# INDONESIAN TREASURY REVIEW
## JURNAL PERBENDAHARAAN, KEUANGAN NEGARA DAN KEBIJAKAN PUBLIK

# IMPACT OF FISCAL BALANCE FUND TRANSFER POLICIES ON ECONOMIC GROWTH CONVERGENCE IN INDONESIA

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**ABSTRACT**

**Research Originality** — This research aims to analyze how fiscal balance transfers impact the acceleration of economic growth convergence in the country. Convergence means that more regions can enjoy economic growth, which is more evenly distributed.

**Research Objectives** — The research used secondary data from 2015 to 2022 and focused on 34 provinces in Indonesia.

**Research Methods** — This study employs a quantitative research design, with a convergence analysis framework based on panel data regression. The empirical model uses both absolute and conditional convergence methodologies to investigate the relationship between regional income levels and fiscal transfer policies. The analysis is based on secondary data from 34 Indonesian provinces between 2015 and 2022. The main explanatory variables are the per capita realizations of General Allocation Funds (DAU), Special Allocation Funds (DAK), and Revenue Sharing Funds (DBH). The fixed effects estimator is used to correct for unobserved heterogeneity, and the Hausman test is performed to assess the validity of the model definition.

**Empirical Results** — The results of this study indicate that balance funds, specifically General Allocation Funds (DAU) and Revenue Sharing Funds (DBH) in the form of block grants can accelerate convergence and promote economic growth. However, the Special Allocation Fund (DAK), which has a specific purpose or is categorized as a purpose grant, has not been able to contribute to Indonesia's economic growth.

**Implications** — The central government needs to exercise vigilance in respect of the allocation of balance funds because DAK has not been able to contribute to the economic growth in Indonesia. Regional governments also need to exercise vigilance and have strong controls in using balance funds. Better planning of balance funds, which are purpose grants, needs to be facilitated through efficient spending planning and synchronized with national priorities, ensuring that balance funds can be properly absorbed by regional governments and have an impact on economic development in each region.

**Keywords**: Regional transfer, decentralization, convergence, economic growth.
**JEL Classification:** H770

## INTRODUCTION
### Background

The objective of economic development is to foster strong economic growth while ensuring the well-being of society. Todaro and Smith (2012) state that economic development is not solely measured by how fast the economy grows but also by identifying who contributes to and benefits from that growth, whether it involves only a few or many people.

This indicates that the dimension of economic development encompasses two key indicators: economic growth and income distribution or economic equity among individuals. Economic growth refers to the increase in per capita income over a sufficiently long period (Kuncoro, 2000). Economic equity, on the other hand, is a condition in which the benefits of economic growth are experienced by nearly all segments of society, not merely enjoyed by a small portion of the population.

Thus, to assess the level of economic development, convergence analysis can be employed as an analytical tool. Barro and Sala-i-Martin (1992) state that convergence occurs when poorer regions are able

to catch up with more affluent ones. Therefore, convergence analysis serves to integrate both economic growth and income distribution dimensions.

In terms of growth, Indonesia's economy has continued to demonstrate positive performance despite global economic challenges stemming from the COVID-19 pandemic and the Russia–Ukraine war in the early 2020s. Although the economy contracted by -2.07% during the initial phase of the pandemic, Indonesia returned to positive growth in the following two years, reaching a growth rate of 5.31% in 2022. Figure 1 illustrates that Indonesia exhibited greater economic resilience during both the 2020 pandemic crisis and the 2009 global financial crisis compared to other Southeast Asian countries. During the 2009 crisis, Indonesia's economic growth slowed but remained positive at 4.63%. In 2020, the economic contraction in Indonesia was only 2.07%, significantly lower than the deeper contractions experienced by other ASEAN countries, such as the Philippines at 9.4%, Thailand at 6.1%, and Malaysia at 5.5%.

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**APPLICATIONS FOR PRACTICE**

- Indonesia is currently seeing an economic convergence, indicating that the economic growth of disadvantaged provinces is catching up with that of more developed provinces.
- The study found that intergovernmental transfers such as the DAU and DBH, which tend to function as block grants, could enhance growth convergence and economic equity.
- The central government should reconsider the design of intergovernmental transfers, favoring a greater proportion of block grants over purpose grants.
- The findings indicate that purpose-specific grants have not been effective in boosting Indonesia's economic growth; therefore, they should be implemented more effectively through efficient spending plans that align with national priorities.

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Figure 1 Comparison of Indonesia's Economic Growth with ASEAN Countries
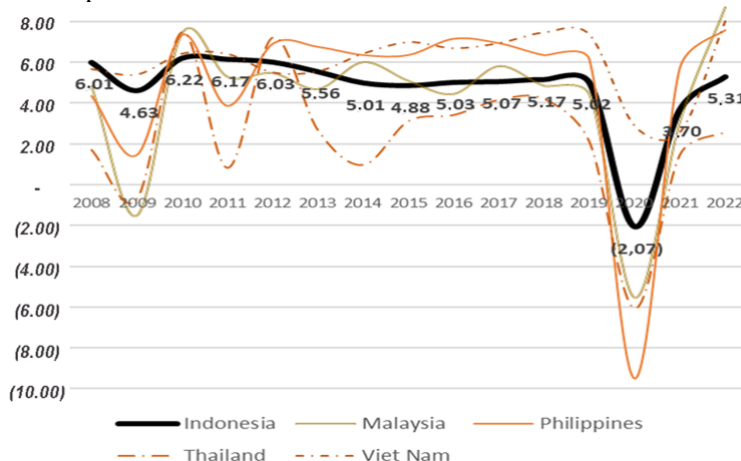


Source: data.worldbank.org, 2023

However, in terms of economic equity, inequality in Indonesia has increased. This can be observed through the regional disparity index, also known as Williamson Index, in Indonesia (Williamson, 1965). As shown in Figure 2, the Williamson Index indicates that the disparity in per capita income among provinces has widened. After reaching its lowest point at 0.699 in 2014, interregional inequality rose to 0.714 by 2021.

