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Regional Debt, Fiscal Capacity, and Fiscal Space in the Maluku Islands Region

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Abstract
This study analyzes the dynamics of regional debt and its implications for fiscal sustainability in the archipelago with a case study of Maluku Province. Although regional debt is increasingly playing a role as a development financing instrument, limited fiscal capacity and high dependence on central transfers pose a risk to medium-term fiscal sustainability. This study uses a descriptive-analytical quantitative approach based on APBD data and regional financial statements to examine the debt trajectory, fiscal structure, and fiscal space.
The results show that regional debt develops through a dynamic trajectory, from the accumulation phase to the active amortization phase, where debt payment obligations become a fixed fiscal burden. Although outstanding debt has decreased, debt service expenses remain significant, ranging from Rp126-137 billion per year, thus limiting regional fiscal flexibility. The debt service to revenue ratio increased from 4.35–4.49 percent in 2023–2024 to 9.15 percent in 2025. In addition, low fiscal independence (PAD < 25%), high dependence on central transfers (>75%), and increasing spending rigidity reinforce fiscal pressures.
Fiscal space analysis shows limited, even negative conditions in 2025. Debt additions simulations show that the debt service to income ratio can increase to about 35.8 percent, exceeding the high risk threshold (>20%). These findings confirm that a decline in debt stocks does not necessarily reflect reduced fiscal pressures, as the annual liability burden remains binding on the APBD.
This research contributes by introducing a debt trajectory approach in the context of the archipelago, as well as emphasizing the importance of alignment between debt policy and fiscal capacity in supporting sustainable development financing.

INTRODUCTION

Fiscal decentralization is basically intended to give local governments broader authority in managing public resources according to local needs. In the theory of fiscal federalism, decentralization is seen as able to improve the efficiency of allocation because local governments are considered to understand the preferences of the people and the characteristics of their regions better than the central government (Oates, 1999). However, these benefits do not always materialize automatically. In practice, the effectiveness of decentralization is highly dependent on the ability of local governments to finance decentralized authority. When spending responsibilities increase but the revenue capacity itself remains limited, vertical fiscal inequality arises that can weaken the effectiveness of regional fiscal autonomy (Bird & Smart, 2002).

Fiscal capacity is not only related to the size of regional revenue, but also to the ability of local governments to maintain budget flexibility after fulfilling various fiscal obligations. The OECD emphasizes that the fiscal resilience of subnational governments is strongly influenced by their own revenue structures, reliance on intergovernmental transfers, rigidity of spending, and regional financing and investment arrangements. Thus, a weak regional fiscal structure can limit local government policy space, even as development needs continue to increase.

This problem is very relevant in the archipelago. Archipelago areas generally face higher development costs due to fragmented areas, limited connectivity, and scattered population distributions. Under such conditions, local governments must provide infrastructure, basic services, and logistical support in a geographical space that is more expensive than the mainland. At the same time, the local economic base is often not large enough to generate strong local income. As a result, the archipelago tends to face high spending needs but relatively narrow revenue capacity. This condition makes development financing a more complex fiscal issue.

Maluku Province is a very relevant example to illustrate this problem. As an archipelagic province, Maluku faces a great need to finance basic infrastructure, inter-island connectivity, and cross-regional public services. However, based on this research data, the revenue structure of Maluku Province throughout 2020-2025 is still dominated by central transfers, while the contribution of Regional Original Revenue (PAD) is relatively limited. The ratio of fiscal independence is only in the range of 16.85 percent to 22.66 percent, while the ratio of dependence on central transfers remains very high, which is between 77.34 percent and 83.10 percent. The data shows that the region's fiscal ability to finance development independently is still limited.

In such a situation of limited fiscal capacity, regional debt then emerged as one of the instruments of development financing. Conceptually, government debt is justifiable when it is used to finance long-term investments whose benefits are enjoyed across generations. However, this justification is only strong if the government's fiscal structure is sufficiently capable of supporting repayments without causing undue pressure on future budgets. The IMF emphasized that the narrow fiscal space requires governments to pay more attention to the quality of the composition of spending, the efficiency of the use of the budget, and the sustainability of the fiscal obligations incurred. In other words, the main issue is not only whether the government is in debt, but whether it can still be managed without sacrificing fiscal stability and productive spending.

In Maluku Province, this problem can be seen in the loan obligation to PT Sarana Multi Infrastruktur (PT SMI). Based on research data, the total loans that have been realized have reached IDR 683,360,991,474 with a tenure of seven years and an interest rate of 0.185 percent. His annual payment obligation consists of principal installments of around IDR 136.67 billion and interest of around IDR 1.01 billion, so that the total payment per year reaches around IDR 137.68 billion. Although outstanding debt decreased to IDR 284.73 billion as of December 31, 2025, annual debt service obligations still absorb a significant portion of the region's fiscal capacity.

