

**CONTRIBUTION OF THE UN REGIONAL FUND AND ROYALTIES FROM
MINERAL AND ENERGY NATURAL RESOURCES TO REVENUE SHARING
FUNDS**

(Empirical Study Across All Provinces of Kalimantan)

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Abstract

This study analyzes the influence of Regional Land and Building Tax (PBB) and royalties from mineral and coal natural resources (SDA Minerba) on Revenue Sharing Funds (DBH) in Kalimantan during the 2022–2024 period. The data used are secondary data from local government financial reports. The method employed is panel data regression with the Fixed Effect Model, based on Chow and Hausman tests. The results show that Minerba royalties significantly affect DBH, while Regional PBB does not. These findings indicate that revenue from extractive sectors greatly influences regional fiscal capacity in Kalimantan. The study recommends optimizing PBB collection and diversifying revenue sources to strengthen sustainable fiscal structures. This research is relevant for addressing fiscal disparities among regions, especially in natural resource-rich areas.

Keywords: Revenue Sharing Funds, Regional Land Tax, Natural Resource Royalties

Abstrak

Penelitian ini menganalisis pengaruh Pajak Bumi dan Bangunan (PBB) serta royalti sumber daya alam mineral dan batubara (SDA Minerba) terhadap Dana Bagi Hasil (DBH) di Kalimantan pada periode 2022–2024. Data yang digunakan adalah data sekunder dari laporan keuangan pemerintah daerah. Metode yang digunakan adalah regresi data panel dengan Model Efek Tetap, berdasarkan uji Chow dan Hausman. Hasil penelitian menunjukkan bahwa royalti Minerba berpengaruh signifikan terhadap DBH, sedangkan PBB Daerah tidak. Temuan ini mengindikasikan bahwa pendapatan dari sektor ekstraktif sangat mempengaruhi

kapasitas fiskal daerah di Kalimantan. Penelitian ini merekomendasikan pengoptimalan pemungutan PBB dan diversifikasi sumber pendapatan untuk memperkuat struktur fiskal yang berkelanjutan. Penelitian ini relevan untuk mengatasi ketimpangan fiskal antar daerah, terutama di daerah penghasil sumber daya alam.

Kata Kunci: *Dana Bagi Hasil, Pajak Bumi dan Bangunan, Royalti Sumber Daya Alam*

INTRODUCTION

Fiscal decentralization in Indonesia grants greater authority to local governments in managing revenue sources to finance development. One form of transfer from the central government to the regions is the Revenue Sharing Fund (Dana Bagi Hasil, DBH), which aims to reduce fiscal disparities and provide incentives for the management of regional potential. DBH consists of several main components, including revenue sharing from Land and Building Tax (PBB) and Natural Resources (SDA), particularly royalties from the mining and energy subsector (minerba).

Regional PBB is a relatively stable source of local revenue, but its potential has not been fully optimized in various regions, especially outside Java. Royalties from mineral and energy natural resources have become an important source of revenue for regions rich in natural resources, such as the provinces on the island of Kalimantan. Kalimantan, as one

of the national resource hubs, contributes a significant portion of Indonesia's coal and strategic mineral production. According to data from the Ministry of Energy and Mineral Resources (ESDM, 2023), more than 65% of national coal production comes from Kalimantan, making SDA royalties a key fiscal reliance for the provinces in this region.

The relative contribution of regional PBB and SDA royalties to the total DBH in each province has not been fully mapped empirically. Several studies indicate a high level of dependence on SDA royalties, making fiscal vulnerability significant during commodity price fluctuations (Kurniawan et al., 2021). On the other hand, PBB, as an asset-based tax, is considered more stable and sustainable, but its collection effectiveness remains a problem in many regions (Yustika & Yani, 2020).

