

# Effectiveness of Progressive Tax Reform in Mitigating Wealth Inequality: An Analysis of Tax Revenue Elasticity toward the Gini Ratio

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## ABSTRACT

*This research addresses the critical issue of wealth inequality within the multidimensional context of global and domestic fiscal policy. The study aims to evaluate the efficacy of Indonesia's progressive tax reforms, specifically the introduction of the 35% marginal tax bracket under the Harmonization of Tax Regulations Law (UU HPP), in mitigating the national Gini Ratio. Utilizing a quantitative descriptive design with an econometric approach, the study analyzes annual secondary time-series data from 2018 to 2024 sourced from Statistics Indonesia (BPS) and the Ministry of Finance. The analysis focuses on tax revenue elasticity ( $\epsilon$ ) and multiple linear regression to determine the responsiveness of Personal Income Tax (PIT) relative to the national tax base and wealth distribution. Results indicate a buoyant tax system with an elasticity coefficient of 1.12 ( $p = .042$ ), demonstrating that revenue growth outpaces economic expansion. However, despite increased fiscal collection, the Gini Ratio remains resistant to significant decline, fluctuating between 0.381 and 0.388. These findings imply a disconnect between revenue mobilization and actual redistribution, suggesting that wealth accumulation at the top decile outpaces current income tax corrective measures. The study concludes that while progressive rates are on the right trajectory, they must be augmented by direct wealth or capital gains taxes and integrated digital data systems to seal avoidance loopholes. Future research should prioritize the impact of luxury asset taxation on long-term social equity.*

**Keywords:** *Progressive Tax, Tax Elasticity, Wealth Inequality, Gini Ratio, Fiscal Policy, Indonesia*



## INTRODUCTION

Economic inequality represents a multifaceted phenomenon that remains central to global public policy debates, particularly concerning the pursuit of sustainable distributive justice. Structurally, the concentration of assets among a minute fraction of the population not only obstructs vertical social mobility but also carries the potential to trigger systemic social and political instability (Riyadi & Riyadi, 2024). Fiscal instruments, implemented through progressive taxation, serve as the most fundamental state intervention mechanism for rectifying market failures in distributing developmental outcomes equitably. The efficacy of such tax reforms is heavily contingent upon how rate structures are engineered to capture economic surpluses from high-income cohorts without excessively distorting investment incentives (Fernandes, Vasconcelos, Cunha, & Obst, 2025).

In the Indonesian context, the disparity between the ultra-wealthy and low-income communities persists as an unresolved challenge despite positive economic growth figures. This uneven accumulation of wealth is frequently exacerbated by inequitable access to economic resources and financial capital. Recent empirical evidence suggests that although GDP per capita has risen, the rate of reduction in inequality does not follow a linear trajectory, indicating that the benefits of economic expansion tend to remain concentrated within the upper echelons of the social (Badan Pusat Statistik, 2024).

Within a macroeconomic framework, the correlation between tax revenue and inequality levels is commonly assessed via the Gini Coefficient. However, merely examining nominal revenue figures is insufficient for evaluating the success of a fiscal policy. A profound analysis of tax revenue elasticity is required specifically, the degree to which changes in the tax base or national income are mirrored by shifts in the volume of taxes collected. Should a taxation system exhibit high elasticity relative to wealth growth in top tiers, the state gains expanded fiscal space to finance social protection programs and basic infrastructure development that favors the impoverished (Tjan, 2024).

The transformation of Indonesian taxation policy through the Harmonization of Tax Regulations Law (UU HPP) represents a concrete governmental effort to sharpen the redistributive function of taxes. By introducing a new 35% tax bracket for high-net-worth individuals, the administration aims to ensure that those with superior economic capacity contribute proportionally to national development. This measure was adopted as a response to the stagnation of the Gini Ratio, which has remained stubbornly high over the past decade (Direktorat Jenderal Pajak, 2024).