Based on research data, the ratio of debt service to total regional revenue increased from 0.04-1.12 percent in the 2020-2022 period to 4.49 percent in 2023, 4.35 percent in 2024, and 9.15 percent in 2025. At the same time, the ratio of debt service to total regional expenditure also increased from a very low level at the beginning of the period to 4.61 percent in 2023, 5.42 percent in 2024, and 5.30 percent in 2025. This shows that although outstanding debt has decreased, the burden of debt payments has become increasingly significant in the structure of the APBD. Thus, fiscal pressure cannot be assessed only from the debt stock, but must be seen from the debt service burden that must be paid from the limited fiscal capacity.

This condition becomes more severe because the regional spending structure also shows high rigidity. Research data shows that Maluku Province's employee spending continues to be at a large level, even reaching IDR 1.226 trillion in 2025, while total regional revenue in the same year is IDR 1.499 trillion. At a time when employee spending, education spending, health spending, and debt service must be met, the remaining fiscal space for development spending becomes very narrow. When fiscal resources are limited, the government should be more careful to ensure that the composition of expenditure is not held hostage by rigid and repetitive obligations.

Empirically, the literature on regional debt in Indonesia has discussed fiscal decentralization, intergovernmental transfers, and subnational financing, but studies that specifically link regional debt, fiscal capacity, spending rigidity, and characteristics of archipelago regions are still relatively limited. In fact, in the Maluku region, the debt problem is not only a nominal issue of liabilities, but also a question of how the debt interacts with transfer dependence, weak own income, and high infrastructure development needs. This is where the importance of this research lies: regional debt needs to be seen as part of a mechanism of fiscal pressure that influences fiscal space and regional development choices.

Based on these conditions, this study departs from the argument that the fiscal sustainability of the archipelago cannot be assessed only from the size of the outstanding debt. The assessment must be carried out by simultaneously looking at the trajectory of debt, debt service, regional revenue structure, dependence on central transfers, and the rigidity of mandatory spending. With this approach, this study will describe the condition of PT SMI's debt that has been realized, and also explain how the debt affects the fiscal space of the Maluku Provincial Government in the context of limited fiscal capacity.

This research has three main contributions. First, this study places regional debt within the framework of the fiscal capacity and fiscal space of the archipelago, not just as an instrument of development financing. Second, this study shows that regional fiscal pressures are more accurately read through the relationship between debt service, transfer dependence, and spending rigidity. Third, this study provides empirical evidence that in regions with weak fiscal capacity, a decrease in outstanding debt is not always synonymous with a decrease in annual fiscal pressure. Thus, this research is expected to expand academic discussions on local government debt while providing a stronger policy basis for the fiscal management of the archipelago.

Problem Formulation

Based on this background, the problems of this research are formulated as follows:

1. What is the trajectory and debt position of PT SMI that has been realized in the fiscal obligation structure of the Maluku Provincial Government?
2. How does PT SMI's debt service burden affect the regional revenue and expenditure structure of Maluku Province?
3. How do fiscal capacity limitations, as reflected in low fiscal independence, high dependence on central transfers, and spending rigidity, shape fiscal pressure on regional debt management?
4. What are the implications of the debt that has been realized on the fiscal space of the Maluku Provincial Government in financing development needs?

Research Objectives

In line with the formulation of the problem, the objectives of this study are:

1. analyze the trajectory and debt position of PT SMI that has been realized to the Maluku Provincial Government;
2. identify PT SMI's debt service burden in the regional revenue and expenditure structure;
3. analyze the relationship between regional debt and the limited fiscal capacity of Maluku Province;

4. explain the implications of regional debt on the fiscal space of the Maluku Provincial Government in the context of financing the development of the archipelago.

Literature Review and Conceptual Framework

Fiscal Decentralization and Regional Fiscal Capacity

In the theory of fiscal federalism, decentralization is a mechanism to improve the efficiency of public resource allocation through the delegation of authority to local governments that are closer to the needs of the community. Oates (1999) emphasized that decentralization can generate welfare benefits when local governments have better information about local preferences and can adapt the provision of public goods to the conditions of their respective regions. However, the effectiveness of decentralization is not only determined by the devolution of authority, but also by the fiscal ability of local governments to finance functions that have been decentralized. When spending responsibilities increase but the capacity of own revenue remains limited, vertical fiscal imbalance arises which can weaken the quality of regional fiscal autonomy (Oates, 1999; Bird & Smart, 2002).

Bird and Smart (2002) show that in many developing countries, the main problem of decentralization lies in the lack of regional access to adequate sources of income and in the importance of intergovernmental transfer designs to maintain a balance between autonomy, efficiency, and accountability. In a more recent development, the OECD emphasizes that the fiscal resilience of subnational governments is greatly influenced by a combination of own revenues, transfers from the central government, spending structures, and regional financing and investment arrangements. Thus, fiscal decentralization that is not accompanied by strengthening fiscal capacity risks resulting in a high dependence on transfers and narrowing the fiscal policy space at the regional level (Bird & Smart, 2002; OECD, 2024). A World Bank study of subnational debt financing in Indonesia confirms that local governments play an important role in the provision of infrastructure, but the use of repayable financing remains highly influenced by fiscal quality, institutional capacity, and regional financial viability. This means that a region's ability to utilize loans depends not only on investment needs, but also on the strength of its own fiscal structure (World Bank, 2024).

