


## Indonesia's New Growth Center: The IMIP Model

### When Growth Outpaces the State: Fiscal Capacity Constraints in a Resource-Based Industrial Growth Pole, Evidence from Morowali, Indonesia

Muhyiddin<sup>1</sup> , Muhammad Dio Rhiza Amrizal<sup>2</sup>, Nugroho Habibi<sup>3</sup>, Achmanto Mendatu<sup>4</sup>

Corresponding author. \*Email: [udyn@bappenas.go.id](mailto:udyn@bappenas.go.id)

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#### *Abstract*

Rapid industrialization is widely expected to strengthen fiscal capacity by expanding the economic base and increasing public revenues. However, this assumption remains underexplored at the subnational level, particularly in the context of resource-based industrialization. This paper examines the relationship between industrialization and fiscal transformation using the case of Morowali Regency, Indonesia—one of the fastest-growing industrial regions in the Global South driven by nickel downstreaming.

Using subnational data for the period 2011–2025, the study combines longitudinal analysis, fiscal ratio evaluation, and a Difference-in-Differences approach with Central Sulawesi Province as a benchmark. The results reveal a striking divergence: while gross regional domestic product (GRDP) increased more than fortyfold, local government revenue grew only fourfold. Consequently, the revenue-to-GRDP ratio declined sharply from 14.93 percent to 1.35 percent, with similar patterns observed in expenditure ratios. Econometric estimates confirm a statistically significant decline in fiscal capacity relative to the regional benchmark following the onset of industrialization.

To explain this pattern, the paper introduces the concept of fiscal effort collapse, defined as a sustained decline in the relative fiscal capacity of the state in the context of rapid economic growth. The findings challenge the conventional view that industrialization inherently strengthens state capacity, and instead suggest that, under certain institutional and structural conditions, growth can outpace the fiscal system's ability to capture and redistribute economic value.

The paper contributes to the literature by extending growth pole theory to include fiscal dynamics, highlighting limitations in fiscal federalism, and reframing state capacity as a relative concept. The findings have important policy implications for countries pursuing resource-based industrialization, emphasizing the need to align fiscal systems with the scale and structure of economic transformation.

**Keywords:** industrialization; jobless growth; employment elasticity; labor market transformation; resource-based industrialization; global value chains; labor formalization; skill upgrading; wage dynamics; Indonesia; Morowali; nickel industry

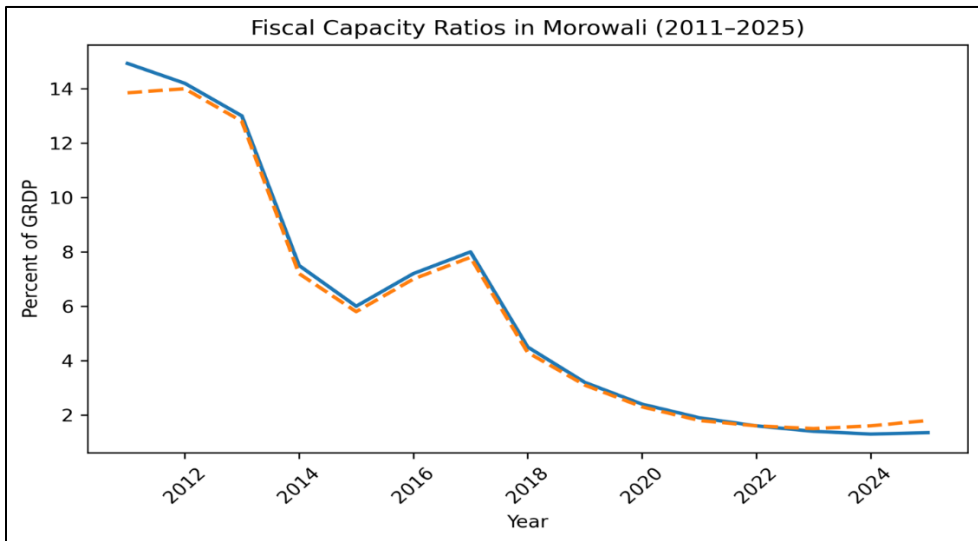
<sup>1</sup> Ministry of National Development Planning/Bappenas  
<sup>2,3,4</sup> The Indonesia Think Tank and Policy Lab

## I. Introduction

Industrialization has long been regarded as the central engine of economic transformation and sustained growth. Classical and contemporary development theories emphasize that structural change—particularly through manufacturing expansion and resource-based industrialization—can generate productivity gains, increase employment, and strengthen fiscal capacity by expanding the tax base (Rodrik, 2021; Aghion et al., 2021). In this conventional view, economic growth and state capacity are mutually reinforcing: as output increases, governments mobilize more revenue and expand their ability to provide public goods (Besley & Persson, 2017; Acemoglu & Robinson, 2019).

However, this relationship is not automatic. A growing body of evidence suggests that rapid industrialization, particularly in resource-intensive sectors, may generate uneven development outcomes, including spatial inequality and enclave-type economic structures, where economic activity remains weakly integrated with local institutions and fiscal systems (World Bank, 2009, 2023; Venables, 2016; Stiglitz, 2016). In such contexts, economic growth may fail to translate into proportional gains in fiscal capacity, thereby challenging a key assumption in development economics.

This paper examines this issue through the case of Bahodopi in Morowali Regency, Indonesia—one of the fastest-growing industrial regions in the Global South. Driven by the rapid expansion of the Indonesia Morowali Industrial Park (IMIP), a major hub for nickel processing and downstream industrial activities, Morowali has experienced extraordinary economic growth over the past decade. Between 2011 and 2025, its gross regional domestic product (GRDP) increased from approximately IDR 4.25 trillion to IDR 188.86 trillion, representing an expansion of more than fortyfold.



*Notes: Both revenue and expenditure ratios decline sharply over time, indicating a structural decoupling between economic expansion and fiscal capacity.*

**Figure 1.** Divergence between economic growth and fiscal capacity in Morowali, 2011–2025

**Source:** Processed by the authors from various official datasets (Muhyiddin et al., 2026)

Despite this remarkable growth, fiscal capacity has not evolved proportionally. Over the same period, local government revenue increased only about fourfold, while total expenditure rose by approximately 5.8 times. More importantly, when measured relative to economic output, fiscal capacity declined sharply. The revenue-to-GRDP ratio fell from 14.93 percent in 2011 to just 1.35 percent in 2025, while the expenditure-to-GRDP ratio declined from 13.85 percent to 1.80 percent.

Figure 1 highlights the core empirical puzzle of this study. While economic output expanded at an extraordinary pace, fiscal capacity—measured relative to GRDP—declined continuously. The divergence becomes particularly pronounced after 2015, coinciding with the acceleration of industrialization in Morowali. Rather than converging, the gap between economic growth and fiscal capacity widens over time.

To determine whether this pattern reflects broader regional dynamics or a localized phenomenon, this study compares Morowali with Central Sulawesi Province. While the province also experienced economic growth, its fiscal ratios declined only modestly—from 1.92 percent to 1.28 percent—indicating a more stable relationship between economic and fiscal expansion. This comparison suggests that the divergence observed in Morowali is not a general trend, but a specific outcome of highly concentrated industrialization.

