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LOCAL GOVERMENT FISCAL RISK MONITORING: CASE STUDY IN BOGOR AND MERAUKE DISTRICTS

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Abstract

Some problems often faced by local governments in financing development are the gaps between regional needs that are not balanced with the fiscal capacity of the region so that a fiscal gap arises. Efforts are needed to carry out risk management through fiscal risks monitoring. This study was aimed to analyze and evaluate indicators of risks in regions that can affect local goverment fiscal. This study used various sub-indicators derived from five fiscal risk indicators, namely economic, financial, institutional, social and environmental indicators. Of the several indicators, the variables that pose a risk in Bogor District are water connection problem from water company (PDAM) that are still low (social indicators), budget allocation for the environment and unemployment issue, while in Merauke District, some problem that need to be considered are Infrastructure expenditure (economic indicators), local own-source revenue (PAD), fluctuated unemployment issue (economic indicators), regional independence ratios (financial indicators), social indicators particularly for water connection problems and budget allocation for the living environment.

Keywords: economic indicator, financial indicator, institutional indicator, social indicator, environmental indicator

Abstrak

Beberapa permasalahan yang sering dihadapi oleh pemerintah daerah dalam membiayai pembangunan adalah kesenjangan antara kebutuhan daerah yang tidak seimbang dengan kemampuan fiskal daerah sehingga timbul kesenjangan fiskal. Diperlukan upaya untuk melakukan manajemen risiko melalui pemantauan risiko fiskal. Penelitian ini bertujuan untuk menganalisis dan mengevaluasi indikator risiko di daerah yang dapat mempengaruhi fiskal pemerintah daerah. Penelitian ini menggunakan berbagai sub-indikator yang diturunkan dari lima indikator risiko fiskal, yaitu indikator ekonomi, keuangan, kelembagaan, sosial dan lingkungan. Dari beberapa indikator tersebut, variabel yang menimbulkan risiko di Kabupaten Bogor adalah masalah sambungan air dari Perusahaan Daerah Air Minum (PDAM) yang masih rendah (indikator sosial), alokasi anggaran untuk lingkungan dan masalah pengangguran, sedangkan di Kabupaten Merauke beberapa masalah yang yang perlu diperhatikan adalah belanja infrastruktur (indikator ekonomi), pendapatan asli daerah (PAD), masalah pengangguran berfluktuasi (indikator ekonomi), rasio kemandirian daerah (indikator keuangan), indikator sosial khususnya untuk masalah sambungan air dan alokasi anggaran untuk kehidupan. lingkungan.

Kata kunci: *indikator ekonomi, indikator keuangan, indikator kelembagaan, indikator sosial, indikator lingkungan*

INTRODUCTION

Background

Analysis of regional fiscal monitoring is relatively new in Indonesia. Fiscal risk can be defined as uncertainty in the future that can affect the implementation of fiscal policies that have been made previously. In the practice of government financial management in Indonesia, after one semester of the fiscal year is running, budget changes or re-budgeting are carried out in response to the non-fulfillment of the assumptions previously set.

Since regional autonomy was implemented in Indonesia, some Central Government authorities have shifted to the Local Government. By this change, the Local Government manages its own area in accordance with the aspirations of its community. This has the consequence of implementing fiscal decentralization, namely the Local Government is given the authority by the Central Government to manage its own finances as reflected in the Local Government Budget (APBD).

According to Brixi and Allen (2002), fiscal risk is the source of financial pressure that may be faced by the government in the future. Fiscal risk mainly occurs because of an uncertain event. Fiscal risks are often associated with government contingent liabilities.

In autonomy, particularly fiscal decentralization, there are two main factors discussed related to regional autonomy, namely fiscal needs and fiscal capacity, both of which can be linked in an effort to optimize Local Own-source Revenue (PAD) and become an inter-regional economic competition issue. Fiscal gap is defined as the difference between fiscal needs and fiscal capacity. The fiscal gap is considered a requirement that must be closed through Central Government transfers. Thus, the solution to cover the fiscal gap is by increasing fiscal capacity.