Regional Debt as a Development Financing Instrument

From a public finance perspective, government debt is justifiable in principle when it is used to finance long-term investments whose benefits are enjoyed across generations. In this sense, debt serves as an intertemporal financing instrument that allows the acceleration of development when current revenues are not enough to cover capital expenditure needs. Heller (2005) emphasized that such financing can only be considered feasible if it does not undermine fiscal sustainability and remains within the government's ability to meet its fiscal obligations in the future

At the subnational level, regional loans are often seen as an important instrument for closing the infrastructure financing gap. However, experience shows that local governments' access to loans is usually limited by weak creditworthiness, uncertainty of transfer flows, and limitations in fiscal governance. A recent World Bank study also shows that in many developing countries, including Indonesia, local government debt stocks are relatively small, not only because of healthy fiscal conditions, but also because of limited access to financing, regulatory prudence, and weak readiness of local projects and fiscal institutions (World Bank, 2024).

The use of regional loans in Indonesia is regulated through Government Regulation Number 56 of 2018 concerning Regional Loans. This regulation emphasizes that regional loans must pay attention to regional financial capacity, repayment ability, and the principle of fiscal prudence.

Thus, regional loans are recognized as legitimate financing instruments, but their use requires that the regional fiscal structure be strong enough to support the principal and interest obligations that arise. Within this framework, the evaluation of regional debt must move from mere formal legality to a more substantive assessment of its fiscal sustainability (Government Regulation No. 56 of 2018; World Bank, 2024).

Fiscal Sustainability and the Concept of Fiscal Space

The concept of fiscal space refers to the ability of governments to provide additional resources for development priorities without disrupting the sustainability of its fiscal position. Heller (2005) explains that fiscal space does not simply mean the availability of funds in cash or budget arithmetic, but indicates whether the government still has the capacity to expand spending or financing without creating excessive fiscal instability in the future. Thus, fiscal space is directly related to the concept of fiscal sustainability, which is the government's ability to meet its spending obligations in a sustainable manner without drastic and destructive adjustments (Heller, 2005).

Debt pressure is not only seen from the size of the debt stock, but also from the composition of expenditure, the rigidity of spending, and the government's ability to maintain productive spending in a narrow fiscal situation. The OECD shows that the fiscal vulnerability of subnational governments increases when their own revenues are weak, intergovernmental transfers are unstable, and the portion of stiff spending is relatively large. In these conditions, debt payment obligations can quickly turn into a factor that locks in the budget and reduces the flexibility of fiscal decision-making (OECD, 2024). Therefore, in the analysis of local governments, indicators such as the debt service to revenue ratio, the debt service to expenditure ratio, the fiscal independence ratio, and the dependency on transfer ratio are more informative than just looking at the nominal outstanding debt. A region may show a decline in its debt stock, but it still experiences high fiscal pressure if its annual payment obligations absorb a large portion of its available revenue. This framework is particularly relevant for reading regional debt in the context of weak fiscal capacity and high development needs (Heller, 2005; OECD, 2024).

Archipelagic Territory, Development Costs, and Fiscal Vulnerability

The archipelago has different development characteristics from the mainland. Geographical fragmentation, limited connectivity, scattered population distribution, and relatively small economic scale cause the cost of providing infrastructure and public services in the archipelago tends to be higher. Various studies of archipelago development confirm that such spatial characteristics create greater financing pressure on local governments because the need for connectivity and basic services cannot be pressed as low as in more geographically integrated areas (ADB, 2024).

In such situations, the archipelago often faces a fiscal paradox. On the one hand, the investment needs are large because the costs of logistics, transportation, and basic infrastructure are high. On the other hand, its fiscal capacity is often relatively weak due to its narrow local economic base and limited sources of revenue. This condition makes loans appear to be an attractive financing alternative, but at the same time increases fiscal risks if debt repayment obligations are not supported by strong regional revenues. In other words, in the archipelago, the issue of regional debt is not enough to be seen as a financing issue, but must be understood as a fiscal sustainability issue inherent in the structure of the region itself (ADB, 2024).

Conceptual Framework of Research

This research is built on the understanding that regional fiscal pressure is the result of an interaction between four main components. The first component is regional revenue capacity, which is reflected in the ability to generate PAD and the level of dependence on central transfers. The lower the self-revenue capacity and the greater the dependence on transfers, the weaker the ability of the regions to finance expenditure independently (Oates, 1999; Bird & Smart, 2002).

The second component is the structure of expenditure and expenditure rigidity, especially expenditures that are mandatory and difficult to adjust, such as employee spending and basic services. When the portion of rigid spending is high, budget flexibility becomes narrow, so that the ability of local governments to respond to new fiscal pressures becomes limited (OECD, 2024).

The third component is regional debt and debt service. Debt can initially expand the capacity to finance development, but after entering the principal and interest payment phase, the annual obligation becomes the binding on the structure of the APBD. In conditions of weak fiscal capacity, debt service can transform into a real source of fiscal pressure (Heller, 2005).