The Indonesian government continues to minimize income disparities, as reflected in one of the government's fiscal instruments, which is the Balance Funds under the Transfers to Regions policy. Intergovernmental transfer is a government initiative designed to reduce funding disparities between the central and regional governments, encompassing governmental affairs, public services, as well as special autonomy and regional privileges.

Balance funds and non-balance funds are the two main categories of intergovernmental fiscal transfers (BKF, 2021). Balance funds is designed to equalize fiscal capacity both horizontally and vertically between levels of government in financing development responsibilities delegated to local governments. The components of balance funds include Revenue Sharing Funds (DBH), General Allocation Funds (DAU), and Special Allocation Funds (DAK). In contrast, non-balance funds are allocated to specific regions in recognition of their unique characteristics, special status, or as incentives for regional performance. These include Regional Incentive Funds (Dana Insentif Daerah), Special Autonomy Funds (Dana Otonomi Khusus), and, more recently, Village Funds (Dana Desa). Intergovernmental transfers have been implemented

Figure 2 Williamson Index of Per Capita GRDP across Provinces in Indonesia
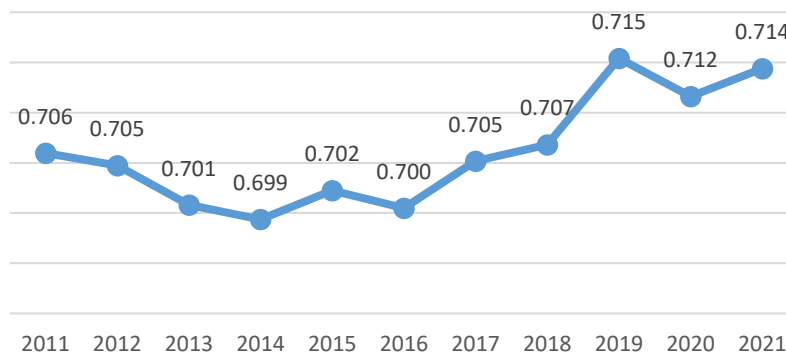


Source: Processed by the author

annually since 2000, with steadily increasing allocations over the years.

As shown in Figure 3, intergovernmental transfers reached IDR 629 trillion in 2015 and continued to increase, reaching IDR 815 trillion by 2022. Balance funds continue to dominate the structure of intergovernmental transfers, accounting for an average of 88.47% of total transfers to regions. However, the increase in balance funds has not yet succeeded in reducing income inequality across regions and among communities, as reflected in the Williamson Index. Nonetheless, a more dynamic analysis of balance funds is needed to assess their impact on economic development. This is because balance funds not only aims to promote economic equity but also serves to stimulate economic growth.

Balance funds are a component of government expenditure, which constitutes a key element in maintaining national income equilibrium. According to the Harrod-Domar model, to achieve higher economic growth, a region must increase its investment ratio, and one component of that investment is government expenditure (as cited in Todaro and Smith, 2012). Therefore, in assessing the impact of balance funds on economic development, a more dynamic analysis is required, one that integrates both economic growth and equity. This can be effectively conducted through convergence analysis.

Several studies form the foundation for research utilizing convergence analysis. Barro and Sala-i-Martin (1992) demonstrated that convergence analysis can be used to assess income convergence across regions in the United States over time. Zainuri et al. (2022) reported findings of convergence in East Java following the 2008 global financial crisis. Aulia and Santoso (2019) revealed economic growth convergence in West Java between 2007 and 2019. Meanwhile, Negara and Khoirunurrofik (2021) reported convergence in per capita income across regencies and cities in Indonesia from 2001 to 2017.

At the provincial level, a study conducted by Wibisono (2003) found that Indonesia experienced economic growth convergence from 1975 to 2000. Similarly, in their study, Resosudarmo and Vidyattama

Figure 3 Realized Budget of Intergovernmental Transfers (Trillion Rupiah) for the 2015–2022 Periods
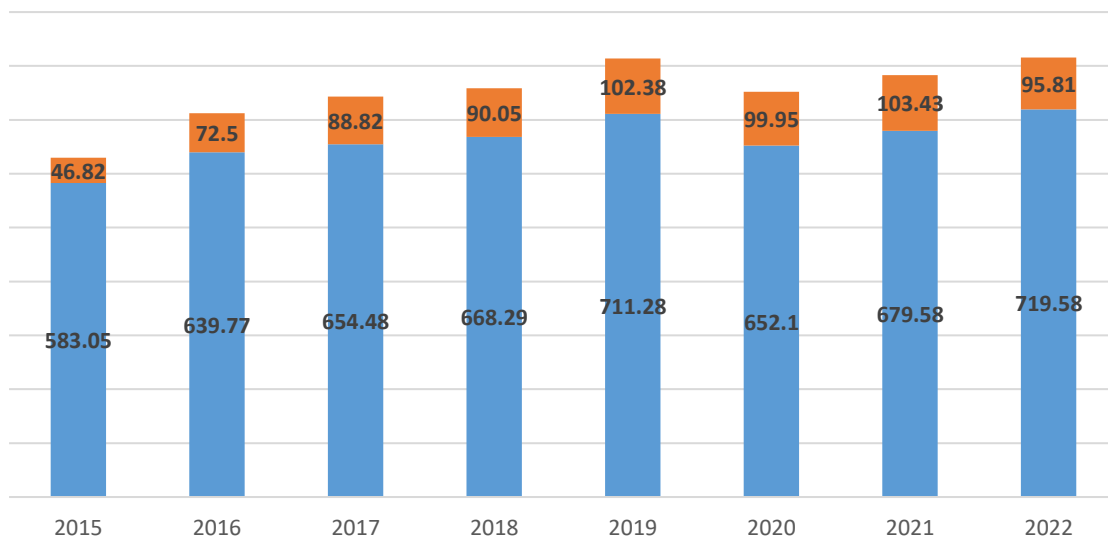


Source: Ministry of Finance (2023)

(2006) showed that regional economies in Indonesia underwent convergence from 1993 to 2002.