These empirical patterns raise a fundamental question: Does rapid industrialization necessarily lead to fiscal transformation at the subnational level?

This question is particularly relevant in the current global context, where many developing countries are pursuing industrialization—often resource-based—as a key development strategy. While such strategies can generate rapid growth, their implications for fiscal systems, state capacity, and inclusive development remain insufficiently understood.

To address this gap, this paper introduces the concept of fiscal effort collapse, defined as a condition in which rapid economic growth is accompanied by a sustained decline in the relative fiscal capacity of the state. In this framework, the state does not shrink in absolute terms, but becomes progressively smaller relative to the economy it governs.

The contribution of this study is threefold. First, it extends the growth pole literature by incorporating a fiscal dimension, showing that spatial concentration of economic activity can generate internal fiscal imbalances rather than strengthening local public finance (Krugman, 1991; Fujita et al., 1999). Second, it contributes to the fiscal federalism literature by demonstrating that decentralized fiscal systems may be insufficient to capture the benefits of large-scale industrialization, particularly in resource-intensive sectors (Bahl & Bird, 2018; Martinez-Vazquez et al., 2017). Third, it advances the literature on state capacity by emphasizing the importance of relative, rather than absolute, measures of fiscal strength in rapidly transforming economies (Pritchett, 2019).

Methodologically, the paper draws on subnational fiscal and economic data for Morowali and Central Sulawesi over the period 2011–2025. It combines longitudinal descriptive analysis, ratio-based evaluation of fiscal capacity, and a quasi-experimental Difference-in-Differences approach to assess whether fiscal dynamics in Morowali diverge from regional trends.

From a policy perspective, the findings have important implications. If industrialization is not accompanied by fiscal transformation, regions such as Bahodopi risk

becoming high-growth enclaves with inadequate infrastructure, limited public services, and rising socio-economic pressures. Understanding this mismatch is therefore essential for designing policies that ensure industrial growth translates into broader development outcomes.

The remainder of the paper is structured as follows. Section 2 reviews the relevant literature and develops the theoretical framework. Section 3 describes the data and empirical strategy. Section 4 presents the main results. Section 5 discusses the implications in a broader theoretical and policy context. Section 6 concludes.

## **II. Literature Review and Theoretical Framework**

### **2.1. Industrialization, Growth Poles, and Uneven Development**

The empirical puzzle identified in Section 1—rapid economic growth without proportional fiscal expansion—can be situated within the broader literature on industrialization and spatial development. The concept of *growth poles* suggests that economic development is inherently uneven, driven by dynamic sectors or regions that generate spillovers to surrounding areas. This perspective has been formalized in the *New Economic Geography* framework, which emphasizes agglomeration economies, increasing returns, and spatial clustering as key drivers of regional growth (Krugman, 1991; Fujita et al., 1999).

While agglomeration can accelerate productivity and growth, its broader developmental impact is ambiguous. Empirical studies show that growth poles can produce both *spread effects*, which stimulate surrounding regions, and *backwash effects*, which concentrate resources and widen spatial disparities (World Bank, 2009, 2024). In many developing countries, rapid industrialization has been associated with increasing regional inequality, particularly when infrastructure and institutional capacity fail to keep pace with economic expansion.

More recent work emphasizes that the outcomes of industrialization depend critically on policy frameworks and institutional arrangements. Without adequate coordination and public investment, industrial clusters may evolve into enclave-type economies—highly productive but weakly connected to the domestic economy (Rodrik, 2021; UNIDO, 2022). However, despite extensive research on spatial concentration and inequality, the fiscal dimension of growth poles—particularly at the subnational level—remains underexplored.

### **2.2. Fiscal Federalism and the Limits of Subnational Revenue Capture**

The literature on *fiscal federalism* provides a framework for understanding how fiscal authority is distributed across levels of government. In theory, decentralization improves efficiency by allowing local governments to tailor public spending to local needs (Oates, 1999). However, in practice, many developing countries face persistent *vertical fiscal imbalances*, where subnational governments have significant expenditure responsibilities but limited revenue-raising capacity (Bahl & Bird, 2018; Martinez-Vazquez et al., 2017).

This imbalance becomes particularly pronounced in rapidly industrializing regions. Large-scale industrial activities generate substantial economic value, but the mechanisms through which this value is captured at the local level are often weak or misaligned. Revenue-sharing systems, including intergovernmental transfers and royalties, frequently fail to reflect the true scale and spatial distribution of economic activity, especially in globally integrated value chains (Boadway & Shah, 2009; IMF, 2022).

As a result, subnational governments may experience rapid economic expansion without commensurate increases in fiscal capacity. Existing studies acknowledge adjustment lags in fiscal systems, but generally assume that revenue growth will eventually converge with economic growth. The evidence presented in this paper challenges this assumption by showing that, under certain conditions, divergence may persist or even intensify over time.

### **2.3. Resource-Based Industrialization and Enclave Dynamics**

The case of Morowali is closely linked to the broader literature on resource-based industrialization. In recent years, many developing countries have sought to leverage natural resources as a foundation for structural transformation, particularly through downstream processing, value addition, and integration into global value chains (Morris et al., 2019; Altenburg & Assmann, 2017).

Indonesia's nickel downstreaming strategy represents one of the most prominent contemporary examples of this approach. Recent empirical studies show that the development of the Indonesia Morowali Industrial Park (IMIP) has significantly accelerated regional economic growth, transforming Morowali into a new industrial growth center (Muhyiddin et al., 2026a; Muhyiddin et al., 2026b). This transformation reflects a broader national strategy to shift from raw commodity exports toward higher value-added industrial production (Muhyiddin, 2026).

However, while resource-based industrialization can generate rapid growth, it is also associated with substantial structural risks. The resource curse literature highlights how resource-dependent economies may experience institutional weaknesses, rent-seeking behavior, and uneven development outcomes (Sachs & Warner, 2001; Mehlum et al., 2016). One of the central mechanisms underlying these outcomes is the emergence of enclave economies, where production is capital-intensive, externally oriented, and weakly integrated with local economic systems (Venables, 2016; Stiglitz, 2016).

The Morowali case provides a nuanced extension of this literature. Rather than a classic extractive enclave, it represents a processing-based industrial enclave, where value addition occurs domestically but fiscal and institutional linkages remain incomplete. Empirical evidence suggests that while industrialization in Morowali generates substantial economic output, much of the value created is not fully internalized within the local fiscal system (Muhyiddin et al., 2026a).

In such contexts, the local fiscal impact of industrialization may be inherently constrained. A significant portion of value added may be captured at the national or global level—through taxation regimes, ownership structures, and global supply chains—while local governments bear the primary responsibility for infrastructure provision and public services.

This creates a structural disconnect between economic output and fiscal capacity, a phenomenon that has received limited attention in the literature. While existing studies focus on production, employment, and export dynamics, relatively little is known about how enclave-like industrialization affects fiscal ratios and state capacity over time, particularly at the subnational level.