Vertical fiscal transfers such as DBH are theoretically based on the principles of fairness and efficiency within the framework

of fiscal decentralization (Oates, 1999). Regions that contribute significantly to central government revenue should ideally receive a corresponding allocation in the form of revenue sharing funds. Empirical analysis of the influence of regional PBB and SDA royalties on DBH in Kalimantan is important to assess how well these fiscal instruments function.

Several recent studies have shown contradictory results regarding the influence of Revenue Sharing Funds (DBH) and Local Original Revenue (PAD) on regional spending, which can enrich the perspectives of previous studies by Ramadani and Safitri (2022) and Siregar and Nurhaliza (2023). Fatimah et al. (2022) found that PAD and General Allocation Funds (DAU) have a significant effect on regional spending in East Java Province, while DBH and Special Allocation Funds (DAK) did not have a significant effect. A different result was found by Rahmawatia et al. (2023) in Riau Province, which showed that PAD and the Revenue Sharing Fund, simultaneously, have a significant effect on regional spending, but only PAD showed a significant effect partially. Meanwhile, Haliku et al. (2025) in a study in Gorontalo Province found that DBH did not affect capital spending, while PAD, DAU, and DAK had a significant

negative effect. A study by Pratiwi et al. (2023) in West Nusa Tenggara Province also found that PAD had a positive and significant effect on capital spending, while the Revenue Sharing Fund did not show a significant effect. Suzanna (2021) in Banjarmasin City stated that PAD significantly influences the effectiveness of regional spending, while the Revenue Sharing Fund and other sources of income did not show a significant effect. Furthermore, Sumarni et al. (2024) in Mamasa Regency found that both DBH and PAD significantly influenced regional spending, but DAU and DAK had no significant effect. These findings indicate that the influence of DBH and PAD on regional spending is highly contextual and may differ depending on the fiscal structure and economic characteristics of each region.

This study aims to fill the gap in the literature with a more specific focus, namely, empirically analyzing the contribution of regional Land and Building Tax (PBB) and royalties from mineral and energy natural resources (SDA Minerba) to the Revenue Sharing Fund (DBH) across all provinces in Kalimantan. Unlike previous studies that tended to focus on the relationship between DBH or PAD and regional spending, this research focuses on the sources that form DBH itself. Using panel data from 2022 to

2024, this study is expected to provide a clearer picture of the role of each revenue source in the amount of DBH received by the regions. The importance of this research lies in its contribution to providing an empirical foundation for formulating more equitable and sustainable fiscal policies, especially in resource-rich regions like Kalimantan, which have long been the backbone of the national economy but face challenges of fiscal disparity among regions.

LITERATURE REVIEW

Revenue Sharing Fund (DBH)

The Revenue Sharing Fund (DBH) is a fiscal transfer mechanism from the central government to regional governments based on the realization of state revenues from taxes and natural resources collected within the respective regions. Its primary objective is to promote fiscal equity among regions and provide incentives for regional governments to manage and optimize their economic potential.

Oates' (1999) fiscal decentralization theory posits that vertical fiscal allocation should be aligned with regional contributions and needs. Regions contributing significantly to national revenues are justified in receiving a

proportionally larger share of the revenue-sharing funds. A study by Kurniawan et al. (2021) indicates a positive relationship between natural resource management and the amount of DBH received by local governments.

Land and Building Tax (PBB) for Regional Governments

The Land and Building Tax (PBB) is a local tax imposed on the ownership and/or utilization of land and/or buildings. Following the enactment of Law No. 28 of 2009, a portion of PBB was decentralized to regional governments (PBB-P2), while PBB for sectors such as plantations, forestry, and mining (PBB-P3) remained under central government authority. Regional governments receive a share of PBB as part of the DBH, based on proportions determined by the central government.

The effectiveness of PBB collection is highly dependent on fiscal capacity, the quality of tax object databases, and taxpayer compliance. Yustika and Yani (2020) noted that PBB-P2 faces administrative challenges and weak supervision, leading to its limited contribution to regional revenues. Research by Prasetyo and Nugroho (2021) found that PBB has a positive but statistically

insignificant effect on the size of DBH in several provinces outside Java.