Given the aforementioned issues and various data, this study seeks to examine the impact of balance funds on the acceleration of economic development convergence in Indonesia. A faster pace of convergence will naturally enhance income equality, as less-developed regions are able to catch up with more affluent ones. This process has the potential to strengthen long-term economic growth and aligns with the core principle of economic development, ensuring that prosperity is equitably shared by all segments of society.

### Research Problems

With respect to the issues previously discussed, this study seeks to address two main research questions: To what extent has economic growth convergence occurred in Indonesia? and, How does the intergovernmental transfer policy (balance funds) influence economic convergence in Indonesia?

In line with the research questions, this study has two main objectives: to examine the level of economic growth convergence in Indonesia and analyze the impact of the balance funds policy on economic convergence in the country.

## LITERATURE REVIEW

This section provides a brief overview of the theories and hypotheses that form the foundation of the research.

### Fiscal Decentralization

Fiscal decentralization refers to the delegation of authority to local governments to manage and administer their finances independently. This arrangement aims to enable regions to maximize their local potential and mobilize revenue sources by their respective capacities (Khusaini, 2018).

Decentralization policy has also served as a strategic transition in countries that previously implemented socialist policies (Ichimura & Bahl, 2008). This is based on several advantages inherent in the decentralization design, particularly the argument that economic efficiency can be achieved if the decentralization system is properly implemented (Oates, 1972).

The concept of decentralization was first introduced by Charles Tiebout in 1956 in the Tiebout Hypothesis (Michael, 2008). This theory asserts that decentralization can enhance the efficiency of public goods provision by allowing them to vary according to the preferences of each region. This certainly offers a solution to the free rider problem in local governance. Specifically, competition among local governments can foster a competitive environment in which regional authorities strive to provide an optimal level of public goods.

Building upon Tiebout's initial ideas, Oates (1972) developed a more comprehensive theory on the optimization of decentralization. Oates identified a distinction between how governments respond to local preferences and how they internalize externalities and enhance economies of scale. When local governments undertake substantial decentralization, it can lead to a diversity of tax and expenditure policies, thereby enhancing both efficiency and governmental responsiveness.

One of the most significant advantages of a decentralized system is that welfare improvement can be achieved when the government is closer to the people (Oates, 1972). Based on this premise, public services should be provided at the local level (Hankla, 2009). Delivering public services at the regional level enhances the economic efficiency of each area, which collectively contributes to national economic development. Therefore, if the government is able to effectively implement fiscal decentralization, two positive outcomes are likely to occur: (1) improved accountability, as local governments are responsible for the quality of services delivered to their communities, and (2) increased willingness among local citizens to pay for public services, whether through taxes or other mechanisms, because they receive services that align with their preferences (Oates, 1972).

Bahl and Linn (1994) argue that decentralization enables a more efficient distribution of local public services by granting greater authority to local governments to manage budgets in accordance with local needs. In countries with vast territories and large populations, a decentralized system is particularly ideal, as public service delivery can be more effectively and efficiently managed by local government (Bahl & Linn, 1994).

The more decentralized a government is, the greater the opportunity to provide diverse levels and types of public services (Hyman, 2010). Through appropriate fiscal decentralization, local governments can align their budgets with community preferences, resulting in a much more efficient distribution of services compared to a centralized system. Moreover, local governments can also collect taxes or levies in several strategic sectors more easily than the central government, making revenue collection more effective and contributing to increased local income.

The current development of fiscal decentralization systems worldwide is closely tied to public economics theory. According to Musgrave (as cited in Negara and Khoirunurrofik, 2021), public sector

authority is divided into three main functions: (1) the stabilization function, (2) the distribution function, and (3) the allocation function.

Musgrave's model advances the discussion on the distribution of fiscal responsibilities across levels of government. The central government is responsible for maintaining stable economic growth and ensuring income distribution. In contrast, local governments are tasked with determining the composition of expenditures for public services and the mechanisms for financing them.

Although the design of fiscal decentralization appears promising for economic development, it also entails potential risks and associated costs. From the central government's perspective, it becomes evident that the government may functionally lack the flexibility to respond swiftly to national economic change, such as raising taxes, cutting public spending, or limiting debt in the face of a deficit (Ichimura & Bahl, 2008). The central government may appear to lose control over local governments, thereby reducing its ability to adapt effectively to the dynamics of the global economy.

Even within a purely decentralized fiscal structure, implementing policy stability is more challenging compared to a centralized system. One of the key reasons is that the central government lacks the ability to control local government expenditures in response to national economic instability. Furthermore, fiscal decentralization has the potential to hinder national infrastructure development. This condition may arise when regional interests in enhancing public service delivery diverge from national priorities on the development of interregional infrastructure connectivity.

This situation may arise when regional interests in improving public services conflict with national interests in developing interconnected infrastructure across regions.

Oates also argues that it is inefficient for local governments to provide public goods that generate spillover effects across regions. The provision of such public goods is considered suboptimal, as it can reduce local efficiency and offer little benefit to the local government itself. On the other hand, it is equally inefficient for the central government to provide public goods that must accommodate the diverse preferences of communities across the entire nation. This mismatch may lead to reduced investment in infrastructure such as irrigation systems, roads, and national power plants.

