Local Government Budget Resilience: Anticipatory, Coping, and Vulnerability Indexes

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ABSTRACT

The primary determinant for managing the financial distribution consequences of the COVID-19 pandemic is the resilience of the local budget. Having a substantial budget will facilitate the implementation of strategic programmes by the municipal administration during the COVID-19 pandemic, while also ensuring the maintenance of regional economic growth. The budget capability assessment attempts to evaluate the proficiency of municipal governments in Indonesia in managing the APBD. Assessing local budget resilience employs a descriptive quantitative methodology that encompasses three dimensions: anticipatory capability, coping capability, and vulnerability. The assessment employed secondary data through the process of archive analysis. The assessment results indicated that the municipalities of Mataram, Tidore, Batam, and Sabang achieved the highest budget resilience index. The government with the highest ranking possesses the capacity to effectively manage unanticipated issues such as the COVID-19 pandemic. However, the municipalities of Bengkulu, Bon-tang, and Tegal showed the lowest budget capacity index. The local government with the lowest index must enhance the management system of APBD to optimise its response to the economic consequences afterwards the COVID-19 pandemic.

Keywords: Budget, Resilience, Municipals, and COVID-19

Introduction

The COVID-19 pandemic has put a substantial financial burden on local government budgets due to increased spending and decreased revenue sources, perhaps leading to a financial crisis (Khandoker & Juniper, 2022). The worldwide economic crisis has significantly affected the financial and budgetary capacities of local governments. Local governments are currently facing financial difficulties marked by an increasing need for public services juxtaposed with a decrease in revenue as a result of the ongoing economic crisis (Clouston et al., 2021). The COVID-19 pandemic has the potential to cause a worldwide economic crisis that endangers all countries (Ball, 2021). Strengthening Indonesia’s regional budget capacity is essential for mitigating the possibility of a crisis. The regional governments were implementing temporary policies in response to the COVID-19 pandemic (Blackman et al., 2020).

Local governments must promptly respond to COVID-19 cases within their specific areas of jurisdiction to efficiently control the spread of the virus. The COVID-19 pandemic demonstrates the capacity of local governments to effectively address pandemics within
a reasonable timeframe, despite financial constraints. The prediction is a forthcoming decrease in revenues for municipal governments. It is crucial to immediately allocate budgetary resources to address the urgent need for economic improvement (Diptyanusa & Zablon, 2020). However, the budgetary framework of local governments in Indonesia still relies on funding from the federal government. The local government budgets in Indonesia primarily depend on the provision of balancing funds from the federal government (I. K. et al Indriani, 2022). The study undertaken in 2019 illustrates the limited degree of regional financial autonomy (I. K. Indriani et al., 2019). Currently, it is important to highlight that regional capabilities in terms of maintaining operational operations and providing public services have achieved a satisfactory level (I. K. et al Indriani, 2021). The classification of indicators for budget solvency and regional government service solvency as “good” hinges on their capacity to efficiently handle unforeseen circumstances (I. K. Indriani, 2023). The budget’s capacity plays a crucial role for local governments in dealing with unforeseen circumstances (Adriana & Ritonga, 2018). The direct relationship between the level of regional financial capability and the ability to cover regional spending (Putri Mulyaningsih & Nasehati Sunaningsih, 2022).

The purpose of this assessment is to provide a benchmark for evaluating the efficiency and improvement of budget management for local governments in addressing unforeseen events of a temporary nature. This study specifically examines three factors that measure the resilience of local budgets: anticipatory capability, coping capability, and vulnerability. Local budget resilience will be evaluated through the utilisation of index calculations. Regional authorities are currently implementing immediate measures to address the COVID-19 pandemic (Jabid et al., 2022).

Methods

The study employed a quantitative research methodology to analyse archival data. The study relies on collecting data by initially identifying variables as fundamental notions that would be connected to the existing theory, and using large amounts of data (Sugiyono, 2018). This study focuses on assessing the resilience of budget capacity by examining its predicting capacities, coping capabilities, and vulnerability. This study includes the local governments of Indonesia as the sample. The sample comprised 93 governments. The data used in this study are obtained from secondary sources. The above information relates to the report regarding the implementation of the Annual Regional Budget (APBD) for the period from 2021 to 2022. The aforementioned data was acquired from the Ministry of Finance of the Republic of Indonesia.