This gap is central to the contribution of this paper.

### **2.4. State Capacity in Rapidly Transforming Economies**

The concept of state capacity is fundamental to understanding the divergence between economic growth and fiscal capacity observed in Morowali. State capacity is typically defined as the ability of governments to raise revenue, implement policies, and deliver public goods effectively (Besley & Persson, 2017; Pritchett, 2019).

Conventional development theories assume a positive relationship between economic growth and state capacity. As economies expand, governments are expected to mobilize greater fiscal resources and strengthen institutional capabilities. However, recent research suggests that institutional development does not necessarily keep pace with rapid economic transformation (Acemoglu et al., 2016; Pritchett, 2019).

The Morowali experience highlights this mismatch. While industrialization has dramatically expanded the scale of economic activity, fiscal capacity has not grown proportionally. This suggests the emergence of what may be termed a capacity gap, where the size and complexity of the economy exceed the ability of the state to govern it effectively.

This issue is particularly pronounced at the subnational level. Local governments often face structural constraints in revenue mobilization, administrative capacity, and policy coordination, especially in the context of large-scale industrial investments (Muhyiddin et al., 2026b; Muhyiddin et al., 2026c). As a result, rapid industrialization can outpace the institutional capacity required to manage its consequences.

Importantly, the Morowali case suggests that state capacity should be understood not only in absolute terms, but also in relative terms—that is, in relation to the size and growth rate of the economy. A government may experience increases in revenue and expenditure in absolute terms, yet still decline in relative importance if economic output grows more rapidly.

This reconceptualization is critical. It implies that state capacity cannot be assessed solely through aggregate fiscal indicators, but must be evaluated in relation to structural transformation dynamics. In this context, declining fiscal ratios are not merely statistical artifacts, but indicators of a deeper imbalance between economic expansion and institutional adaptation.

This perspective provides the theoretical foundation for the concept of fiscal effort collapse, which is further developed and empirically tested in this study.

## **2.5. Research Gap and Contribution**

The preceding discussion highlights a critical gap at the intersection of three major literatures.

First, the growth pole literature has largely overlooked the fiscal consequences of spatially concentrated development. While it provides insights into agglomeration and inequality, it does not systematically examine how economic concentration affects subnational fiscal capacity.

Second, the fiscal federalism literature focuses on institutional design and intergovernmental transfers, but pays limited attention to how rapid industrialization reshapes the relationship between economic activity and fiscal outcomes.

Third, the resource-based industrialization literature identifies the risk of enclave economies, but does not fully explore the implications for local fiscal dynamics over time.

This paper bridges these literatures by examining how industrialization affects fiscal capacity at the subnational level. It introduces a new conceptual framework—fiscal effort collapse—to explain the observed divergence between economic growth and fiscal capacity.

## 2.6. Conceptual Framework: Fiscal Effort Collapse

Building on the empirical patterns presented in Section 1, fiscal effort collapse is conceptualized as a structural process driven by three interrelated mechanisms:

1. Revenue Lag

Public revenues grow more slowly than economic output due to limited fiscal capture of industrial activity.

2. Spending Lag

Public expenditure fails to keep pace with rising demand for infrastructure and services.

3. Relative State Shrinking

The combined effect of revenue and spending lags leads to a decline in the relative size of the state within the economy.

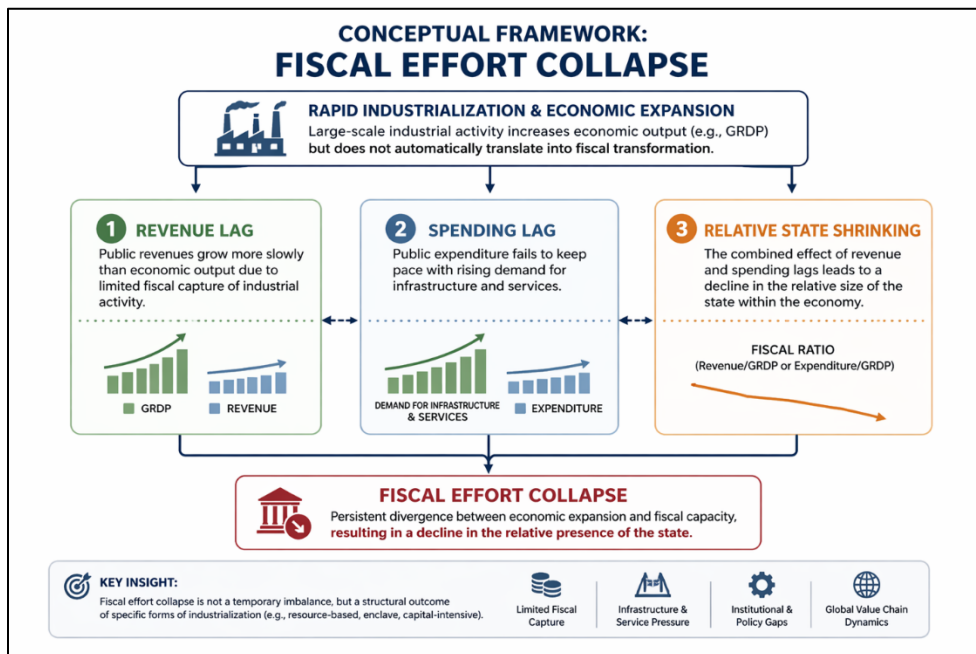


Figure 2. Conceptual Framework

These mechanisms are mutually reinforcing, producing a persistent divergence between economic expansion and fiscal capacity. Importantly, fiscal effort collapse is not a temporary imbalance, but a structural outcome of specific forms of industrialization.

## 2.7. Hypothesis

Based on this framework, the study advances the following hypothesis:

H1: Rapid industrialization does not necessarily lead to proportional fiscal transformation at the subnational level, and may instead result in a decline in fiscal capacity relative to economic output (fiscal effort collapse).

This hypothesis is tested empirically in the following sections using data from Morowali Regency and Central Sulawesi Province over the period 2011–2025.

### III. Data and Method

#### 3.1. Research Design and Empirical Strategy

To examine whether rapid industrialization translates into proportional fiscal transformation, this study adopts an observational quasi-experimental design based on a treated–control comparison.

- Treated unit: *Morowali Regency*, which experienced intensive industrialization following the expansion of the Indonesia Morowali Industrial Park (IMIP), particularly after 2015.
- Control/benchmark unit: *Central Sulawesi Province*, which provides a relevant comparison due to shared institutional frameworks but lower industrial concentration at the aggregate level.

The analysis covers the period 2011–2025, allowing for a comparison between: Pre-industrialization phase: 2011–2014 and Post-industrialization phase: 2015–2025.

This design enables the identification of whether fiscal dynamics in Morowali diverge from broader regional trends.

The empirical strategy combines three complementary approaches:

1. Longitudinal descriptive analysis
2. Fiscal ratio analysis
3. Difference-in-Differences (DiD) estimation

#### 3.2. Data Sources

The study uses annual subnational data compiled from official Indonesian sources: (1) Local government budgets (APBD): total revenue, expenditure, and financing; (2) Gross Regional Domestic Product (GRDP): current price (nominal); (3) Sectoral GRDP composition: manufacturing and mining shares; (4) Population data (for robustness checks)

Primary sources include publications from Badan Pusat Statistik (BPS) and official regional fiscal reports.