Another risk associated with fiscal decentralization is uneven economic development. Fiscal decentralization is not inherently a policy designed to equalize economic conditions (Ichimura & Bahl, 2008).

Limited central government control over local revenue can undermine the potential for economic equalization. When fiscal decentralization heavily depends on the revenue-generating capacity of individual regions, jurisdictions with strong revenue potential naturally possess greater fiscal capacity. Conversely, this condition does not apply in regions with low revenue potential and limited fiscal capacity.

To address the issue of economic disparity inherent in fiscal decentralization systems, the implementation of an "equalization grant" program is necessary, providing financial support to regions with limited fiscal capacity (Ichimura & Bahl, 2008). For example, in South Africa, approximately 90% of local government revenue is supported by such an equalization grant program (Reschovsky, 2004). This equalization mechanism laid the foundational framework for the development of "intergovernmental transfers," which was later adopted by the Indonesian government in the form of the Transfer to Regions (TKD) system. These transfers are categorized into two main types: balance funds and non-balance funds (BKF, 2021).

**Balance Fund Transfers in Indonesia**

Balance funds constitute a crucial component of the TKD system. These balance funds are designed to promote financial equity between different levels of government, specifically between central and local governments, in financing development initiatives. The balance funds consist of three main components: the Revenue Sharing Funds (DBH), the General Allocation Funds (DAU), and the Special Allocation Funds (DAK).

In line with its function in promoting economic equity, the balance fund represents a category of intergovernmental transfers that more closely reflects an equalizing grant, aimed at addressing economic disparities resulting from the implementation of fiscal decentralization. In contrast, non-balance funds tend to be part of a political and economic policy mix targeted at specific regions or used as incentives to reward local government performance. An effective intergovernmental transfer mechanism is expected to reduce fiscal imbalances between the central and local governments, both vertically and horizontally. Ultimately, this condition is anticipated to enhance regional growth and community welfare (BKF, 2021).

A wide variation in fiscal capacity between the central and local governments serves as the underlying rationale for the intergovernmental transfer system, which aims to ensure the provision of a minimum standard of public services across all regions of the country. One method to optimize resource allocation within the public sector is through intergovernmental transfers, which facilitate the internalization of interregional externalities (Hyman, 2010).

Intergovernmental transfers have been one of the most frequently discussed and revised policy, despite being well-designed to reduce interregional income disparities (Ichimura & Bahl, 2008). This is largely due to the central government's frequent interference in the provision of local public services, which hinders local governments from generating revenue efficiently (Ichimura & Bahl, 2008). Such condition clearly contradicts the spirit of decentralization, which minimize the role of central government, allowing local governments to fully optimize their economic potential.

With the implementation of intergovernmental transfers, regions with higher fiscal capacity often face disadvantages, as a portion of their revenues is redistributed to regions with lower fiscal capacity. This issue frequently sparks debate on how to design an appropriate intergovernmental transfer system for a given country or region. Consequently, the primary objectives of fiscal decentralization and the role of the central government often become the focal points of various reformulations of intergovernmental transfer policies (Ichimura & Bahl, 2008).

Law of the Republic of Indonesia Number 1 of 2022 defines TKD as funds sourced from the state budget (APBN) and constituting an integral part of national expenditure. These TKD are allocated and disbursed to regional governments to fund governmental affairs under their jurisdiction. This indicates that TKD is a component of government spending or government expenditure. In a macroeconomic context, government expenditure is one of the components in the formation of gross regional domestic product (PDRB) through the expenditure approach.

Similar to most countries in the world that implement intergovernmental transfer systems, Indonesia also regularly updates the design of its TKD system. At the beginning of the reform era in 2001, Indonesia shifted from TKD system based on specific criteria to the DAU, which allows regions to allocate their budget according to their respective needs. To complement this design, the DBH was introduced as a mechanism for sharing revenues between regions.

In 2002, the government introduced the Special Autonomy and Adjustment Funds to specific regions, starting with Papua Province. In 2006, Aceh Province was added as another recipient of the Special Autonomy Funds. In addition to the special autonomy fund, a new intergovernmental transfer instrument, the DAK, was introduced in 2003. This fund is allocated to regions that meet specific criteria to help finance activities that fall under regional responsibilities in support of national priorities.

Along with the development and reformulation of the intergovernmental transfer system in 2014, the Village Fund was introduced as an additional component of the transfer mechanism. The Village Fund is sourced from the APBN and is allocated to rural village areas to finance village administration, including infrastructure development, community development, and rural empowerment programs.

**Convergence**

Among the various economic growth models developed in the field of economics, the economic growth model proposed by Robert Solow (1956) has become one of the foundational frameworks for research on convergence.

The Solow growth model posits that, under certain conditions, economies tend to converge toward similar levels of income. Convergence occurs when all economies share similar rates of savings, employment growth, currency depreciation, and productivity growth. Thus, the Solow model serves as a research framework for studying convergence in an economy (Todaro & Smith, 2012).