Hypothesis 1 (H1): The Land and Building Tax (PBB) for Regional Governments influences the Revenue Sharing Fund (DBH).

Mineral and Energy Natural Resources (Minerba) Royalties

Royalties are payments made by mining companies to the state as compensation for the utilization of non-renewable natural resources. In the context of mineral and coal mining (minerba), royalties constitute a primary source of DBH for producing regions. The amount of royalties is determined by production volume and commodity reference prices.

Kalimantan is a major contributor to the national minerba sector, particularly coal. According to the Ministry of Energy and Mineral Resources (ESDM, 2023), over 65% of Indonesia's coal originates from Kalimantan provinces. Research by Ramadani and Safitri (2022) revealed that minerba royalties significantly contribute to DBH revenues in producing regions. Siregar and Nurhaliza (2023) emphasized the importance of fiscal diversification, as high

dependence on royalties leads to instability during commodity price fluctuations.

Hypothesis 2 (H2): Royalties from Mineral and Energy Natural Resources (Minerba) influence the Revenue Sharing Fund (DBH).

RESEARCH METHOD

This study employs a quantitative approach with a causal-comparative design. The research aims to determine the contribution of the Regional Land and Building Tax (PBB) and Royalties from Mineral and Energy Natural Resources (SDA Minerba) to the Revenue Sharing Fund (DBH) received by local governments. This explanatory research is designed to elucidate the relationships among variables by relying on numerical data and objective statistical testing (Sugiyono, 2021).

The study is conducted across all provinces on the island of Kalimantan, namely West Kalimantan, Central Kalimantan, South Kalimantan, East Kalimantan, and North Kalimantan. Each province serves as a cross-sectional unit in the panel data analysis. The study period encompasses the fiscal years 2022 to 2024, resulting in a total of 15 observations from 5 provinces over 3 years. The panel data approach is utilized as it offers

advantages in data variability and the ability to detect individual and time effects (Baltagi, 2008).

The research object is the DBH received by provincial governments, while the independent variables are the Regional PBB and SDA Minerba royalties. All data utilized are secondary, obtained from official government documents such as reports from the Directorate General of Fiscal Balance (DJPK) of each province.

Data collection instruments include documentation sheets used to record the realized values of regional PBB, SDA Minerba royalties, and DBH. Since the data are sourced from official government institutions that have undergone audit processes, the validity and reliability of the instruments are not specifically tested. The validity of the data is considered assured by the credibility of the data sources.

This study involves three main variables, one dependent variable and two independent variables, all measured in rupiah. The dependent variable is the Revenue Sharing Fund (DBH), which represents the amount of transfer funds from the central government to local governments. The first independent variable is the Land and Building Tax (PBB), which refers to local revenue from the

taxation sector on the ownership or utilization of land and buildings, specifically the Rural and Urban sector (PBB-P2). The second independent variable is the royalty revenue from the natural resources sector, specifically minerals and coal (Minerba). This variable measures the direct contribution of natural resource exploitation activities to DBH, particularly from mining commodities such as coal and metallic minerals.

Data analysis is performed using panel regression with EViews software. Three regression models are tested: Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). The selection of the best model is conducted through the Chow test to compare CEM and FEM, and the Hausman test to choose between FEM and REM. If necessary, the Lagrange Multiplier (LM) test is used to compare CEM and REM. Each model is evaluated based on statistical significance levels and the model's fit to the data.

Panel regression analysis results are evaluated based on t-statistic values for partial effects. Decisions are made based on probability values (p-value) with a significance level of 5% ($\alpha = 0.05$), which serves as the threshold to conclude whether the contributions of regional PBB and SDA

Minerba royalties to DBH are statistically significant.