The fourth component is fiscal space, which is the remaining budget flexibility after regional revenues are reduced by mandatory spending and debt obligations. The smaller the fiscal space remains, the more limited the ability of local governments to finance new development, respond to shocks, or add new financing obligations. In the context of the archipelago, this relationship becomes sharper because the high need for infrastructure financing meets with limited fiscal capacity and high public service costs (Heller, 2005; ADB, 2024).

Based on this framework, the line of thinking of this research can be formulated as follows: low PAD and high transfer dependency, plus spending rigidity, form a limited fiscal capacity; in such conditions, debt service becomes increasingly binding on the structure of the APBD; as a result, fiscal space narrows and trade-offs arise between the fulfillment of fiscal obligations and development financing. This framework is an analytical basis for reading PT SMI's debt cases in Maluku Province. The research propositions of the analysis are built in four forms, namely: Proposition 1. The lower the regional fiscal independence and the higher the dependence on central transfers, the more limited the regional fiscal ability to sustain debt obligations in a sustainable manner. Proposition 2. The larger the portion of debt service in the regional revenue and expenditure structure, the smaller the fiscal space available to finance development. Proposition 3. In the archipelago, fiscal pressure due to debt tends to be more pronounced because the need for high infrastructure development is faced with relatively narrow fiscal capacity. Proposition 4. A decrease in outstanding debt does not necessarily mean that fiscal pressure decreases, as the annual debt service burden can remain large and bind the APBD.

METHOD

Research Approach and Design

This study uses a descriptive-analytical quantitative approach with a case study design in Maluku Province. This approach was chosen to systematically analyze the condition of regional debt that has been realized and its implications on the fiscal capacity and fiscal space of the governmenth region. The research design is non-experimental, with a focus on structural and policy analysis. This approach is in line with the public financial literature that places fiscal sustainability analysis as a combination of fiscal indicator evaluation, budget structure, and policy simulation (Heller, 2005; IMF, 2024).

Scope and Period of Research

The scope of research is limited to the area in the Maluku provincial government; The object of the study on regional debt derived from PT Sarana Multi Infrastruktur (PT SMI) loans and the 2020-2025 analysis data period, The period was chosen because of the phase of regional debt accumulation, the initial phase of debt service payments, and the latest fiscal dynamics relevant to the condition of regional fiscal capacity. And this study distinguishes between existing debt and plans if debt is added (policy scenario).

Types and Data Sources

This study uses secondary data including: Budget Realization Report (LRA) of Maluku Province; Local Government Financial Statements (LKPD); Data from the Directorate General of Financial Balance (DJPK); Published by the Central Statistics Agency (BPS); Official documents of the government and the DPRD related to regional debt policies; Laws and regulations related to regional loans.

Research Variables and Indicators

Table.3.1. Research Variables and Indicators

No.	Key Variables	Indicator	Remarks
1	Regional debt	Outstanding debt	The amount of remaining regional debt obligations that still need to be paid in a certain period.
		Debt service	Payment of debt obligations consisting of loan principal and interest.
2	Regional revenue	Regional Original Revenue (PAD)	Revenue sourced from regional taxes, regional levies, results of regional wealth management, and other legitimate PAD.
		Central government transfers	Transfer funds from the central government to the regions, including DAU, DAK, DBH, and other transfers.
		Total regional revenue	All regional revenues are used to finance regional expenditures and fiscal obligations.
3	Regional shopping	Total regional expenditure	All local government expenditures in one budget year.
		Employee spending	Expenses for salaries, allowances, and other obligations related to local government apparatus.
		Education spending	Regional expenditure allocation to support services and development of the education sector.
		Health shopping	Regional expenditure allocation to support services and development of the health sector.
4	Fiscal indicators	Fiscal independence ratio	Measuring the ability of the region to finance its fiscal needs from the original source of regional income.
		Fiscal dependency ratio	Measure the level of regional dependence on transfers from the central government.
		Debt service ratio	Measuring the burden of principal and debt interest payments on regional revenue capacity.
		Fiscal space	Describe the fiscal capacity of the region after deducting mandatory expenditure and debt obligations.

Analysis Tools

Analysis of Debt Conditions and Trajectory (Objective 1)

quantitative descriptive analysis, focusing on nominal debt; changes in inter-period debt balances as well as principal and interest payment patterns

3.5.2 Analysis of the Position of Debt in the Fiscal Structure (Objective 2)

To assess the debt position in the regional financial structure, the following ratio analysis is used:

Equation **(1)**

Debt Service to Income Ratio:

$$DSR_{pendapatan} = \frac{Debt\ Service}{Total\ Pendapatan} \times 100\%$$

Equation **(2)**

Debt Service to Expenditure Ratio:

$$DSR_{belanja} = \frac{Debt\ Service}{Total\ Belanja} \times 100\%$$

This ratio is used to measure the level of debt obligation pressure on regional fiscal capacity.