As illustrated in Figure 4, the vertical line represents the level of output, while the horizontal line represents capital per capita (k). Two key curves in this graph are the sf(k) curve and the $(\delta + n)$ k curve. The sf(k) curve is referred to as the actual level of investment, while the $(\delta + n)$ k curve represents the

Figure 4 Solow Neoclassical Growth Model
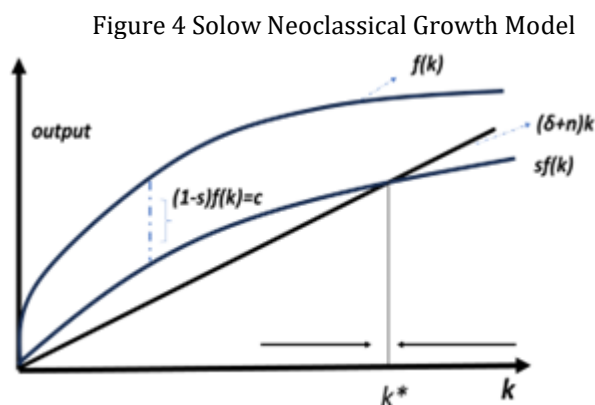


Source: Olsson, 2010

break-even level of investment. In addition to these two is the f(k) curve, which shows the output produced per capita. Meanwhile, the distance between the sf(k) curve and the f(k) curve represents per capita consumption.

The equilibrium point, denoted as k*, is often referred to as the steady-state equilibrium. At a lower level, or when k* > 0, there is a sharp increase in output per capita. This condition illustrates that regions or countries with relatively low capital per capita are likely to experience sustained high growth in output per capita. The rate of output growth gradually slows down as it approaches the stable equilibrium level at k* = 0.

Conversely, at higher levels where k*<0, output per capita tends to stagnate, causing the capital per capita level to gradually return to the equilibrium point k*. This characteristic of the neoclassical economic growth model implies a form of convergence, where regions or countries with lower capital-to-labor ratios experience higher output per capita growth rates and tend to catch up with countries that have higher capital-to-labor ratios (Barro & Sala-i-Martin, 1992).

In the Solow model, it is important to emphasize that an increase in s or the savings rate can also increase the steady-state equilibrium, which is undoubtedly a valuable contribution to economic development (Todaro & Smith, 2012).

**Theoretical Framework**

To develop a conceptual framework for this study, a framework as illustrated in Figure 5 was used. The balance funds are a component of fiscal decentralization and intergovernmental transfers implemented in Indonesia. They play a role in stimulating both economic growth and economic equity.

In accordance with the Solow growth model, changes in capital are positively influenced by the portion of income that is saved, as reflected in government investment. As a component of government expenditure, the balance funds is intended to promote Indonesia's economic growth.

The balance funds, which are part of the TKD, also serve as an equalizing grant (Ichimura & Bahl, 2008). In a fiscal decentralization system that emphasizes each region's revenue-generating capacity, the balance funds functions to offset fiscal disparities both among regions and between the central and local governments. Therefore, to assess the impact of the balance funds on two key economic indicators, economic growth and equity, which serve as benchmarks of development, it is necessary to conduct a convergence analysis of per capita income across Indonesia to understand the country's economic development trajectory.

Figure 5 Theoretical Framework



Source: Processed by the author

## METHODS

**Research Approach**

This study employed a quantitative approach. Quantitative research adheres to scientific principles in a real or empirical, objective, measurable, logical, and systematic manner (Sugiyono, 2019).

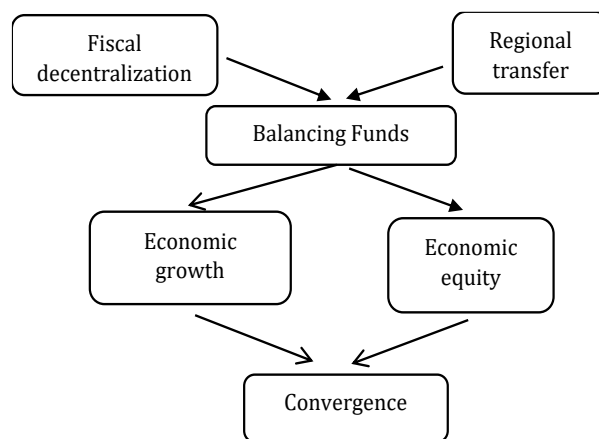**Research Location and Period**

The objects of this study were all 34 provinces in Indonesia. The research period spanned from 2015 to 2022.

This study utilized secondary panel data. Data on the balance funds were obtained from the realized budget of TKD, sourced from the Directorate General of Fiscal Balance (DJPK), the Directorate General of Treasury (DJPb), and the Directorate General of Budget (DJA) of the Ministry of Finance, as well as from reports published by Bank Indonesia. Furthermore, data about economic equity, regional economic growth, population, and PDRB for each province or region were obtained from Bank Indonesia and the Central Bureau of Statistics (BPS).

**Model Specification**

This study employed a convergence framework (dynamic analysis), which includes absolute convergence and conditional convergence, to examine how convergence contributes to Indonesia's economic development. Conditional convergence refers to the hypothesis that a country's economic growth is influenced not only by its initial per capita income level but also by other economic characteristics. In

contrast, absolute convergence posits that a country's economic growth is determined solely by its initial per capita income level, without accounting for other economic factors or characteristics (Negara & Khoirunurrofik, 2019).

For the absolute convergence analysis, this study adopted the model developed by Barro and Sala-i-Martin (1992). The provided equation describes the relationship between the growth rate of per capita income over two periods of time and the initial level of per capita income:

$$ln\left(\frac{y_{i,t}}{y_{i,t-1}}\right) = \alpha + \beta_0\, ln\left(y_{i,t-1}\right) + u_{i,t} \quad \text{.... (1)}$$

$(y\_(i,t)/y\_(i,t-1))$ represents the ratio of per capita income in the final period ($yi,t$) to per capita income in the initial period ($yi,t-1$), y_(i,t) stands for per capita income based on the PDRB per capita of province $i$ at constant 2010 prices in year $t$, y_(i,t-1)) is per capita income in the previous period, based on the GRDP per capita of province $i$ at constant 2010 prices in year $t-1$, and u_(i,t) is the error term, representing the disturbance factor in the equation used for conditional convergence, which is as follows:

$$ln\left(\frac{y_{i,t}}{y_{i,t-1}}\right) = \alpha + \beta_0 ln\left(y_{i,t-1}\right) + \beta_1 ln\,(X1) + \beta_2 ln\,(X2) + \beta_3 ln\,(X3) + \ +u_{i,t} \quad \text{.... (2)}$$

where:
X1 is realization of General Allocation Funds per capita for each province,
X2 is realization of Special Allocation Funds per capita, and
X3 is realization of Revenue Sharing Funds per capita.