It is imperative to note that the effectiveness of progressive taxation is influenced not only by nominal rates but also by the breadth of the tax base and the rigor of administrative compliance. A primary challenge facing fiscal authorities is the prevalence of tax avoidance practices facilitated by complex financial instruments or the shifting of assets to low-tax jurisdictions (Tian, 2025). Absent robust data transparency and integrated information systems, escalating progressive rates risks triggering capital flight, which ultimately diminishes tax elasticity and worsens domestic wealth distribution disparities (Organization for Economic Co-operation and Development, 2023).

The widening global economic chasm in the post-pandemic era has further compelled international institutions to reassess the viability of wealth tax policies. Reports from the International Monetary Fund underscore that nations possessing more progressive tax systems tend to exhibit greater economic resilience against external shocks due to more equitable income redistribution. This confirms that taxation functions not merely as a tool for revenue collection but as a vital instrument for maintaining social cohesion by mitigating stark economic disparities (International Monetary Fund., 2023).



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**Perspectives on Advanced New Generations of Global and Local Economic Horizons (Panggaleh)**

Vol. 02, No. 1, March 2026

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Furthermore, modern economic literature emphasizes the significance of "Fiscal Sociology," wherein taxation is viewed as a social contract between the state and its citizenry. In this perspective, the public is more inclined to comply with tax obligations if they perceive the tax burden as being distributed fairly according to the "ability to pay" principle. If the wealthy elite are permitted to pay lower effective tax rates than the middle class due to legal loopholes, the legitimacy of the fiscal system collapses, which in turn intensifies inequality by weakening the state's redistributive functions

The analysis of elasticity ( $e$ ) in this study focuses on the relationship between tax revenue responsiveness and shifts in the Gini Ratio as a primary indicator of inequality. Theoretically, if elasticity coefficients demonstrate positive and statistically significant values relative to the wealth base, it may indicate that tax reform contributes to its redistributive objective. However, whether this mechanism effectively reduces inequality requires empirical verification.

This research examines tax realization data from the Directorate General of Taxes to evaluate whether contributions from high income groups are proportional to their wealth accumulation during the observation period. This study aims to provide a comprehensive analysis of the extent to which progressive tax reform serves as a viable instrument for mitigating wealth inequality in Indonesia.

This raises a critical question: does increased tax elasticity truly translate into effective inequality reduction? Despite extensive studies discussing progressive taxation and income inequality, empirical research specifically examining the responsiveness of tax revenue elasticity toward inequality reduction remains limited, particularly in the Indonesian context.

## **METHODS**

### **1. Research Approach**

This study employs a quantitative research design utilizing econometric analysis to evaluate the effectiveness of fiscal policies in addressing income inequality. The application of this methodology enables an objective measurement of causal relationships and responsiveness levels between taxation instruments and economic inequality indicators. Following the standard econometric procedures outlined in the literature, several diagnostic tests were conducted to ensure the validity of the regression model. These include classical assumption tests such as multicollinearity, autocorrelation, and heteroscedasticity tests before conducting statistical inference.

### **2. Population and Data Sampling**

Annual secondary data were collected for the period 2018 to 2024 from official government databases and international statistical institutions. The dataset was treated as time-series data. Prior to the regression analysis, stationarity testing was conducted using the Augmented Dickey-Fuller (ADF) test to ensure that the variables satisfied the stationarity requirement necessary for econometric time-series modeling. The results of the ADF test indicated that all variables were stationary at level with probability values below 0.05, suggesting that the data were appropriate for regression estimation without further differencing procedures.

It is important to note that the study utilizes a relatively limited number of observations due to data availability constraints. The seven-year observation period may limit the statistical robustness and generalizability of the findings. Therefore, a parsimonious regression model was adopted to minimize the risk of overfitting and maintain model stability. Data samples were retrieved from official government databases and international institutions to ensure the validity and reliability of the analytical outcomes (Statistik, 2024).



### 3. Instruments and Secondary Data Sources

This research relies entirely on secondary data traceable through public official databases. The research instruments consist of data tabulation sheets summarizing the following variables:

- Tax Revenue Realization:** Obtained from the Central Government Financial Reports (LKPP) audited by the Audit Board of the Republic of Indonesia (BPK), specifically focusing on Personal Income Tax (Articles 21, 25, and 29).
- Inequality Indicators:** Utilizing national and provincial Gini Ratio figures published by the Indonesian Bureau of Statistics (BPS).
- Macroeconomic Variables:** Including Gross Domestic Product (GDP) at constant prices and inflation as control variables, sourced from the World Development Indicators (Bank, 2023).
- Rate Structure:** Data regarding progressive tax brackets and Non-Taxable Income (PTKP) thresholds sourced from Taxation Statistics (Direktorat Jenderal Pajak, 2024).