Fiscal Capacity Analysis (Objective 3)

Fiscal capacity is analyzed using two main indicators:

Equation **(3)**

Fiscal Independence Ratio:

$$Rasio\ Kemandirian = \frac{PAD}{Total\ Pendapatan} \times 100\%$$

Equation **(4)**

Fiscal Dependency Ratio:

$$Rasio\ Ketergantungan = \frac{Transfer\ Pusat}{Total\ Pendapatan} \times 100\%$$

This indicator is used to assess the ability of regions to finance expenditures independently and the level of dependence on the central government.

Fiscal Space Analysis (Objective 4)

Fiscal space is calculated using a simple fiscal arithmetic approach, namely:

Equation **(5)**

Fiscal Space:

$$\begin{aligned} Fiscal\ Space = Total\ Pendapatan - (&Belanja\ Pegawai + Belanja\ Pendidikan \\ &+ Belanja\ Kesehatan + Debt\ Service) \end{aligned}$$

This approach is used to identify the extent of local government budget flexibility after meeting key fiscal obligations.

Analysis of Fiscal Pressure Simulation

To strengthen the policy analysis, a simple simulation of the scenario of increasing regional debt was carried out.

Equation **(6)**
Debt Service Projection:

$$Debt\ Service_{baru} = Debt\ Service_{eksisting} + Debt\ Service_{tambahan}$$

Equation **(7)**
Projected Debt Service Ratio:

$$DSR_{baru} = \frac{Debt\ Service_{baru}}{Total\ Pendapatan} \times 100\%$$

This simulation is used to identify potential changes in fiscal pressure and assess the risk of fiscal sustainability in the event of an increase in debt

RESULTS AND DISCUSSION

Debt Trajectory and Transformation of Fiscal Pressures in the Archipelago

The results of the analysis show that the regional debt of Maluku Province cannot be understood statically as a nominal amount of liability, but as a dynamic process that forms fiscal pressure between times. The loan to PT Sarana Multi Infrastruktur (PT SMI) which was realized amounting to Rp683.36 billion shows how development financing instruments are gradually transformed into fiscal burdens that bind the structure of the APBD.

Table 4.1. Debt Trajectory and Debt Service Burden of Maluku Province (2020-2025)

Year	Outstanding Debt (Rp)	Principal Payment (Rp)	Interest Payment (Rp)	Total Debt Service (Rp)	Debt Phase
2020	175.000.000.000	-	-	-	Accumulation
2021	683.360.991.474	-	-	-	Accumulation
2022	683.360.991.474	0	1.264.217.834	1.264.217.834	Passive Liability
2023	546.688.765.842	136.672.225.632	1.011.374.216	137.683.599.848	Amortization
2024	421.405.892.346	125.282.873.496	758.530.701	126.041.404.197	Amortization
2025	284.733.666.714	136.672.225.632	526.757.283	137.198.982.915	Amortization

Source: Processed from data from PT SMI and LRA Maluku Province

As shown in Table 4.1, the debt trajectory of Maluku Province shows a clear shift from the accumulation phase in 2020-2021 to the passive obligation phase in 2022, and subsequently entering the active amortization phase since 2023. In the initial phase, debt was formed through a gradual withdrawal that consolidated medium-term liabilities of IDR 683.36 billion. This pattern is in line with the concept of *intertemporal public borrowing*, where debt is used to accelerate development financing before economic benefits are fully realized (Musgrave & Musgrave, 1989).

Nevertheless, empirical findings show that fiscal pressures do not wait until the debt begins to be paid in principal. In 2022, although outstanding debt has not decreased, interest payment obligations have emerged and absorbed the region's fiscal capacity. This condition marks the phase of passive liability, where debt begins to create a flow of fiscal expenditure without being accompanied by a nominal decrease in liabilities. These findings reinforce the argument in the literature that fiscal pressures are more accurately understood through the flow dimension than just *stocks* (Heller, 2005; Ostry et al., 2010).

The most significant transformation has occurred since 2023, when debt entered the active amortization phase. In this phase, simultaneous principal and interest payments begin to form a relatively large annual debt service burden, which is around IDR 126-137 billion per year. Although nominally outstanding debt has decreased to IDR 284.73 billion in 2025, the decline does not necessarily reflect reduced fiscal pressure. On the contrary, the obligation to pay annually increases the rigidity of regional spending and limits the fiscal flexibility of the provincial government.

These findings show that regional debt serves as a mechanism that gradually shifts the structure of the APBD from the phase of financing expansion to the phase of fiscal pressure. In conditions of limited fiscal capacity characterized by low PAD contributions and high dependence on central transfers, the debt service burden has the potential to significantly narrow fiscal space. This is consistent with the view of Rodden (2006) that fiscal risk in subnational governments is not only determined by the amount of debt, but also by the fiscal ability of the regions to fulfill these obligations.

These findings have deeper implications. The geographical characteristics of Maluku which cause high development costs and limited economic base make the archipelago more sensitive to debt burden than the mainland (Armstrong & Read, 2004; Briguglio, 1995; ADB, 2024). Thus, the use of debt as an instrument to accelerate development in the archipelago must be balanced with stricter consideration of medium-term fiscal capacity.