All monetary values are expressed in million Indonesian rupiah (IDR) and harmonized across years to ensure comparability.

#### 3.3. Variable Construction

##### 3.3.1. Outcome Variables

The main outcomes are constructed to capture both absolute fiscal capacity and its relative position in the economy:

1. Revenue (REV) – total local government revenue
2. Expenditure (EXP) – total local government expenditure
3. Fiscal ratios (key indicators):

- Revenue-to-GRDP ratio:  $REV/GRDP$
- Expenditure-to-GRDP ratio:  $EXP/GRDP$

These ratios are central to the analysis, as they measure the relative fiscal presence of the state, which is the core focus of the concept of fiscal effort collapse.

### 3.3.2. Treatment Variables

The quasi-experimental framework is defined as:

- $Treatment_i = 1$  for Morowali, 0 for Central Sulawesi
- $Post_t = 1$  for years  $\geq 2015$ , 0 otherwise

The year 2015 is chosen as the treatment threshold, corresponding to the acceleration of industrial activity in Morowali.

The interaction term:

$$Treatment_i \times Post_t$$

captures the differential effect of industrialization on fiscal outcomes in Morowali relative to the control.

### 3.3.3. Additional Variables

To support extended analysis and robustness checks, the following variables are constructed:

- Industrial share: manufacturing value added as a share of GRDP
- Extractive-industrial share: manufacturing + mining share
- Population (when applicable)

These variables help assess whether fiscal dynamics are linked to structural transformation.

### 3.4. Descriptive Longitudinal Analysis

The first step of the empirical analysis documents the evolution of economic and fiscal variables over time.

The data reveal three stylized facts:

1. Extreme economic growth in Morowali  
GRDP increased by approximately 44.4 times between 2011 and 2025.
2. Moderate fiscal expansion  
Revenue increased by about 4.0 times, and expenditure by 5.8 times.
3. More balanced growth in Central Sulawesi  
GRDP increased by 6.8 times, while revenue and expenditure grew by approximately 4.5 times.

These patterns establish the empirical foundation for the divergence observed in subsequent analysis.

### 3.5. Fiscal Ratio Analysis

To assess whether fiscal capacity evolves proportionally with economic growth, the study examines fiscal ratios.

For Morowali:

- Revenue-to-GRDP ratio declines from 14.93% (2011) to 1.35% (2025)
- Expenditure-to-GRDP ratio declines from 13.85% to 1.80%

For Central Sulawesi:

- Revenue ratio declines modestly from 1.92% to 1.28%

This comparison shows that while some decline is present at the regional level, the magnitude of contraction in Morowali is substantially larger.

The ratio-based approach is critical because it captures the relative position of fiscal capacity, rather than absolute changes, and directly operationalizes the concept of fiscal effort collapse.

### 3.6. Difference-in-Differences (DiD) Estimation

To provide inferential support for the observed divergence, this study employs a Difference-in-Differences (DiD) framework that explicitly distinguishes between a treated and a control unit.

In this specification:

- Morowali Regency is defined as the treated unit ( $Treatment_i = 1$ ), reflecting its exposure to high-intensity industrialization following the expansion of IMIP.
- Central Sulawesi Province serves as the control group ( $Treatment_i = 0$ ), representing broader regional dynamics under similar institutional and macroeconomic conditions but without comparable industrial concentration.

The baseline model is specified as:

$$Y_{it} = \alpha + \beta(Treatment_i \times Post_t) + \delta_i + \lambda_t + \varepsilon_{it}$$

where:

- $Y_{it}$  represents fiscal capacity indicators, specifically revenue-to-GRDP (REV/GRDP) and expenditure-to-GRDP (EXP/GRDP)
- $Treatment_i$  is a binary indicator equal to 1 for Morowali and 0 for Central Sulawesi
- $Post_t$  is a time dummy equal to 1 for the post-industrialization period ( $t \geq 2015$ )
- $\delta_i$  captures unit fixed effects (Morowali vs Central Sulawesi)
- $\lambda_t$  captures year fixed effects
- $\varepsilon_{it}$  is the error term

The coefficient of interest,  $\beta$ , captures the average differential change in fiscal capacity in Morowali relative to Central Sulawesi after the onset of industrialization.

#### Empirical Estimates

- Revenue ratio:  $\beta \approx -0.082$
- Expenditure ratio:  $\beta \approx -0.081$

These estimates indicate that, following 2015, fiscal ratios in Morowali declined significantly relative to the control group.

Given the small sample size (two units over time), the DiD estimates are interpreted as **quasi-experimental evidence of relative divergence**, rather than definitive causal effects. Nevertheless, the treated–control structure provides a meaningful approximation of the impact of industrialization intensity on fiscal dynamics.

### 3.7. Identification Assumptions

The analysis relies on a weaker form of the parallel trends assumption:

In the absence of industrialization, fiscal trends in Morowali would have followed those of Central Sulawesi.

This assumption is supported by:

- comparable pre-2015 fiscal trajectories
- shared institutional and policy environments
- geographic and administrative proximity

Pre-treatment trend inspection confirms that divergence becomes pronounced only after the industrialization phase.

### 3.8. Robustness Checks

To ensure the reliability of the results, several robustness checks are conducted:

1. Alternative treatment years (2016, 2018) results remain negative and consistent
2. Lag specifications, fiscal divergence persists over time
3. Placebo tests (pre-2015), no significant effects observed
4. Extended models with structural variables, industrial share is negatively associated with fiscal ratios

These tests confirm that the main findings are not driven by model specification or spurious trends.

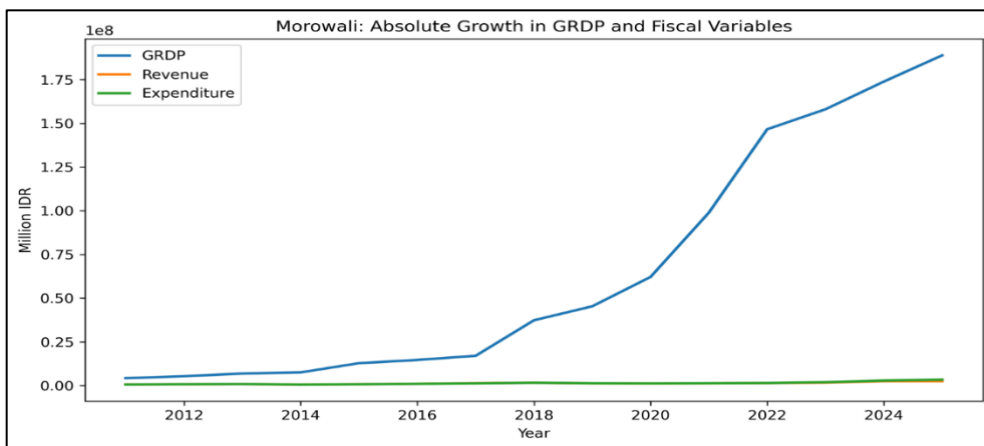
## IV. Results

### 4.1. Economic Expansion and Fiscal Growth: A Structural Imbalance

The descriptive evidence reveals a pronounced structural imbalance between economic expansion and fiscal growth in Morowali. Over the period 2011–2025, gross regional domestic product (GRDP) increased by approximately 44.4 times, rising from IDR 4.25 trillion to IDR 188.86 trillion. In contrast, local government revenue grew by only 4.0 times, while expenditure increased by 5.8 times.