The assessment of the ability to withstand budgetary challenges is performed by comparing each research sample to established benchmarks. Moreover, the assessment of budget resilience utilises the indicator index technique and the dimensional index. The technique outlined above is specifically developed to generate a weighted grade that evaluates the financial health of the local government. The indicator index is a methodological approach used to transform raw data into a format that is suitable for analysis, as described by Ritonga (2015). A dimensional index is a method used to determine the relative importance of each indicator index by using the geometric mean in mathematics. This results in values ranging from 0 to 1 (Ritonga et al., 2019). In this technique, the calculation of the dimension index presupposes that the weight allocated to each indication index is comparable.

Result and Discussion

During the COVID-19 pandemic in Indonesia, the local government budget resilience index indicates that four regions demonstrate the highest score. Mataram, Tidore, Batam, and Sabang local governments attained the top positions in national rankings. The municipal administration displayed an exceptional level of fiscal capability throughout the COVID-19 pandemic. Conversely, the municipal governments of Bengkulu, Bontang, and Tegal were ranked the lowest. The assessment of the budget resilience index is carried out by utilising three dimensions.
Anticipatory Index

The anticipatory dimension index is a numerical measure that evaluates a region’s ability to efficiently handle and reconcile the actual revenue and expenditure levels within a specific budgeting period (Ritonga et al., 2019; Barbera Carmela, Enrico Guarini, 2020). The assessment of the budget solvency index depends on the utilisation of specific indicators, specifically the actualization of Special Allocation Funds (DAK), General Allocation Funds (DAU), operational expenses, and capital investment, during the calculation procedure. Figure 1 exhibits the results of the index calculation for 93 municipal governments in Indonesia, with values ranging from 0.10 to 0.65. The index values display a distribution ranging from 0.20 to 0.40. The anticipatory index indicates that Indonesian municipal governments possess the capability to sufficiently finance their budgets at the beginning of the COVID-19 pandemic.

Figure 1. Distribution Pattern of Anticipatory Index 2021 and 2022
Sources: Assessment result, 2023

The national level presents a variety of anticipatory indices for municipal government budgets, varying from 0.31 to 0.30. The COVID-19 epidemic has had no substantial impact on the regional ability to produce money and handle expenses. During the studied period, the local governments in Indonesia generated income of 140 trillion Rupiah in 2020, which then experienced a marginal increase to 147 trillion rupiahs in 2021. The recorded expenditure for the year 2021 totaled 137 trillion rupiahs, however in 2021 it rose to 149 trillion rupiahs. Amidst the COVID-19 epidemic, there was a 2 percent surge in the proportion of overall revenue to expenditure. The projected percentage for the year 2022 is predicted to be 26 percent. The aforementioned percentage suggests that the COVID-19 pandemic has had a minimal effect on the financial resources and spending ability of municipalities in Indonesia.

Coping Index

The local government coping abilities index is a measure that quantifies the resilience of the regional income and expenditure budget (APBD) to external financing sources, including both national and international organisations (Ritonga et al., 2019; Barbera et al., 2021; Kober & Thambar, 2021) The calculation of the coping capabilities index principally depends on the utilisation of fundamental factors such as the actualization of regional original income.
(PAD), DAU, DAK, and regional spending. Assessing the coping abilities will offer valuable information on the effectiveness of the APBD in carrying out the projects and programmes defined in the Regional Revenue and Expenditure Budget Plan (RAPBD) within a designated budgetary timeframe. The financial independence index values, illustrated in Figure 2, range from 0.10 to 0.60. The local government index value ranges between 0.30 and 0.05.