Furthermore, these results directly address the research gaps identified in Chapter 2, particularly related to the limitations of previous studies that still focused on the aggregate size of debt without paying attention to the dynamics of the trajectory and fiscal pressures it produces. This study shows that in the context of the archipelago, debt analysis needs to shift from a static approach to a dynamic approach based on debt *trajectory*, which is able to capture the transformation of debt from a financing instrument to a source of fiscal pressure.

Overall, there are three main findings that can be affirmed. First, regional debt is formed through a gradual accumulation process that directly creates medium-term fiscal commitments. Second, fiscal pressures arise early through interest obligations before principal amortization begins. Third, the amortization phase turns debt into an annual service expense that structurally limits the flexibility of the APBD. In the context of Maluku Province as an archipelagic region, these three dynamics emphasize that debt is not just a financing instrument, but a key factor that shapes the trajectory of regional fiscal sustainability.

Debt Service Burden and Its Implications on Regional Revenue and Expenditure Structure

The analysis in this section aims to identify how PT SMI's *debt service* burden affects the regional revenue and expenditure structure of Maluku Province. In contrast to the trajectory analysis in the previous section, the approach in this section emphasizes relative size through fiscal ratios, so as to show the level of debt pressure on the capacity of the APBD more accurately.

In the public financial literature, the debt position of local governments is more appropriately evaluated through the debt *service ratio indicator*, which is a comparison between debt repayment obligations and total regional revenues and expenditures. This indicator reflects the extent to which debt absorbs available fiscal resources and potentially reduces budget flexibility (Blanchard et al., 1990; IMF, 2024).

Table 4.2. Debt Service Burden in the Structure of the Maluku Provincial Budget (2023–2025)

Year	Debt Service (Rp)	Regional Revenue (Rp)	Regional Expenditure (Rp)	DS/Revenue (%)	DS/Shopping (%)
2023	137.683.599.848	3.068.566.443.639	2.984.803.404.999	4,49%	4,61%
2024	126.041.404.197	2.897.916.593.044	2.325.471.060.425	4,35%	5,42%
2025	137.198.982.915	1.498.705.588.940	2.588.379.374.192	9,15%	5,30%

Source: Processed from LRA Maluku Province

As shown in Table 4.2, PT SMI's *debt service* burden consistently absorbed a certain portion of Maluku Province's fiscal capacity during the 2023-2025 period. In 2023 and 2024, the *debt-to-income ratio* will be in the range of 4.35-4.49 percent, which is generally still moderate. However, this condition will change significantly in 2025, when the ratio increases sharply to 9.15 percent in line with the decline in regional revenues.

This increase in ratio shows that fiscal pressure is not only determined by the amount of debt or payment obligations, but is greatly influenced by the dynamics of regional revenue capacity. In this context, although the value *of debt service is* relatively stable (around Rp126-137 billion per year), the decline in regional revenue leads to an increase in the relative burden of debt on fiscal capacity.

In terms of spending, the *ratio of debt service to regional expenditure* shows that debt obligations have begun to absorb between 4.61 percent and 5.42 percent of total regional expenditure. This figure indicates that debt has become a structural component in the APBD that directly competes with other public spending needs. In conditions where mandatory expenditure such as employee expenditure remains high, the existence of *debt service* has the potential to narrow the space for development spending, especially capital expenditure which is the initial purpose of using debt.

This phenomenon reflects the *crowding-out* effect in the regional fiscal structure, where debt repayment obligations gradually reduce the flexibility of local governments in allocating budgets. These findings are consistent with *the subnational fiscal risk* literature which confirms that debt risk does not only depend on the amount of debt, but on its ability to absorb fiscal resources sustainably (Rodden, 2006; IMF, 2024).

The revenue structure of Maluku province as an archipelago dominated by central transfers (more than 75 percent) shows that the real fiscal capacity of the regions is relatively limited. Under these conditions, any increase in fixed expenses, including *debt services*, has a greater impact on the fiscal balance than regions with a stronger income base (Briguglio, 1995; Armstrong & Read, 2004). The results of this analysis empirically support **Proposition 2**, namely that: *The larger the portion of debt service in the regional revenue and expenditure structure, the smaller the fiscal space available to finance development.*

This is evident in 2025, when the increase in the *debt-service to revenue* ratio to 9.15 percent occurs simultaneously with a decrease in regional fiscal capacity. Under these conditions, local governments face greater limitations in allocating budgets for development spending, as some fiscal resources have been tied up to meet debt obligations. Thus, *debt service* not only functions as a financial obligation, but also as a structural factor that directly affects fiscal space and regional development priorities. The larger the portion of *debt service*, the greater the pressure on budget flexibility, especially in the context of regions with limited fiscal capacity such as Maluku Province.

Limited Fiscal Capacity and Pressure on Debt Management in the Archipelago

The analysis in this section examines how the limitations of fiscal capacity, which are reflected in low fiscal independence, high dependence on central transfers, and rigidity of expenditure, shape fiscal pressure in the management of regional debt in Maluku Province. In contrast to the previous section which emphasized the relative position of debt in the APBD, this section links debt to the underlying fiscal capacity structure, so it is more comprehensive about fiscal risks in the archipelago.