The coefficient value of $\beta_0$ below 0 indicates that the economy between regions is converging in the long run (the smaller the growth differential across regions, leading the economy toward a constant equilibrium level). In contrast, if the coefficient value of β0 has a value greater than 0, the economy between regions tends to diverge (the larger the growth differential across regions, causing the economy to move away from a constant equilibrium level).

## Hausman Specification Test

In econometric research, examining the specification of the baseline model is crucial (Hausman, 1978). This study aims to empirically demonstrate whether there is a systematic difference between the first model equation, considered as the baseline model or the equation that does not involve regional transfers, and the subsequent model equations, that involve regional transfers. Using the Hausman Test, a null hypothesis can be formulated, stating that the differences in coefficients between the two equations are not systematic. If the Hausman Test yields significant results, the convergence rate during the study period differs systematically from the convergence rate in other years when regional transfer policies are included in the model equation. This indicates the influence of regional transfer variables in accelerating the convergence coefficient β0 in the first or base model.

## RESULTS AND DISCUSSION
### Results

The convergence test in this study employs the fixed effects method, with the regression results presented in Table 1. The choice of the fixed effect method was based on the best comparison among the fixed effect, the common effect, and the OLS methods.

The regression results from Table 2 show that in the basic model, or Model 1 (absolute convergence), the coefficient value of the previous year's per capita income variable (ln_lag_pdrb) is -0.14 (β0 < 0).

This indicates a convergence of per capita income in Indonesia. In other words, the income distribution process is improving over time without involving the balance funds variable. This finding supports Abramovitz's (1986) catching-up hypothesis, which argues that economies with low productivity have the potential to experience accelerated economic growth.

This provides evidence of regional convergence where low-income economies such as North Maluku and Gorontalo tend to grow faster than rich economies such as DKI Jakarta and East Kalimantan on a per capita basis.The constant (cons), which is positive, indicates that year by year per capita income has been improving. Both constants also significantly affect the dependent variable. This indicates that in addition to an increasingly narrowing income distribution process, there is growth in per capita income, which is one of the primary indicators of economic development.

The following step in this study was to examine the conditional convergence. Conditional convergence was evident in Model 2, which involved the equalization fund variable. In Model 2, the General Allocation Funds (ln_dau) and Revenue Sharing Funds (ln_dbh) exhibited a significant influence on the dependent variable (ln_y), with a significance level of below 1%. Meanwhile, the Special Allocation Funds (ln_dak) did not show a significant influence on the dependent variable.

Table 1 Operational Definitions and Measurement of Research Variables

| Variable | Definition | Unit of Measurement |
|---|---|---|
| Per Capita Income | The level of per capita income based on each province's PDRB at constant prices using the 2010 base year. | Thousand Rupiah |
| General Allocation Funds per capita | The realized DAU allocated to each province is divided by the population of the respective province. Measured in thousand rupiah. | Thousand Rupiah |
| Special Allocation Funds per capita | The realized DAK allocated to each province is divided by the population of the respective province. Measured in thousand rupiah. | Thousand Rupiah |
| Revenue Sharing Funds per capita | The realized DBH allocated to each province divided by the population of the respective province. Measured in thousand rupiah. | Thousand Rupiah |

Source: Processed by the author

To determine whether the variables in Model 2 could accelerate the convergence of economic growth in Indonesia, it is necessary to test the specification of the base model with Model 1. This study aims to empirically demonstrate whether there is a systematic difference in coefficients between Model 1 equation, serving as the base model and Model 2. By using the Hausman Test, a null hypothesis could be formed, indicating that the difference in coefficients between the two equations is not systematic, and the hypothesis used is as follows:

H0: The difference in coefficients between the two models is not systematic.
H1: The difference in coefficients between the two models is systematic.

Table 3 gives data on model specification testing using the Hausman test. As shown in Table 3e, the coefficients between the two models were different and systematic.

## Discussion
Effect of Balance Funds

As shown in Model 2 (Table 2), the balance funds, consisting of DAU, DAK and DBH, were able to accelerate the convergence of economic growth in Indonesia. This was evidenced by the coefficient $\beta_0$ Model 2 with variable changes in per capita income (ln_lag_pdrb), which showed a value of -0.203 or faster convergence rate with the coefficient $\beta_0$ in Model 1, which was -0.14. With the Hausman model specification test, which indicated that the coefficient between the two models was systematically different, it was evident that all three factors, collectively, were capable of accelerating the rate of economic growth convergence in Indonesia.

Table 2 Convergence Regression Results Across Provinces from 2015 to 2022

| Independent Variable | *Dependent Var*: Proportion of per capita income compared to the previous period's per capita income ($\ln(y)$) | |
|---|---|---|
| | Model 1 | Model 2 |
| Change in Per Capita Income_lag_pdrb) | -0.14*** | -0.1725*** |
| | (0.035) | (0.03) |
| DAU per capita (ln_dau) | | 0.214*** |
| | | (0.04) |
| DAK per capita (ln_dak) | | 0.028 |
| | | (0.03) |
| DBH per capita (ln_dbh) | | 0.053*** |
| | | (0.007) |
| **Cons** | 2.4798*** | -1.18 |
| | (0.618) | (0.86) |
| **Prob > F** | 0.0000*** | 0.0000*** |
| **R2** | 0.0718 | 0.31 |

Notes: (i) The model uses fixed effects.
(ii). *** denotes significance at a 1% level, ** at a 5% level, and * at a 10% level
(iii) Values below the main coefficients are standard errors.