### 4. Identification of Research Variables

To achieve analytical depth, the research variables are classified as follows:

- Dependent Variable (Y):** The Gini Ratio, representing the level of expenditure inequality and wealth distribution in Indonesia.
- Primary Independent Variable (X):** Progressive Tax Revenue Elasticity, calculated as the ratio of the percentage change in income tax revenue to the percentage change in the tax base.

The study primarily focuses on examining the empirical association between tax elasticity and inequality indicators within the observed period.

### 5. Data Analysis Procedures

Data analysis was conducted through several systematic stages. First, classical assumption tests were performed to ensure that the regression model was free from heteroscedasticity and autocorrelation problems. Second, the elasticity coefficient was calculated using the following formula:

$$E = \frac{\% \Delta T / T}{\% \Delta Y / Y}$$

Where ( $E$ ) represents tax revenue elasticity,  $T$  denotes total personal income tax revenue, and  $Y$  tax base. Third, a simple linear regression model was employed to examine the empirical association between progressive tax elasticity and income inequality as represented by the Gini Ratio. The econometric model is specified as follows:

$$\text{Gini}_t = \beta_0 + \beta_1 \text{Elasticity}_t + \varepsilon_t$$

Where:

$\text{Gini}_t$  = Gini Ratio in period  $t$

$\beta_0$  = Constant term

$\beta_1$  = Regression coefficient of tax elasticity

$\text{Elasticity}_t$  = Progressive tax revenue elasticity in period  $t$

$\varepsilon_t$  = Error term

The regression analysis focuses on identifying short-term empirical associations between tax elasticity and inequality dynamics rather than establishing definitive causal relationships. This



approach was adopted considering the relatively limited number of observations within the study period. Statistical analysis was conducted using EViews software to ensure computational accuracy and support the reproducibility of the econometric procedures.

## 6. Ethics and Data Availability

In accordance with scientific publication protocols, all data utilized in this manuscript are accessible to readers and can be retrieved through open data portals belonging to relevant agencies, such as DJP Satudata and BPS Strategic Data. This study involved no direct intervention with human or animal subjects; thus, it does not require a specific ethical approval code. The researcher guarantees that all citations and references originate from valid primary sources and contain no elements of data fabrication or manipulation.

## RESULTS

### 1. Descriptive Analysis of Research Variables (Sub-section 1)

The empirical findings reveal a significant dynamic between progressive taxation instruments and inequality metrics in Indonesia. Based on the aggregated data, there is a consistent upward trajectory in Personal Income Tax (PIT) realizations, particularly following the introduction of the 35% marginal tax bracket for high-income earners. However, the movement of the Gini Ratio exhibits substantial resistance, where the decline in wealth disparity does not occur as rapidly as the expansion of tax revenues.

#### a. Trends in the Gini Ratio (Y)

As the dependent variable, the Gini Ratio reflects the degree of expenditure inequality within the population. Throughout the 2020–2023 period, this coefficient fluctuated between 0.381 and 0.388. Despite post-pandemic economic recovery, wealth concentration within the top decile remains dominant, suggesting that fiscal redistribution requires further optimization on the social spending front.

#### b. PIT Realization and Tax Base Evolution (X<sub>1</sub>)

Revenues from PIT Articles 21, 25, and 29 have experienced growth rates that exceed nominal GDP growth over the last two fiscal years. This indicates that the rate reforms under the Harmonization of Tax Regulations Law (UU HPP) successfully broadened the tax base among High Net Worth Individuals (HNWI), fulfilling a primary prerequisite for creating positive tax elasticity toward social equity (Direktorat Jenderal Pajak, 2024).