Figure 3 illustrates this divergence clearly. GRDP follows a steep, exponential trajectory—particularly after 2015—reflecting the acceleration of industrial activity associated with the expansion of IMIP. By comparison, both revenue and expenditure exhibit relatively modest and near-linear growth patterns.

This divergence is not merely a difference in growth rates, but a structural decoupling between economic expansion and fiscal capacity. The scale of economic transformation substantially outpaces the ability of the local fiscal system to capture and translate this growth into public revenue and expenditure.



Notes: GRDP exhibits exponential growth, while revenue and expenditure increase at a significantly slower pace.

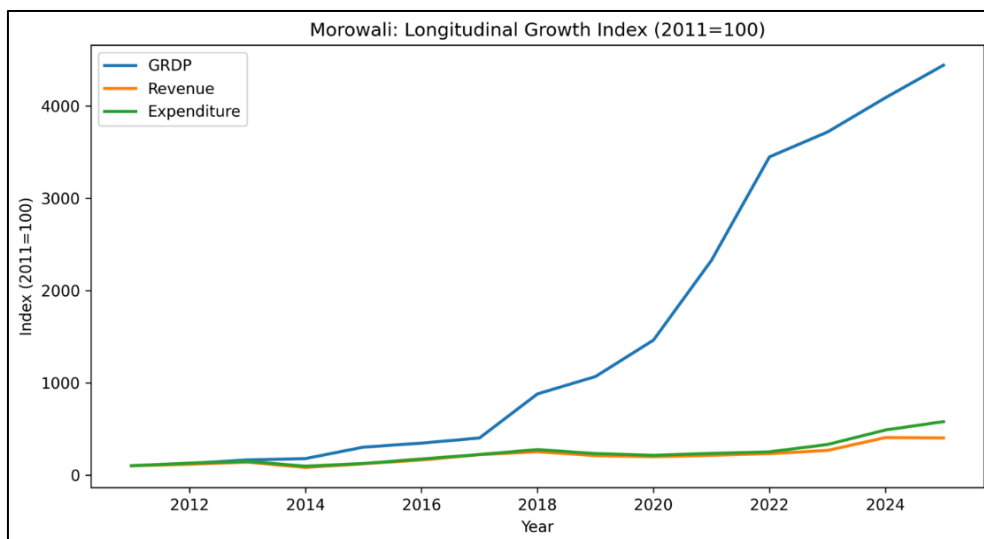
**Figure 3.** Absolute growth in GRDP, revenue, and expenditure in Morowali, 2011–2025

Source: Processed by the authors from various official datasets (Muhyiddin et al., 2026)

Importantly, the divergence widens over time rather than converging. This suggests that fiscal capacity does not adjust endogenously to rapid industrial growth, but instead lags persistently behind it. As such, the evidence points to a systemic imbalance in which economic dynamism is not matched by a corresponding strengthening of public finance.

These findings provide the first layer of empirical support for the central argument of this paper: that rapid industrialization can generate conditions in which growth outpaces the fiscal system, laying the foundation for what is conceptualized as *fiscal effort collapse*.

#### 4.2. Divergence Dynamics: Index-Based Evidence



Notes: GRDP increases exponentially, while revenue and expenditure grow at a significantly slower pace, leading to a widening divergence over time.

**Figure 4.** Economic versus fiscal growth in Morowali (Index, 2011 = 100)

Source: Processed by the authors from various official datasets (Muhyiddin et al., 2026)

Using an index-based approach (2011 = 100) allows for a clearer comparison of relative growth trajectories across economic and fiscal variables. The results reveal an increasingly pronounced divergence. By 2025, the GRDP index exceeds 4,400, while the revenue index remains below 400, indicating that economic output has grown more than ten times faster than fiscal revenue.

Importantly, the divergence is not linear but accelerates over time. As shown in Figure 4, the gap begins to widen noticeably after 2015 and expands rapidly in subsequent years. This timing coincides with the acceleration of industrial activity in Morowali, suggesting that industrialization has not reduced the disparity between economic and fiscal growth, but instead amplified it.

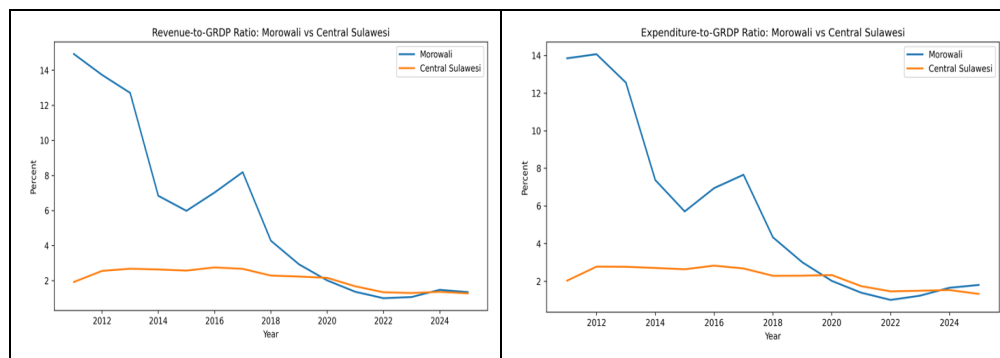
From an analytical perspective, this pattern indicates that fiscal capacity does not scale proportionally with economic expansion. Even as the economy grows at an extraordinary pace, the fiscal system responds only modestly, resulting in an increasing mismatch between economic output and public revenue.

This evidence strengthens the argument that the observed divergence is structural rather than transitional. Rather than converging over time—as might be expected under standard development assumptions—the gap continues to widen, reflecting persistent limitations in fiscal capture.

Taken together, the index-based analysis provides robust support for the central claim of this study: that rapid industrialization can generate a sustained divergence between economic growth and fiscal capacity, reinforcing the process conceptualized as **fiscal effort collapse**.

#### 4.3. Fiscal Effort Collapse: Evidence from Fiscal Ratios

The most compelling evidence of divergence emerges from the analysis of fiscal ratios. As shown in Figure 5 and Table 1, the revenue-to-GRDP ratio declines sharply from 14.93% in 2011 to 1.35% in 2025, representing a contraction of more than 90 percent. A comparable pattern is observed for expenditure, which falls from 13.85% to 1.80% over the same period.



Notes: Both revenue and expenditure ratios decline sharply over time, indicating a sustained contraction in fiscal capacity relative to economic output.