In the framework of *fiscal capacity*, the ability of local governments to manage debt is largely determined by the ability to generate their own revenue (*own-source revenue*) and flexibility in allocating expenditure (Oates, 1972; Bird & Smart, 2002). Regions with low fiscal independence and high dependence on central transfers tend to have limited fiscal space, making them more vulnerable to debt pressures (Rodden, 2006; IMF, 2024).

Table 4.3. Indicators of Fiscal Capacity and Expenditure Structure of Maluku Province (2020–2025)

Year	PAD/Total Revenue (%)	Transfers/Total Revenue (%)	Employee Expenditure/Expenditure (%)	Capital Expenditure/Expenditure (%)
2020	17,92%	82,04%	34,12%	21,27%
2021	16,85%	83,10%	26,50%	27,87%
2022	21,88%	77,99%	36,63%	20,13%
2023	21,66%	78,33%	34,01%	16,84%
2024	18,82%	81,17%	42,59%	13,70%
2025	22,66%	77,34%	47,39%	7,03%

Source: Processed from LRA of Maluku Province and DJPK of the Ministry of Finance

As shown in Table 4.3, the fiscal capacity of Maluku Province is characterized by a relatively low level of fiscal independence, with the ratio of PAD to total revenue ranging from 16.85 percent to 22.66 percent. At the same time, dependence on central transfers remains high, in the range of 77 to 83 percent. This structure suggests that most of the region's fiscal capacity is supported by external sources of income that are not entirely flexible.

This condition has direct implications for the ability of local governments to manage debt. In this context, debt must not only be paid, but also must be integrated into a fiscal structure whose space for movement is already limited. This causes the *burden of debt services* to be heavier relatively compared to regions with a stronger income base.

In terms of spending, the analysis shows a significant increase in fiscal rigidity. The ratio of employee expenditure to total expenditure increased from around 34 percent at the beginning of the period to 47.39 percent in 2025. On the other hand, the portion of capital expenditure, which is the main instrument of development, has decreased sharply from around 27.87 percent in 2021 to only 7.03 percent in 2025. This pattern shows that the fiscal space for development financing is getting narrower, while routine spending obligations increasingly dominate the structure of the APBD.

In these conditions, the existence of debt strengthens existing fiscal pressures. The burden *of debt service* not only competes with development spending, but also must be met in an increasingly rigid budget structure. In other words, the limitation of fiscal capacity magnifies the relative impact of debt on the regional fiscal balance.

These findings are in line with the literature that emphasizes that debt risk at the subnational level is strongly influenced by the fiscal capacity of the region, not only by the amount of debt itself (Rodden, 2006; OECD, 2024). In the Indonesian context, Lewis's (2003) study also showed that regions with low fiscal capacity tend to face higher fiscal risks, even though their debt levels are relatively small in aggregate.

Furthermore, in the context of the archipelago, this pressure is becoming more real. Geographical characteristics that lead to high costs of infrastructure development, connectivity, and public services create greater spending needs than mainland areas (Armstrong & Read, 2004; Briguglio, 1995; ADB, 2024). However, these needs are not balanced by adequate fiscal capacity, creating a structural gap between financing needs and fiscal capabilities. The results of this analysis empirically support **Proposition 3**, namely: *In the archipelago, fiscal pressures due to debt tend to be more pronounced because the need for high infrastructure development is faced with relatively narrow fiscal capacity.*

In Maluku Province, this condition is reflected in a combination of three main factors. First, low fiscal independence leads to limitations in generating income that can be used flexibly. Second, the high dependence on central transfers limits regional fiscal policy space. Third, increasing spending rigidity reduces the ability of local governments to adjust spending structures in dealing with debt obligations.

In this combination, debt is a factor that reinforces fiscal pressures, not only because of the magnitude of the payment obligations, but because of the limitations of the underlying fiscal capacity. Thus, in the Maluku region, fiscal pressures due to debt are more structural and more sensitive to changes in fiscal capacity than regions with stronger economic bases.

Implications of Debt on Fiscal Space in Financing the Development of the Archipelago

The analysis in this section aims to evaluate the implications of regional debt that has been realized on the *fiscal space* of the Maluku Provincial Government, especially in the context of financing the development of the archipelago. Fiscal space in this study is understood as the capacity of local governments to allocate budget resources after fulfilling priority spending obligations and debt burdens (Heller, 2005; IMF, 2023).

In contrast to the previous analysis, the approach in this section not only looks at the debt position, but also directly measures the real limitations of fiscal space through a combination of revenue structure, spending rigidity, and *debt service burden*.

Table 4.4. Fiscal Space Estimation and Debt Service Simulation of Maluku Province Year 2025

Components	Value (Rp)
Total Regional Revenue	1.498.705.588.940
Employee Spending	1.226.716.311.925
Education Spending	144.423.946.413
Health Shopping	113.559.264.256
Total Debt Service (existing)	**137.198.982.915**
Total Priority Obligations	**1.621.898.505.509**
Fiscal Space Estimation	**-123.192.916.568**
Debt Service Simulation (additional debt)	**400.000.000.000**
Total Debt Service (existing + additional)	**537.000.000.000**
Debt Service / Revenue (%)	**35,8%**

Source: Processed from LRA Maluku Province

Table 4.4, the fiscal structure of Maluku Province in 2025 shows the condition of very limited fiscal space. Total regional revenue of Rp1.49 trillion was unable to cover priority spending obligations and debt burden of Rp1.62 trillion, resulting in negative fiscal space. This condition indicates that structurally the fiscal capacity of the regions has been under significant pressure.