![Figure 2. Distribution Pattern of Coping Index](https://example.com/figure2.png)

*Figure 2. Distribution Pattern of Coping Index  
Sources: Assessment Result, 2023*

The coping capability index for local governments during the COVID-19 pandemic was 0.35 in 2021 and 0.41 in 2022, on a national scale. The degree of financial autonomy of municipal governments in Indonesia continues to rely on the earnings generated by central government transfer funds. Figure 3 provides visual evidence of this. The proportion of income realisations from DAU and DAK is still greater compared to PAD realisations. The actualization of Daily Active Users (DAU) amounted to 54 trillion rupiahs in 2020 and increased to 55 trillion rupiahs in 2021. The entire amount of DAK reached 13.8 trillion Rupiah and 14.5 trillion Rupiah, respectively. In 2020, the actual PAD amounted to 37.7 trillion rupiahs and 38.4 trillion rupiahs, respectively. Figure 3 shows that PAD accounts for 18 percent, DAU accounts for 26 percent, and DAK accounts for 7 percent. The local government budget resilience in Indonesia, as measured by the financial independence index, is relatively weak due to its heavy reliance on central government transfer funds. The PAD has a relatively small fraction, hence management should be optimised (I. K. Indriani, 2023).

**Vulnerability Index**

Vulnerability might be defined as a metric that evaluates a region’s ability to provide public services, considering the correlation between regional income and expenditure to the population (Anessi-Pessina et al., 2020; Barbera et al., 2021). The vulnerability index is a metric utilised to assess the financial capacity to efficiently strategize and implement public services following the needs of the community (Ritonga et al., 2019). The assessment of the service solvency index involves comparing the population’s actual realisation of regional revenue and spending. The recognition of revenue and expenses is a measure of the government’s efficiency in executing work programmes during a certain fiscal year (Saputra & Setiawan, 2021). The assessment of service solvency will give priority to examining the whole expenditure, including both capital and operating costs, as well as total revenue, daily active users
(DAU), and daily active key performance indicators (DAK) for the entire population. Based on Figure 3, the vulnerability index value for local government services in Indonesia remains unchanged from 2020 to 2021. The service solvency index has a range of 0.00 to 0.30. It is important to mention that only one local government achieved a perfect score of 1.00, which represents the highest level of accomplishment.

![Figure 3. Distribution Pattern of Vulnerability Index](source: Assessment Result, 2023)

**Conclusion**

The COVID-19 pandemic has had harmful effects on both public health and the local economy. The budget resilience assesses the municipal government's ability to maintain the condition of the Annual Regional Budget (APBD) in the face of financial shocks resulting from the pandemic. The assessment of the budget resilience index indicates that the municipalities of Mataram, Tidore, Batam, and Sabang demonstrate the highest index. Conversely, the local administrations of Bengkulu, Bontang, and Tegal exhibited the lowest index ratings. Local governments with higher index scores reflect robust capacities in efficiently administering the APBD, hence enabling them to implement plans more successfully in response to the COVID-19 pandemic. Municipalities with the lowest index values in terms of APBD management need to develop future optimisation measures to deal with financial shocks caused by the pandemic. The local budget capability index is greatly influenced by the actual level of regional income and expenditure. Moreover, it is essential to take into account demography and economic growth as important factors that go beyond the limits of regional fiscal capacity. Surabaya, Makassar, Palembang, Bandung, Semarang, Balikpapan, and Batam were the local administrations that achieved remarkable levels of APBD realisation during the COVID-19 pandemic. There is a direct relationship between the financial capacity of city governments and the number of COVID-19 cases. The incidence of this ailment is affected by a large population size and high community mobility, leading to an associated rise in the number of COVID-19 cases. The COVID-19 outbreak had a relatively minor effect on the revenue and spending. The municipal government can maintain the level of budget implementation to strengthen its budgetary capability in considering the current pandemic. The local government with the largest economy in Indonesia consistently ensures the successful implementation of its Annual Regional Budget (APBD).
However, municipalities with low financial resources and a strong reliance on government transfers should improve their financial management procedures, especially when dealing with unexpected events. This study was limited to the use of data from only two years. Further studies could utilise big data to enhance the level of assessment.

References