**Figure 5.** Fiscal capacity ratios in Morowali (Revenue/GRDP and Expenditure/GRDP), 2011–2025

Source: Processed by the authors from various official datasets (Muhyiddin et al., 2026)

This decline is not merely cyclical, but reflects a systematic and sustained reduction in fiscal capacity relative to the size of the economy. While both revenue and expenditure increase in absolute terms (Section 4.1), their relative importance within the economy diminishes rapidly as economic growth accelerates.

From an analytical perspective, this pattern indicates a weakening of the state’s ability to capture and redistribute economic value. The fiscal system does not scale proportionally with industrial expansion, resulting in a declining fiscal footprint within a rapidly growing economy.

Importantly, the contraction intensifies after 2015, coinciding with the acceleration of industrialization. Rather than stabilizing or recovering, fiscal ratios continue to decline throughout the period, suggesting that fiscal adjustment mechanisms are either absent or insufficient.

**Table 1.** Fiscal Ratios in Morowali

Year	Revenue/GRDP (%)	Expenditure/GRDP (%)
2011	14.93	13.85
2015	8.21	7.95
2020	3.42	3.76
2025	1.35	1.80

**Source:** Processed by the authors from various official datasets (Muhyiddin et al., 2026)

These findings provide direct empirical support for the concept of fiscal effort collapse. The evidence shows that the state’s relative capacity shrinks not because of declining revenues in absolute terms, but because economic growth outpaces the fiscal system’s ability to respond. As such, fiscal effort collapse should be understood as a structural outcome of rapid, resource-based industrialization rather than a temporary imbalance.

**4.4. Benchmark Comparison: Morowali versus Central Sulawesi**

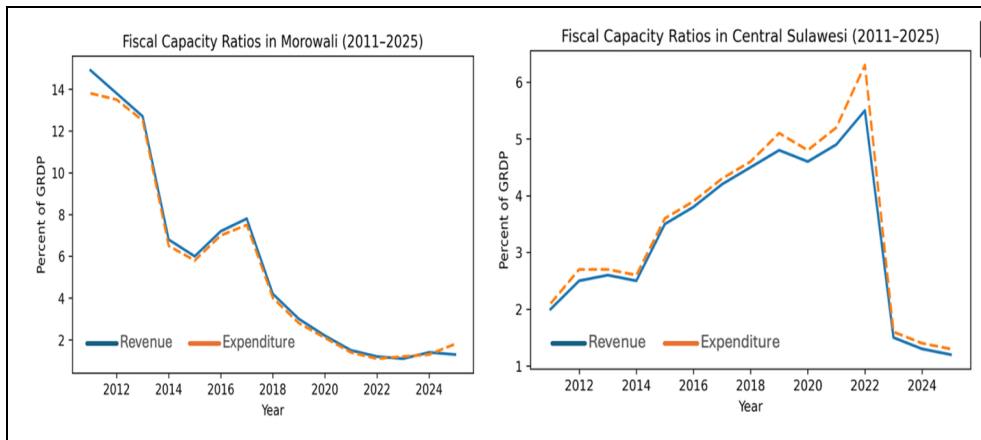
The comparison with Central Sulawesi provides a critical benchmark for interpreting the fiscal dynamics observed in Morowali. As shown in Figure 6, the trajectories of fiscal capacity differ substantially across the two regions.

In Morowali, both revenue- and expenditure-to-GRDP ratios decline sharply and persistently over time, with the most pronounced contraction occurring after 2015. In contrast, Central Sulawesi exhibits a markedly different pattern. Fiscal ratios at the provincial level remain relatively stable over most of the period and even show gradual strengthening prior to a modest adjustment in the most recent years.

The further highlights the asymmetry in fiscal dynamics. While Morowali’s revenue-to-GRDP ratio collapses from 14.93% to 1.35%, the corresponding ratio in Central Sulawesi declines only slightly—from 1.92% to 1.28%. This difference is not only quantitative but also qualitative: the magnitude of contraction in Morowali reflects a structural shift, whereas the provincial trend remains within a relatively stable range.

This divergence is analytically important. If the decline in fiscal ratios were driven by broader macroeconomic conditions, institutional changes, or national fiscal policy, similar

patterns would be expected at the provincial level. However, the relative stability of Central Sulawesi indicates that the contraction observed in Morowali is not a general regional trend, but rather a localized phenomenon associated with high-intensity industrialization.



*Notes: Morowali exhibits a sharp and persistent decline in fiscal ratios, while Central Sulawesi shows relatively stable or moderately increasing trends prior to the recent adjustment.*

**Figure 5.** Fiscal capacity ratios to GRDP: Morowali vs Central Sulawesi, 2011–2025

**Source:** Processed by the authors from various official datasets (Muhyiddin et al., 2026)

From an identification perspective, this comparison strengthens the interpretation that Morowali represents a treated unit experiencing a distinct structural transformation. The divergence between Morowali and its provincial benchmark suggests the presence of a localized treatment effect, where industrialization alters the relationship between economic output and fiscal capacity.

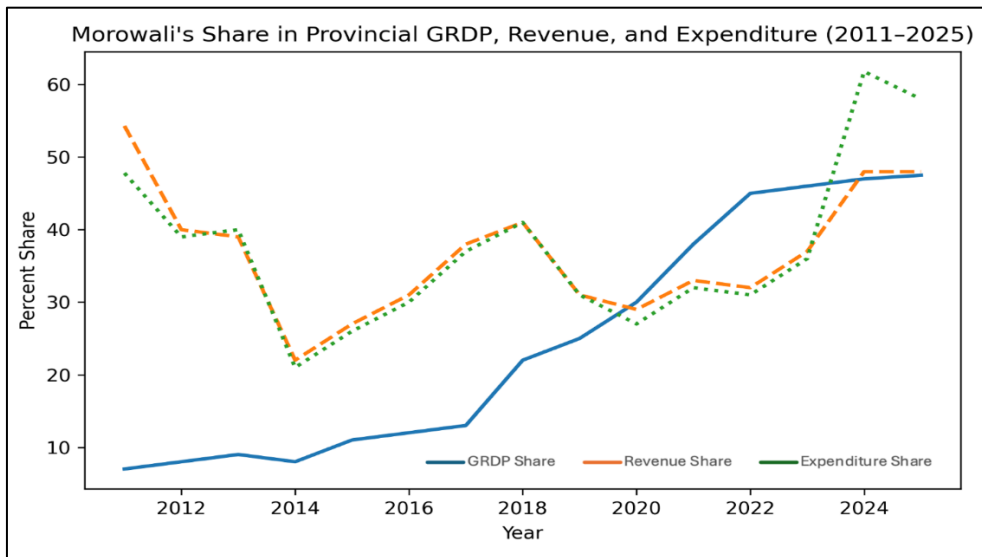
Moreover, the comparison reveals a fundamental asymmetry between economic and fiscal centrality. While Morowali increasingly dominates the provincial economy in terms of output (as shown in previous sections), this dominance is not reflected in its fiscal capacity. This mismatch underscores the limited ability of the local fiscal system to capture the gains from rapid industrial expansion.