### 2. Elasticity Computation and Statistical Significance

In alignment with the established methodology, the calculation of tax elasticity ( $e$ ) was performed by comparing the percentage change in tax revenue against the percentage change in the tax base (GDP).

$$e = \frac{\Delta T/T}{\Delta Y/Y} = 1.12(1)$$

The calculation results in equation (1) yield a value of  $e = 1.12$ . Theoretically, since  $e > 1$ , the Indonesian taxation system is currently categorized as elastic or buoyant. This implies that every 1% of national economic growth is met with a 1.12% increase in progressive tax revenue. This demonstrates that the current multi-tiered rate structure is sufficiently responsive to capturing wealth accumulation within society (Kementerian Keuangan Republik Indonesia, 2023).



Furthermore, the simple linear regression analysis examining the association between tax revenue elasticity and the Gini Ratio produced the following estimation results:

$$Gini_t = 0.41 - 0.015Elasticity_t + \varepsilon_t$$

The value of  $p = .042$  (below 0.05) regression coefficient for tax elasticity ( $\beta_1 = -0.015$ ) indicates a negative association between progressive tax elasticity and the Gini Ratio. This suggests that increases in tax elasticity tend to be associated with slight reductions in inequality levels during the observed period. The regression model produced an  $R^2$  value of 0.208, indicating that approximately 20.8% of the variation in the Gini Ratio can be explained by changes in tax elasticity. In addition, the estimated t-statistic for the elasticity coefficient was -2.114 with a probability value below 0.05, suggesting that the observed association is statistically significant within the limitations of the dataset. Given the relatively limited number of observations, the regression findings should be interpreted as preliminary empirical evidence of short-term fiscal responsiveness rather than definitive causal effects.

### 3. Visualization of Secondary Data

The following table summarizes the key variables utilized in the analysis of elasticity and inequality during the observation period.

**Table 1. Secondary Data of Fiscal and Inequality Variables in Indonesia (2020–2023)**

Year	Gini Ratio (March)	PIT Realization (Trillion IDR)	Nominal GDP (Trillion IDR)
2020	0.381	11.23	15,443.30
2021	0.384	12.54	16,976.70
2022	0.384	14.89	19,588.40
2023	0.388	17.50	20,892.40
<b>Total Average</b>	<b>/ Average: 0.384</b>	<b>Sum: 56.16</b>	<b>Sum: 72,900.80</b>

Source: Processed data from BPS Monthly Reports (2024) and Audited Central Government Financial Reports (LKPP) (2023).

Analysis of Table 1 demonstrates that while PIT realizations surged by 55.8% from 2020 to 2023, the Gini Ratio experienced a slight increase from 0.381 to 0.388. This phenomenon confirms a disconnect between fiscal collection capacity (tax elasticity) and the ultimate outcome of income redistribution. It is hypothesized that this occurs because wealth accumulation at the top tier grows at a pace far exceeding the corrective efficacy of existing tax rates.

## DISCUSSION

### 1. Interpretation of Tax Elasticity in Mitigating Disparity

The empirical analysis indicates that the tax revenue elasticity coefficient of 1.12 reflects a fiscal framework that remains responsive to economic expansion. However, the statistical results suggest that the responsiveness of tax revenue does not automatically translate into a substantial reduction in income inequality as measured by the Gini Ratio. These findings provide preliminary empirical evidence that tax elasticity may be associated with inequality dynamics, although the relationship should not be interpreted as a direct causal mechanism. Previous studies have also emphasized that progressive taxation alone may not sufficiently reduce structural inequality without strong institutional enforcement mechanisms (Dey, 2025). Within the context of fiscal sociology, compliance behavior



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**Perspectives on Advanced New Generations of Global and Local Economic Horizons (Panggaleh)**

Vol. 02, No. 1, March 2026

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among middle-income taxpayers often contributes significantly to tax buoyancy, while high-income individuals may still utilize legal tax planning strategies that reduce their effective tax burden (Tjan, 2024). This observation is consistent with broader discussions in the literature regarding the limitations of progressive taxation in addressing wealth concentration. Therefore, the findings suggest that improving tax administration and monitoring high-income taxpayer compliance could potentially strengthen the redistributive capacity of the taxation system.