Source: Processed by the author

By the value of the coefficient $\beta_0$, the speed of convergence was calculated using the formula (Barro & Sala-i-martin, 1992) $\lambda = $ **-ln (1 +β0)** with the results in Table 4. As shown in Table 4, when the balance fund variables (DAU, DAK, DBH) were excluded from the assessment of the convergence of per capita income in

Table 3 Results of Hausman Model Specification Test

| Model Comparison | Hausman Test | |
|---|---|---|
| | Prob > χ² | Explanation |
| Model 1 vs. Model 2 | 0.003 | The coefficients between the two models differ systematically. |

Source: Stata 17 output, processed by the author

Table 4 Convergence Acceleration Rate Across Models

| Model | Convergence Coefficient | Convergence Speed |
|---|---|---|
| **Model 1** (Without Balancing Funds) | -0.14 | 15.08% |
| **Model 2** (With Balancing Funds) | -0.172 | 18.98% |

Source: Processed by the author

Indonesia for the periods of 2015-2022, the acceleration of convergence in Indonesia was 15.08%. However, when these variables were included, the acceleration of convergence increased by 3.9% to 18.98%. This indicates that the balance funds in these periods were able to accelerate the convergence rate of per capita income in Indonesia. The results of this study are in accordance with the role of balance funds as a tool to improve the equalization of financial capacity across regions and provinces.

**The effect of the General Allocation Funds (DAU)**

As shown in Model 2, DAU, in addition to jointly accelerating convergence, was also able to increase per capita income growth in Indonesia with a coefficient of 0.214. This indicates that DAU, as part of the balance funds, is able to serve as an instrument of fiscal equalization between different regions.

The position of DAU is strategic among balance funds in Indonesia, as evidenced by the proportion of DAU that was slightly more than half of the average realization of fiscal balance funds from 2015 to 2022, and was higher compared to other types of balance funds. As shown in Figure 6, DAU held the largest share of all types of balance funds, reaching IDR 387 trillion, or 58.34% of the total balance funds. This suggests that DAU remains the primary design in the balance funds.

Figure 6 Average Realization of Fiscal Balance Funds for the 2015–2022 Periods
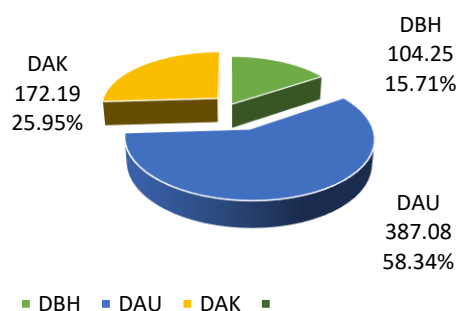


Source: DJPK (2023)

DAU aims at achieving equalization of financial capacity among regions to finance regional needs (Sembiring, 2020). According to Law of the Republic of Indonesia Number 23 of 2014 concerning Local Government, DAU is a fund derived from state revenue. It is budgeted for equalizing the fiscal capacity of each region with its financing needs in the context of the fiscal decentralization process. The results of the analysis showed that DAU as a block grant fund had a positive influence on economic growth and equity in the regions because it can be adjusted to regional needs. Local governments have the freedom to spend block grant funds to finance public expenditures in accordance with their needs because the central government does not enforce strict regulations on how these funds can be used and allocated (BKF, 2021).

Its flexible nature is one of the advantages that enables local governments to drive economic development in their region. In the two decades of fiscal decentralization policy, the DAU policy has shown improvement to strengthen the achievement of its allocation objectives as an instrument of fiscal equity among regions.

Initially, DAU allocations were determined based on the needs and potential of regional economies. However, in accordance with the developments and several policy improvements, the current government policy on the allocation of DAU is based on basic allocations and fiscal gaps.

In line with changes in the design and reformulation of state finances, as per Law No. 18 of 2016, the policy on the use of the DAU is no longer fully implemented as a block grant. Since 2017, local governments have been obligated to allocate 25% of the DAU to finance infrastructure spending that directly relates to increasing employment opportunities, reducing poverty, and narrowing disparities in public services within the regions (BKF, 2021).

**The Effect of the Special Allocation Funds (DAK)**

Although DAK and other balance funds are able to accelerate convergence, they are unlikely to increase per capita income growth in Indonesia. This is evident from the insignificant regression results despite its positive value as shown in Table 1. The results of this study accord with those of research conducted by Negara and Khoirunurrofik (2021), which convey that DAK has a negative impact on per capita income growth in the regions even though the results are not significant, and by Fadilah and Helmayunita (2020) which indicate that DAK does not affect regional spending, which is part of regional economic growth. However, the results of this study differ from those of Oktafia (2018), which show that DAK both simultaneously and partially affects the increase in PDRB in East Java Province.

In accordance with the nature of the DAK as a specific-purpose transfer, its allocation policy is directed towards activities that support the achievement of region-specific national priorities and is focused on performance targets. Yaqin and Herwanti (2019), in their research, argue that DAK has not been effective and has not been oriented towards performance-based budgeting. This is because the direction of the use of DAK is more likely to focus on inputs rather than outcomes.

When examining the allocation of DAK, which can also take the form of physical infrastructure development or physical DAK, researchers argue that its long-term impact on economic growth may not be immediately apparent, as seen in this analysis.