Taken together, the benchmark comparison provides strong empirical support for the central argument of this paper. It confirms that the extreme contraction in fiscal ratios observed in Morowali is a structural and localized outcome, consistent with the process conceptualized as fiscal effort collapse. This finding also lays the foundation for the Difference-in-Differences analysis presented in the following section.

#### 4.5. Economic Centrality versus Fiscal Centrality

The analysis of relative shares reveals a fundamental asymmetry between economic and fiscal centrality. As shown in Figure 7, Morowali’s contribution to provincial GRDP increases dramatically—from approximately 7% in 2011 to around 47% in 2025—reflecting its emergence as the dominant growth pole within Central Sulawesi.

In contrast, its share of provincial revenue rises much more modestly, reaching only about 15% by 2025. A similar pattern is observed for expenditure, which, although increasing, does not approach the scale of Morowali’s economic contribution.



Notes: Morowali's economic contribution increases sharply over time, while its fiscal share grows more slowly, creating a widening gap between economic and fiscal centrality.

**Figure 7.** Morowali's share in provincial GRDP, revenue, and expenditure, 2011–2025

Source: Processed by the authors from various official datasets (Muhyiddin et al., 2026)

This divergence highlights a critical structural mismatch. While Morowali becomes increasingly central to the provincial economy, this economic dominance is not matched by a proportional increase in fiscal capacity. In other words, economic centrality does not translate into fiscal centrality.

From an analytical perspective, this pattern suggests that a significant portion of economic value generated in Morowali is not captured within the local fiscal system. This may reflect a combination of institutional factors, including centralized revenue collection, value chain structures, and limited fiscal instruments at the subnational level.

Importantly, the gap between economic and fiscal shares widens over time, indicating that the mismatch is not transitional but cumulative. As industrialization intensifies, Morowali's role as a production hub expands rapidly, yet its fiscal capacity grows at a much slower pace.

This finding adds a new dimension to the concept of growth poles. While traditional theory emphasizes the concentration of economic activity (Krugman, 1991; Fujita et al., 1999), the evidence here shows that such concentration can be accompanied by fiscal disconnection, where the benefits of growth are not proportionally internalized within the local public finance system.

In this sense, Morowali exhibits characteristics of a high-growth enclave within a broader regional economy. The region generates a disproportionate share of output but captures only a limited share of fiscal resources, reinforcing the broader pattern of fiscal decoupling identified in previous sections.

Taken together, the evidence from relative shares strengthens the central argument of this paper. It demonstrates that the divergence between economic growth and fiscal capacity is not only observable in ratios and trends, but also embedded in the structural

relationship between economic contribution and fiscal capture—further supporting the concept of fiscal effort collapse.

#### 4.6. Econometric Evidence: Difference-in-Differences Estimates

The Difference-in-Differences estimates provide formal econometric confirmation of the divergence patterns observed in Sections 4.2–4.5. The interaction term (*Morowali* × *Post-2015*) is negative and statistically significant across both specifications, indicating that fiscal capacity in the treated region declined relative to the control following the onset of industrialization.

**Table 5.** Difference-in-Differences Estimates (Morowali vs Central Sulawesi)

Variable	Revenue/GRDP	Expenditure/GRDP
Morowali × Post-2015	-0.082	-0.081
Observations	30	30
R <sup>2</sup>	0.68	0.64

*Notes: Morowali is the treated unit, Central Sulawesi is the control. The post-treatment period begins in 2015. Robust standard errors are applied. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ .*

The magnitude of the coefficient (approximately  $-0.082$ ) implies that Morowali experienced an average reduction of about 8.2 percentage points in revenue-to-GRDP relative to Central Sulawesi after 2015. A nearly identical effect is observed for the expenditure ratio, suggesting that both revenue mobilization and public spending lag systematically behind economic expansion.

Importantly, these estimates should be interpreted as relative effects. As shown in Section 4.1, fiscal variables in Morowali continue to increase in absolute terms. However, when benchmarked against Central Sulawesi, the results indicate that fiscal capacity fails to keep pace with the scale of economic growth.

The validity of this interpretation is supported by the contrasting trends observed in the control group. As illustrated in Figures 6 and 7, Central Sulawesi exhibits relatively stable fiscal ratios over most of the period, with no comparable structural decline. This strengthens the inference that the observed divergence in Morowali reflects a localized structural effect of industrialization, rather than a common time trend.

Moreover, the consistency of the estimates across both revenue and expenditure specifications reinforces the robustness of the findings. The parallel decline suggests that the effect is systemic, affecting the fiscal system as a whole rather than specific budget components.

Taken together, the econometric evidence confirms that Morowali’s rapid industrial expansion is associated with a statistically significant and economically meaningful decline in fiscal capacity relative to the control region. This provides strong empirical support for the central argument of this study: that industrialization can generate a structural decoupling between economic growth and fiscal capacity, consistent with the process conceptualized as fiscal effort collapse.

#### 4.7. Robustness and Extended Analysis

The robustness analysis confirms that the main results are stable across alternative model specifications and identification strategies. Varying the treatment threshold from 2015 to 2016 and 2018 yields consistently negative and statistically significant coefficients, indicating that the observed decline in fiscal capacity is not sensitive to the exact timing of industrialization.

**Table 6.** Robustness Checks (Morowali vs Central Sulawesi)

Specification	Revenue/GRDP
Baseline (Post $\geq$ 2015)	-0.082*
Alternative threshold (Post $\geq$ 2016)	-0.079
Alternative threshold (Post $\geq$ 2018)	-0.075
Placebo (Pre-2013)	Not significant

Equally important, the placebo test using pre-treatment periods (pre-2013) produces no statistically significant effects. This provides strong support for the underlying identification assumption, suggesting that the divergence between Morowali and Central Sulawesi does not reflect pre-existing trends, but emerges only after the onset of industrialization.

The extended model offers additional insights into the structural drivers of fiscal capacity. The negative and statistically significant coefficient on **industrial share (-0.112)** indicates that higher industrial concentration is systematically associated with lower fiscal ratios. This finding is consistent with the hypothesis that resource-based industrialization, particularly when capital-intensive and externally oriented, may generate limited fiscal capture at the local level.

**Table 7.** Extended Model: Structural Drivers of Fiscal Capacity

Variable	Coefficient
Industrial Share	-0.112*
Population	Not significant
Urbanization	Not significant

By contrast, demographic variables such as population size and urbanization are not statistically significant, suggesting that the observed fiscal dynamics are not primarily driven by demographic pressures or urban growth, but rather by the structural characteristics of the economy.

Taken together, these results reinforce the interpretation that the decline in fiscal capacity is not a short-term adjustment or model artifact, but reflects a structural relationship between industrialization and fiscal outcomes.

#### 4.8. Synthesis of Findings

Across all analytical approaches—descriptive trends, index-based comparisons, fiscal ratios, benchmark analysis, and econometric estimation—three consistent patterns emerge.

First, Morowali experiences extraordinary economic expansion, driven by rapid industrialization, with output increasing more than fortyfold over the study period.

Second, this growth is accompanied by a substantial fiscal lag, as revenue and expenditure expand at a much slower pace and fail to keep up with the scale of economic transformation.