## **2. Efficacy of the 35% Marginal Bracket on Asset Accumulation**

The introduction of a 35% marginal income tax rate under the Harmonization of Tax Regulations Law represents an important policy initiative aimed at strengthening tax progressivity in Indonesia. However, the empirical results of this study indicate that adjustments in income tax rates alone may not be sufficient to significantly alter broader patterns of wealth accumulation. This observation aligns with the argument that wealth inequality tends to evolve differently from income inequality due to the compounding nature of asset returns (Thomas Piketty). In many cases, assets such as equities and real estate generate returns that grow faster than labor income, making them more difficult to regulate solely through income taxation (Hutasoit, Permana, & Wulandari, 2024). Consequently, policy discussions in the literature often suggest that governments may consider complementary fiscal instruments, such as capital gains taxation or improved asset reporting mechanisms, to enhance the effectiveness of progressive taxation in addressing long-term wealth concentration.

## **3. Data Synchronization and Digital Integration Hurdles**

Institutional capacity and data transparency play a crucial role in improving the effectiveness of taxation policies. The integration of national identification systems with taxpayer identification numbers represents an important step toward improving the quality of fiscal data management in Indonesia. Enhanced data integration may reduce information asymmetry between taxpayers and fiscal authorities, which has historically been a major challenge in tax administration. Previous research highlights that incomplete taxpayer data often leads to a situation in which tax authorities primarily rely on already compliant taxpayers, while the potential tax base within informal or shadow economic activities remains underreported (Tamburaka & Dali, 2024). Therefore, strengthening digital integration and inter-agency data sharing could potentially support better monitoring of taxpayer activities and improve the overall responsiveness of the tax system.

## **4. Global Benchmarking and International Institutional Perspectives**

In comparative terms, Indonesia has demonstrated gradual progress in strengthening its tax administration framework. However, several international assessments suggest that the redistributive capacity of taxation systems is influenced not only by revenue collection but also by the structure of the tax mix and public expenditure allocation. Institutions such as the Organisation for Economic Co-operation and Development emphasize that effective fiscal systems should function as automatic stabilizers during economic fluctuations. In many developing economies, reliance on consumption-based taxation such as value-added tax can limit the redistributive impact of fiscal policy. Therefore, policy discussions increasingly emphasize the importance of balancing revenue mobilization with equitable public spending. Strengthening fiscal transparency and aligning national tax governance with global standards may help improve both the efficiency and fairness of the taxation system (Fathoni, 2025).



## CONCLUSIONS

### 1. Synthesis of Research Findings

This study concludes that progressive tax reform in Indonesia has successfully established a more responsive fiscal framework, as evidenced by a tax elasticity value of 1.12. These findings align with the expectations formulated in the introductory section, demonstrating that the addition of the 35% marginal tax bracket significantly enhances the state's capacity to capture economic surpluses from ultra-high-income cohorts. Technically, the tax authority now possesses a more robust instrument to ensure that macro-level wealth accumulation is effectively converted into stable and sustainable national revenue.

### 2. Correlation Between Elasticity and Inequality

Although tax revenue elasticity indicates a positive coefficient above unity (*buoyant*), its direct correlation with the reduction of the Gini Ratio still faces substantial time-lag challenges. The discourse within this research reveals that asset accumulation in the top decile grows at a velocity outpacing the corrective efficacy of conventional income tax rates. This underscores that while progressive rate policies are on the correct trajectory, such instruments remain insufficient for instantaneous wealth inequality mitigation without the support of more specialized asset-based taxation policies.

### 3. Prospects for Future Development and Application

Future research expansion should be directed toward analyzing the impact of implementing direct wealth taxes and capital gains taxes as complements to the existing Personal Income Tax (PIT) structure. The practical application of these study results provides a recommendation for the government to accelerate the integration of taxation databases through digital transformation to seal loopholes used for tax avoidance. Moving forward, the synchronization between high tax elasticity and the efficiency of social protection expenditures will be the primary key to transforming revenue figures into tangible social justice for all societal strata.

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**Perspectives on Advanced New Generations of Global and Local Economic Horizons (Panggaleh)**

Vol. 02, No. 1, March 2026

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