Effect Test	Prob.
Cross-section Chi-square	0.0001

Source: Data Processing (2025)

RESEARCH RESULTS AND DISCUSSION

Selection of the Best Estimation Model

This study utilizes panel data from five provinces in Kalimantan over the period 2022 to 2024, aiming to analyze the contributions of the Regional Land and Building Tax (PBB) and royalties from Mineral and Energy Natural Resources (SDA Minerba) to the Revenue Sharing Fund (DBH). To determine the most appropriate estimation model, two primary tests were conducted: the Chow Test and the Hausman Test.

Chow Test

The Chow test is used to compare the Common Effect Model (CEM) with the Fixed Effect Model (FEM).

Table 1: Chow Test Results

The test result shows a Chi-square value with a probability of 0.0001. Since the probability value is smaller than the significance level of 5% (0.05), it can be concluded that the most appropriate model is the Fixed Effect Model. This means that the model needs to account for the fixed differences in characteristics between provinces in Kalimantan.

Hausman Test

Next, the Hausman Test is conducted to choose between the Fixed Effect Model and the Random Effect Model.

Table 2: Hausman Test Results

Test Summary	Prob.
Cross-section random	0.0000

Source: Data Processing (2025)

The test result shows a Chi-square value with a probability of 0.0000. This probability is also smaller than 0.05, so it can be concluded that the Fixed Effect Model is more appropriate for this study than the Random Effect Model.

Fixed Effect Model Estimation Results

After determining that the Fixed Effect Model is the most suitable model, an estimation was performed to analyze the effect of the independent variables, namely the Regional Tax (PBB) and mineral and energy resources royalties (SDA), on the dependent variable, the Revenue Sharing Fund (DBH). The estimation results are as follows:

Table 3: Hausman Fixed Effect Model
Estimation Results

Variable	Coefficient	Prob.	Conclusion
PBB	0.496	0.3316	H1 Rejected
SDA	0.997	0.0000	H2 Accepted

Source: Data Processing (2025)

The estimation results show that the royalties from mineral and energy resources (SDA) have a significant effect on the Revenue Sharing Fund (DBH), with a coefficient of 0.997 and a probability value of 0.0000 (< 0.05). This means that every one-unit increase in SDA royalties will increase the DBH by 0.997 units. This proves that SDA royalties are a dominant component in determining DBH in the provinces of Kalimantan.

On the other hand, the Regional Tax (PBB) has a coefficient of 0.496 with a probability value of 0.3316 (> 0.05), indicating that this

variable is not statistically significant. Although the direction of its effect is positive, an increase in PBB revenue cannot be consistently used as an indicator for increasing the Revenue Sharing Fund in Kalimantan.

Impact of Regional Tax (PBB) on Revenue Sharing Fund (DBH)

The analysis using the Fixed Effect Model shows that the Regional Tax (PBB) variable has a positive coefficient of 0.496, but it is not statistically significant with a p-value of 0.3316 (> 0.05). This indicates that the increase in revenue from the Regional Tax (PBB) has not been able to make a significant contribution to the increase in the Revenue Sharing Fund (DBH) received by local governments in Kalimantan during the 2022–2024 period.

This finding reflects the condition that the Regional Tax (PBB), as part of Local Revenue (PAD), does not directly play a role in the mechanism of DBH transfers, which primarily come from central government revenues such as national taxes and natural resource revenues. The low contribution of PBB to DBH may be due to weaknesses in tax collection administration, limited data on tax objects/subjects, and low taxpayer compliance (Yustika & Yani, 2020).

Additionally, other factors such as fiscal capacity and regional dependence on central transfers also affect this outcome.

Therefore, although the PBB is under the authority of local governments and has great potential to increase PAD, its contribution to DBH is not statistically significant.