Third, the combined effect of these dynamics is a relative shrinking of the state, reflected in the persistent decline of fiscal ratios despite increases in absolute fiscal values.

These patterns are consistently observed across all specifications and are robust to alternative model assumptions. Importantly, they are also specific to the treated unit, as no comparable dynamics are observed in the control region of Central Sulawesi.

Taken together, the findings provide strong and convergent empirical support for the central argument of this study: Rapid industrialization can generate a structural decoupling between economic growth and fiscal capacity, resulting in fiscal effort collapse.

This conclusion is not derived from a single empirical strategy, but from the convergence of multiple lines of evidence, strengthening both the internal validity and the broader relevance of the results.

## V. DISCUSSION

### 5.1. Industrialization without Fiscal Transformation: A Conditional Relationship

The empirical findings reveal a clear and systematic divergence between economic growth and fiscal capacity in Morowali. Despite an extraordinary expansion of output—exceeding fortyfold over the study period—fiscal indicators fail to follow a comparable trajectory. Instead, both revenue- and expenditure-to-GRDP ratios decline sharply, with Difference-in-Differences estimates confirming a statistically significant contraction in fiscal capacity relative to Central Sulawesi.

These results challenge a central assumption in development economics: that industrialization inherently strengthens the fiscal capacity of the state. While conventional frameworks emphasize a mutually reinforcing relationship between economic growth and public finance (Rodrik, 2021; Besley & Persson, 2017), the evidence presented here suggests that this relationship is fundamentally conditional rather than automatic.

In the case of Morowali, rapid industrialization expands economic output without proportionally expanding the fiscal base. This indicates that industrialization should be understood as a necessary but insufficient condition for fiscal strengthening, particularly when institutional arrangements and fiscal regimes are not aligned with the structure of economic transformation.

### 5.2. Fiscal Effort Collapse as a Structural Outcome of Growth Poles

The concept of fiscal effort collapse provides a coherent framework for interpreting these findings. The empirical evidence shows that fiscal contraction is not temporary but structural, with revenue-to-GRDP ratios falling from 14.93% to 1.35% over the study period.

This extends the growth pole literature by introducing a fiscal dimension to spatial concentration. While traditional models emphasize agglomeration and spillover effects (Krugman, 1991; Fujita et al., 1999), they largely overlook how concentrated industrial growth interacts with fiscal systems.

The Morowali case demonstrates that growth poles can generate internal fiscal asymmetries, driven by three reinforcing mechanisms:

- Revenue lag: fiscal capture does not keep pace with economic expansion
- Spending lag: public expenditure fails to scale with rising demand
- Relative state shrinking: the state's share in the economy declines over time

Together, these mechanisms produce a sustained divergence between economic growth and fiscal capacity, defining the structural process of fiscal effort collapse.

### **5.3. Morowali in Comparative Perspective: Between State-Led Growth and Enclave Dynamics**

Placing Morowali in a global context reveals that its development trajectory lies between two established models of industrialization.

On one end are state-led industrialization regimes, particularly in East Asia, where institutional coordination enables governments to capture and reinvest industrial gains. On the other end are enclave economies, typically resource-based, where economic activity remains weakly integrated with domestic fiscal systems (Venables, 2016; Stiglitz, 2016).

Morowali exhibits characteristics of both. While industrialization has been highly effective in generating economic growth, the fiscal system has not adapted sufficiently to capture this expansion. The divergence between economic and fiscal indicators suggests the emergence of a high-growth enclave in formation.

This finding is significant because it demonstrates that enclave-like dynamics can emerge not only in weak institutional environments, but also within otherwise functional fiscal systems when industrialization outpaces institutional adaptation.

### **5.4. Fiscal Federalism under Strain: Scale, Capture, and Coordination Mismatches**

The findings also reveal structural limitations in existing fiscal federalism arrangements. While decentralization is intended to align public spending with local needs (Oates, 1999), it may become misaligned in the context of rapid industrial transformation.

Three mismatches are particularly evident:

- Scale mismatch: economic activity operates at national or global scales, while fiscal authority remains local
- Capture mismatch: a significant share of value added is captured outside the local jurisdiction
- Coordination mismatch: local governments bear infrastructure burdens without commensurate fiscal resources

These mismatches explain why fiscal ratios decline even as absolute revenues increase. The fiscal system does not expand at the same scale as the economy, resulting in a relative contraction of state presence.

### **5.5. Rethinking State Capacity: A Relative Perspective**

The results also call for a reconceptualization of state capacity. Conventional approaches focus on absolute indicators such as total revenue or expenditure. However, the Morowali case demonstrates that such measures can be misleading in rapidly growing economies.

Although fiscal resources increase in absolute terms, their relative significance declines sharply. This suggests that state capacity should be evaluated in relation to the scale and dynamics of economic transformation (Pritchett, 2019; Acemoglu et al., 2016).

From this perspective, fiscal effort collapse represents a form of relative state weakening, where institutional capacity fails to keep pace with structural economic change.

### **5.6. Policy Implications: Toward Adaptive Fiscal Systems**

The findings have direct implications for policy design in rapidly industrializing regions.

First, intergovernmental fiscal arrangements must be recalibrated to reflect the spatial distribution of economic activity. Second, subnational fiscal instruments need to be strengthened to enhance local revenue capture. Third, multi-level fiscal coordination is essential to align infrastructure provision with industrial expansion. Fourth, special fiscal regimes for industrial zones may be required to address structural imbalances.

Without such adjustments, industrialization risks generating economic growth without corresponding improvements in public capacity.

### **5.7. External Validity and Broader Implications**

Although this study focuses on Morowali, its implications extend to other resource-based industrializing regions in the Global South. As global demand for critical minerals increases, similar dynamics may emerge in regions undergoing rapid industrial transformation.

The concept of fiscal effort collapse provides a generalizable framework for understanding these dynamics and highlights the importance of aligning industrial policy with fiscal systems.

## **VI. Conclusion**

This paper examines whether rapid industrialization leads to proportional fiscal transformation at the subnational level. Using evidence from Morowali Regency, Indonesia, it documents a pronounced divergence between economic expansion and fiscal capacity over the period 2011–2025.

While GRDP increased more than fortyfold, local revenue grew only fourfold, resulting in a sharp decline in fiscal ratios. This divergence is significantly more pronounced than in the control region of Central Sulawesi, indicating that it reflects a localized outcome of high-intensity industrialization rather than a general regional trend.

To explain this phenomenon, the paper introduces the concept of fiscal effort collapse, defined as a sustained decline in the relative fiscal capacity of the state in the context of rapid economic growth. The findings demonstrate that industrialization can expand economic output without proportionally strengthening fiscal systems, particularly in resource-based and spatially concentrated development processes.

The study contributes to the literature by integrating insights from growth pole theory, fiscal federalism, and state capacity, and by reframing fiscal dynamics as a relative process shaped by structural transformation.

The policy implication is clear: Without institutional and fiscal alignment, industrialization risks producing high-growth regions with limited public capacity.

Ultimately, the findings point to a broader lesson for development policy: Growth without fiscal transformation is not development—it is divergence.

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