In implementation, some of the problems that are often faced by local governments in financing development are the imbalanced gap between fiscal need and fiscal capacity owned by the region so that the fiscal gap arises. Therefore, in order to run well the implementation of regional autonomy, the regional government should sincrease fiscal capacity to cover the possibility of fiscal gap by improving the management of regional revenues from Local Own-source Revenue (PAD) and the transfer of the fiscal balanced fund. The government should carry out fiscal risk management to anticipate this problem, especially during this pandemic.

Internationally, the capacity to carry out risk management varies greatly, yet the medium-term expenditure framework (MTEF) used in South Africa and Australia is a good example of how fiscal performance can be predicted and makes the government accountable for risk analysis and macroeconomic and demographic assumptions (Charter & Tania 2003). In the case of Australia, the occurrence of fiscal inequality can be seen from the low investment in physical and social infrastructure, so that a clear division of responsibilities between states and the Commonwealth Government is necessary (Grigg and Quiggin, 2005).

In Indonesia, risk management is mentioned in Government Regulation Number 60 of 2008 concerning the Government Internal Control System in the Third Part of Articles 13 through Article 17. The regulation requires the leadership of both central and regional Government Agencies to apply risk management principles in managing existing resources to achieve the goal of the relevant government agencies.

Policies carried out by the government should reflect the interests of the community, and the community should also gain an understanding of the importance of risk management and budgeting for risk. In order to ensure a prudent fiscal policy, policy makers must be able to understand the identification, classification and understanding of fiscal risks faced by the government. Therefore, discipline is required for fiscal behavior.

According to Carter and Ajam (2003), in analyzing the fiscal risk of a municipal, it can be assessed according to five criteria: financial indicator, economic indicator, socio-economic indicator, environmental indicator and institutional capacity.

As an illustration in social indicator, it turns out that a lot of government spending comes out of this problem, an unexpected problem. For example, with the current covid pandemic, which from health problems, raises economic problems and poverty problems. Not a few government funds are directed to overcome this pandemic. The government even issued a decision to reallocate and refocus the budget. In this case, the president issued a Presidential Instruction (INPRES) on Refocusing Activities, Realizing Budgets, and Procurement of Goods and Services in the Context of Accelerating Handling of Corona Virus Disease 2019 (Covid-19).

This study is focused on fiscal risks that occur in local governments, particularly in the city and district levels, where cities and districts in Indonesia are autonomous regions that are closer to the community. This study was conducted in two districts, namely Bogor District and Merauke Districts.

Problem Formulation

Bogor District is a district that is close to the capital of Indonesia which has relatively high economic growth that relies on the industry and trade sectors, while Merauke District is a district located in the eastern tip of Indonesia. Merauke District is one of the districts that have relatively high disaster opportunities based on Indonesia's disaster risk index in 2013.

In Bogor District, as an area that relies on the industrial sector, labor problems are a crucial problem, for example in determining the increase in minimum wages. In determining this wage, many workers participated in the demonstration. The number of workers who participated in the demonstration could reach 1,000 people, thus Bogor District Government collaborated with the police by deploying 500 personnel to secure this demonstration so as not to disturb other security and public order. This deployment requires a cost. Costs incurred by local governments to facilitate the security of demonstrations, these costs should be used to

improve the quality of public services in various sectors.

One indicator used in analyzing the fiscal risks of local governments according to Charter and Tania (2003) is an environmental indicator, once environmental problems occurs, a lot of budgets are needed to overcome problems and the impact of environmental problems. As stated by Brixi *et al* (2000) that a regional fiscal analysis will not be complete if it does not take into account "hidden fiscal risks" such as payments that are the responsibility of the government outside the established budget. In Merauke, as the easternmost region in Indonesia, based on data from the Regional Disaster Management Agency (BPBD) of Merauke District, Papua, it was recorded 11 districts and 42 villages in the district that are potentially prone to natural disasters. This has made Merauke District have a high vulnerability index according to the Indonesian Disaster Risk Index in 2013 due to floods, droughts and high-risk forest land fires. This might result in a lot of losses.

Therefore, in order to reduce the risk that occurs, it is necessary to perform a monitoring method to reduce fiscal risk so that it does not have a bad impact, particularly on the regional government budget. One of which is by providing a dashboard that can monitor the possibility of regional fiscal risk.