Under these conditions, the existing *debt service* of Rp137.20 billion is not only a financial obligation, but also serves as a binding component in the APBD structure. This burden is rigid and must be met before the budget allocation for development activities is carried out. As a result, the space for development spending, especially capital expenditure, has become increasingly limited.

A Analysis shows that the decline in *outstanding debt* does not necessarily reflect reduced fiscal pressures. Although the debt balance decreased to IDR 284.73 billion in 2025, annual payment obligations remain at a significant level. This confirms that in the perspective of fiscal sustainability, debt pressures are more determined by liabilities flows (*Flow*) compared by debt stock (*Stock*) (Ostry et al., 2010; IMF, 2024).

In the scenario of additional new debt of IDR 1.5 trillion, *debt service* expenses are estimated to increase to around IDR 400 billion per year, so that total debt payment obligations can reach around IDR 537 billion. With a relatively limited level of regional revenue, the *debt-service ratio to revenue* has the potential to increase to around 35.8 percent. In the public financial literature, ratios below 10 percent are generally categorized as low risk, ratios between 10 to 20 percent reflect increased fiscal pressures, while ratios above 20 percent indicate a high level of fiscal risk and potentially disrupt the fiscal sustainability of the region.

Thus, the simulation results show that additional debt under conditions of limited fiscal capacity has the potential to push Maluku Province into the category of high fiscal risk. This condition not only narrows fiscal space, but also has the potential to create structural pressure on the APBD in the medium term.

The high need for infrastructure development, inter-regional connectivity, and basic services creates a large need for spending, while fiscal capacity is relatively limited. The combination of high development needs and narrow fiscal space causes local governments to face an increasingly sharp *fiscal trade-off* between meeting debt obligations and financing development (ADB, 2024; UNDP, 2023). The results of this analysis empirically support **Proposition 4**, namely: *A decrease in outstanding debt does not necessarily mean a decrease in fiscal pressure, because the annual debt service burden can remain large and bind the APBD*

In Maluku Province, despite the decline in the debt balance, the *debt service* burden remains at a significant level and is a permanent component in the APBD structure. In conditions of limited fiscal capacity, this burden directly reduces the fiscal space available for development financing. Furthermore, the simulation of debt increase shows that fiscal pressures can increase sharply to exceed the high risk threshold. This emphasizes that regional fiscal sustainability cannot be assessed solely on the basis of a decrease in debt stocks, but must consider fiscal ability to bear the burden of annual obligations.

CONCLUSION

Based on the results of the analysis, there are several main conclusions that can be formulated according to the purpose of the research.

1. Maluku Province's regional debt is formed through a dynamic trajectory that shows the transformation from a financing instrument to a source of fiscal pressure. In the initial phase, debt functions as a mechanism to accelerate development through intertemporal borrowing schemes. However, since entering the active amortization phase, debt has turned into a significant annual service expense, which is around Rp126-137 billion per year. These findings confirm that fiscal pressure is more relevant to be understood through the flow of liabilities (flow) than only through the stock of debt (stock).
2. The burden of debt service has been proven to directly affect the structure of regional revenue and expenditure. The debt-service ratio to revenue increased from around 4.35-4.49 percent in the 2023-2024 period to 9.15 percent in 2025. This increase suggests that the stability of the debt burden can nominally turn into significant fiscal pressures when revenue capacity declines. In terms of spending, debt service has become a structural component that competes with other public spending, thus causing a crowding-out effect on development financing.
3. Limited fiscal capacity is the main factor that strengthens debt pressure. Low fiscal independence (PAD < 25 percent), high dependence on central transfers (>75 percent), and increasing spending rigidity (employee spending up to 47.39 percent) indicate that Maluku Province's fiscal space is structurally very limited. In these conditions, debt is not

only an additional obligation, but also increases fiscal pressure because it must be borne in a fiscal system that is no longer flexible.

4. The implications of debt on fiscal space show increasingly depressed conditions, even tend to be negative. By 2025, total priority spending obligations and debt services will exceed total regional revenues, so fiscal space will be negative. Although outstanding debt has decreased, debt service expenses remain significant and bind to the APBD. Simulations of debt additions show that the debt-service to income ratio can increase to around 35.8 percent, which is well above the high risk threshold (>20 percent). These findings confirm that a decline in debt stocks does not necessarily reflect reduced fiscal pressures.

Overall, this study shows that Maluku as an archipelagic region, debt cannot be understood separately from fiscal capacity. The limitations of the fiscal structure cause debt to have a greater and faster impact on fiscal pressures than regions with stronger economic bases. Thus, fiscal sustainability in Maluku is highly determined by the ability to balance between development financing needs and available fiscal capacity.

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