Impact of Mineral and Energy Resource Royalties (SDA Minerba) on Revenue Sharing Fund (DBH)

In contrast to the Regional Tax (PBB), the mineral and energy resource royalties (SDA Minerba) variable shows a very strong and statistically significant impact on the Revenue Sharing Fund (DBH), with a coefficient of 0.997 and a p-value of 0.0000 (< 0.01). This indicates that an increase in revenue from natural resource royalties, especially from the mining and energy sectors (coal and minerals), directly and significantly impacts the increase in DBH.

This result supports the fiscal federalism theory proposed by Oates (1999), which suggests that resource-rich regions will receive larger transfers through the DBH mechanism. In regions like Kalimantan, where mineral and energy resources are a dominant sector, royalties contribute significantly to the fiscal capacity of the

region and are a key component in forming the DBH structure (Siregar & Nurhaliza, 2023).

This study aligns with the findings of Ramadani & Safitri (2022), which show that royalties have a positive and significant correlation with the amount of DBH in coal-producing regions. However, high dependence on royalties poses fiscal risks, particularly when global commodity prices fluctuate or production levels decrease.

Thus, this result emphasizes that mineral and energy resource royalties (SDA Minerba) are a dominant factor in the formation of DBH, while the Regional Tax (PBB) has not shown a significant contribution in the context of this study.

CONCLUSION AND RECOMMENDATIONS

Conclusion

The results of the study indicate a difference in the impact of the Regional Tax (PBB) and mineral and energy resource royalties (SDA Minerba) on the Revenue Sharing Fund (DBH) across all provinces in Kalimantan during the period of 2022 to 2024. The Regional Tax (PBB) does not have a

significant impact on DBH. This low contribution is suspected to be related to the weakness in the effectiveness of tax collection, limited fiscal capacity of the regions, and the structure of the DBH calculation, which does not directly link the Regional Tax (PBB) to the transfer amount from the central government.

In contrast, the royalties from mineral and energy resources (SDA Minerba) show a highly significant impact on DBH. This strong effect reflects Kalimantan's fiscal dependency on the extractive sector, particularly coal and mineral mining. An increase in royalties directly raises the DBH received by the regions, in accordance with the fiscal compensation principle in the fiscal decentralization system.

These empirical findings strengthen the argument that mineral and energy resource royalties are a strategic revenue source that significantly enhances the fiscal capacity of resource-producing regions.

Research Limitations

This study has several limitations that should be considered when interpreting the findings and drawing conclusions. First, the data used covers only the period from 2022 to 2024, which provides a relatively short time frame

to capture long-term dynamics, particularly those related to fluctuations in commodity prices and changes in central-regional fiscal policies. This temporal limitation may affect the depth of trend analysis and the generalizability of the results over time. Additionally, the study focuses solely on three variables—Revenue Sharing Fund (DBH), Land and Building Tax (PBB), and royalties from mineral and coal (Minerba)—which may not fully capture other important factors that influence DBH, such as changes in national transfer policies, local fiscal management capacity, or regional economic performance. The exclusion of these variables was primarily due to data availability constraints and the focus of the research objective. Future studies are encouraged to incorporate a broader set of variables and longer time series to produce more comprehensive and robust results.

Recommendations

There is a need to improve the regional capacity in managing and maximizing revenue from the Regional Tax (PBB). Local governments in Kalimantan should implement tax administration reforms, update tax object data, and conduct taxpayer education and enforcement to increase compliance. Optimizing the PBB can

strengthen Local Revenue (PAD) and reduce dependence on central government transfers.

The central government should design a more equitable DBH distribution policy, taking into account the long-term fiscal sustainability of resource-producing regions. Dependence on volatile royalties should be balanced with strengthening the fiscal capacity of regions through diversification of revenue sources.

Future research is recommended to include additional variables such as the General Allocation Fund (DAU), Special Allocation Fund (DAK), and Local Revenue (PAD) to provide a more comprehensive overview of the regional fiscal structure and the factors influencing vertical balance in the central-regional financial system.

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