring and evaluation systems should be strengthened through a transparent, data-driven framework to ensure accountability and effective fund utilisation. Collectively, these measures are expected to ensure that Special Autonomy Funds are

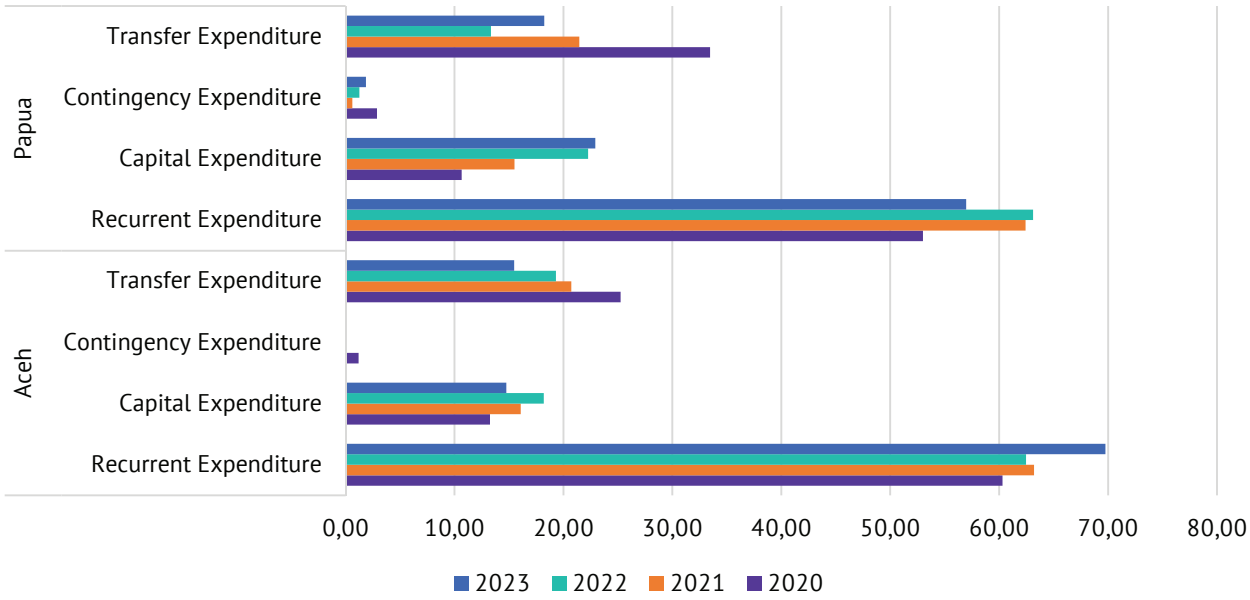

Fig. 1. Composition of Regional Government Expenditure in Aceh and Papua (2020–2023). Source: Compiled by the authors based on the data from the Ministry of Finance of the Republic of Indonesia (2025)

not only fully absorbed but also generate tangible and sustainable development impacts.

In addition, strengthening performance-based management and monitoring mechanisms is crucial to ensure that every rupiah of Special Autonomy Funds generates measurable results. Such an approach can enhance accountability in fund allocation and ensure that its utilisation is aligned with the macro-objectives of the policy, namely accelerating economic growth and reducing interregional disparities. This increases the likelihood that Special Autonomy Funds will function effectively as an affirmative fiscal instrument.

Conclusion

This research showed that Special Autonomy Funds have not yielded the expected results in accelerating economic growth in the recipient regions. Even though this policy is designed as an affirmative fiscal instrument to decrease interregional disparity, Special Autonomy regions still show a relatively low development rate compared to other areas. The positive impacts of the Special Autonomy Funds tend to be limited to the short term and have not been proven to give sustainable changes towards the capacity of the regional economy.

These findings suggest the need to reconsider the strategy for utilising Special Autonomy Funds. Greater priority should be given to productive expenditures with long-term development impacts, such as strategic infrastructure development, improvements in education, and the expansion of healthcare services. In addition, stronger governance and a well-designed monitoring mechanism are necessary to ensure that fund allocation is aligned with the macro-objectives of the policy. By implementing these measures, Special Autonomy Funds are more likely to serve as an effective catalyst for development and for reducing interregional disparities.

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Инструменты искусственного интеллекта использовались исключительно для редактирования и форматирования текста. Все идеи, анализ, интерпретации и выводы являются авторскими; все материалы, подготовленные с использованием ИИ, были проверены на соответствие стандартам научной этики.

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AI tools were used solely for language editing and formatting. All ideas, analyses, interpretations, and conclusions are entirely the authors' own, and all AI-assisted outputs were reviewed to ensure academic integrity.

Конфликт интересов

Авторы заявляют об отсутствии конфликта интересов в связи с публикацией данной статьи. Исследование проводилось без внешнего финансирования и какой-либо финансовой, коммерческой или личной заинтересованности авторов, способной повлиять на его результаты. Все интерпретации, анализ и выводы, представленные в статье, являются исключительно авторскими и выполнены в соответствии с академическими и этическими стандартами проведения научных исследований.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper. This research was conducted independently, without any financial, commercial, or personal relationships that could be construed as a potential conflict of interest. All interpretations, analyses, and conclusions presented in this article are solely those of the authors and were carried out in accordance with academic and ethical research standard.

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