The specific-purpose nature of the fund restricts the flexibility of local governments in promoting regional economic equity. As a result, local governments are often unable to effectively absorb the DAK budget, as its use is limited to predetermined purposes aligned with central government priorities. This condition has led to inefficiencies in the use of DAK, which has also resulted in the increase in SiLPA (Budget Surplus). The Budget Surplus of local governments, which tends to accumulate over time, is attributed not only to an increase in local revenue but also to the fact that transfer funds are not accompanied by adequate government capability in budgeting and spending implementation (BKF, 2021).

Figure 7 Total Budget Surplus (SiLPA) for the 2017–2022 Periods (Trillion Rupiah)
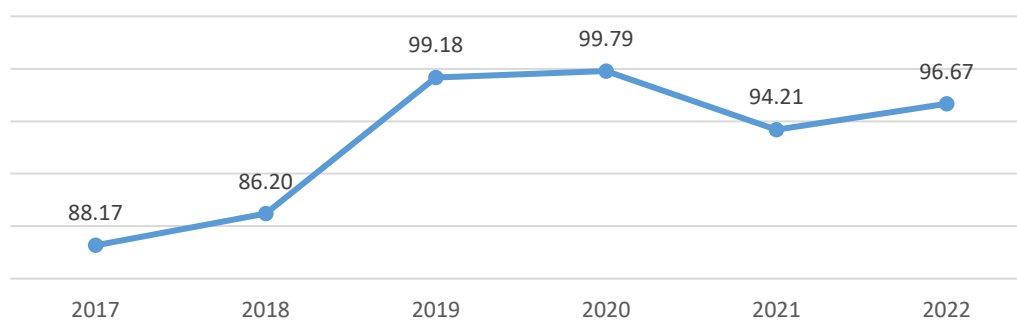


Source: DJPK (2023)

Figure 7 shows the substantial amount of local government Budget Surplus. As shown in Figure 7, the amount of Budget Surplus increased from IDR 83 trillion in 2017 to IDR 96.67 trillion in 2022. The inefficiency of budget use is one of the problems that must be resolved to improve economic development in Indonesia.

**The Effect of the Revenue Sharing Funds (DBH)**

As shown in Model 2 in Table 1, it is evident that, in addition to enhancing the convergence of per capita income among provinces in Indonesia, DBH was also found to promote income growth. It is evident from the coefficient of the DBH per capita variable (ln_dbh), which was positive at 0.053 and had a significance level of below 1%.

DBH is a regional transfer which is in accordance with a certain proportion of revenue sharing on APBN revenues originating from the regions (BKF, 2021). DBH is a transfer fund in the form of a block grant. With a similar nature to DAU, this indicates that DBH can be maximized by local governments, which have more flexibility to increase fiscal space in financing local public services. However, with its implementation, the DBH faces a major challenge as its nature gradually shifts from a block grant to a purpose block grant. This certainly has the potential to further shrink the fiscal space of local governments in spending DBH in accordance with regional priorities in improving public services.

Some DBH policies that began to be directed to specific purposes are (1) DBH of Forestry Natural Resources Reforestation Funds in 2006, (2) DBH of Tobacco Products in 2008, (3) the use of 25% of DBH in general is directed to basic public service infrastructure spending starting in 2017, and (4) 50% of DBH of Tobacco Excise is directed to health.

## CONCLUSION

The analysis from this study indicates that Indonesia is seeing an economic growth convergence. This can be observed in the convergence of per capita income across provinces and the growth of per capita income across provinces in Indonesia. The convergence rate that excluded the regional transfer variable was 15%.

The convergence rate of per capita income across provinces in Indonesia, after the inclusion of regional transfer variables, which are balance funds (DAU, DAK, and DBH), rose to 18%. This indicates that regional transfers of balance funds can accelerate the convergence of economic growth in Indonesia.

The balance funds categories of DAU and DBH are not only able to accelerate convergence, but also increase per capita income growth in Indonesia. Therefore, these two types of transfers, in the context of economic development, according to Todaro and Smith (2012), are able to enhance economic development. However, the DAK is not able to increase the growth of per capita income in Indonesia.

This study suggests that the central government needs to allocate balance funds with caution, as DAK has not been able to increase economic growth in Indonesia. The central government should reconsider the design of regional transfers and adopt more block grants or funds that offer local governments greater flexibility in their use. As indicated by the findings of this study, this approach can increase convergence in economic growth and economic equity in Indonesia, as seen in DAU and DBH. The design of special-purpose grants, such as DAK, needs to be re-evaluated because, according to the findings of this research, it has not been able to foster economic growth.

Local governments also need to exercise vigilance and have strong controls in using the balance funds, both block grant and purpose grant funds. The limited use of balance funds from a purpose grant needs to be better planned through efficient expenditure planning and synchronized with national priorities, thereby balance funds can be effectively absorbed by local governments and have a positive impact on economic development in each region.

## RESEARCH LIMITATIONS

One limitation of this study is that this research remains macroeconomic within the national scope. As a result, the effect of equalization funds in more detail, specifically at the district level within urban areas, is not clearly observable. In the future, more micro research per province or district is needed. Additional research which employs both quantitative and qualitative methods is needed to enable more precise measurement of government policies.

Another limitation of this study is that control variables used only considered the balance fund variable and did not include other variables in the fiscal decentralization process, such as Transfers to Non-Balance Fund Regions, Regional Original Income (PAD), Budget Surplus (SiLPA), or expenditures made by each region.

Furthermore, to better understand the impact of other indicators on accelerating convergence and increasing per capita income growth in Indonesia, it is necessary to extend the research period or include additional variables related to fiscal decentralization in Indonesia.

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