Research Objectives

Based on the background explained above, the objectives of this study were to:

1. Analyze risks in regions that can affect regional fiscal
2. Evaluate risks in the area that can affect regional fiscal

LITERATURE REVIEW

Local Government Fiscal Risk

Risk management, according to SBC Warburg (2004) is a set of policies, complete procedures, which are owned by the organization, to manage, monitor and control the organization's exposure to risk. Risk management is usually carried out by investors or fund managers when conducting an analysis to measure potential losses in investment. Then they take appropriate actions in accordance with the investment objectives and risk tolerance that has been analyzed.

Research on fiscal risk methodologies for local governments has been conducted in South Africa. According to research conducted by Charter & Tania (2003), risky local governments need to be saved by the national or provincial government, where the risk caused by the financial crisis, or it can be said is not a financial source to cover operating costs and commitments. In its methodology, this study looks at a number of criteria that can be used to assess how close the regional government to the financial crisis (financial indicators) and a local government show signs of progress towards the financial crisis seen from economic, social, institutional and environmental indicators.

The main principle in the development of the indicators carried out by Charter and Tania (2003) is that these criteria must be used in a differentiated role framework. National,

provincial and city/district governments should have different roles in managing fiscal risk.

METHOD

The study was conducted in Bogor and Marauke Districts. The data used are primary and secondary data. Primary data was obtained from the results of the Focus Group Discussion, while secondary data was obtained from BPS and Local Government Apparatus Organization (OPD) offices of Bogor and Marauke Districts.

The model of determining and simulating fiscal risk indicators is seen from several aspects such as economic, financial, institutional, social and environmental aspects. Furthermore, the determination of limits of indicators related to regional fiscal risk is adjusted according to the study of Charter and Tanian (2000) in South Africa, regarding the conditions in Indonesia. The indicator for monitoring fiscal risk is divided into 5 (five) indicators, namely economic, financial, institutional, social and environmental indicators. These indicators can be used as variables that can determine the possibility of the occurrence of fiscal risks both directly and indirectly. The variables that exist in each indicator are as follows:

1. Economic Indicators

Variables in this indicator adopt a research conducted by Charter and Tania, 2003, those are (1) growth in infrastructure expenditure (E_1) (2) growth of local government revenue (E_2) (3) percentage of GRDP in the highest sector (E_3) (4) percentage of labors in the highest sector (E4) (5) GRDP per capita growth (E_5) and (6) unemployment growth.

Table 1. Economic Indicators

No	Indicator	Scale			Basic Indicator Determination
1	Growth in Infrastructure expenditure	<= 0%	:	Very risky	Indonesia's average economic growth is 5%.
		0% -2%	:	Risky	
		2%- 5%	:	Safe	
		5% - 10%	:	Very safe	
		> 10%	:	Stable	
2	Local government revenue growth	<= 0%	:	Very risky	Indonesia's average economic growth is 5%.
		0% -2%	:	Risky	
		2%- 5%	:	Safe	
		5% - 10%	:	Very safe	
		> 10%	:	Stable	
3	GRDP in the highest sector	80% - 100%	:	Very risky	> 80%, according to Charter and Tania, there is a possibility if a sector has a very high role and labor, and if there is a problem in the sector, it is likely that the economy will become problematic.
		60% - 80%	:	Risky	
		40% - 60%	:	Safe	
		20% - 40%	:	Very safe	
		0 - 20%	:	Stable	
4	Percentage of labors in the highest sector	80% - 100%	:	Very risky	
		60% - 80%	:	Risky	
		40% - 60%	:	Safe	
		20% - 40%	:	Very safe	
		0 - 20%	:	Stable	
5	GRDP per capita growth	< 0%	:	Very risky	Indonesia's average economic growth is 5%.
		0% - 2%	:	Risky	
		2% - 5%	:	Safe	
		5% - 10%	:	Very safe	
		> 10%	:	Stable	

6	Unemployment growth	< 0%	:	Stable	The current unemployment rate in Indonesia is 0.14%, while according to Charter & Tania is <5%
		0% - 1%	:	Very safe	
		1% - 2,5%	:	Safe	
		2,5% - 5%	:	Risky	
		> 5%	:	Very risky	

Source: Adopted from Tania and Charter (2013)

Some of the factors considered in determining the indicator value are infrastructure expenditure growth, local government revenue growth and GDRP per capita growth. Indonesia's economic growth target with an average 5 percent. While indicators of GRDP and share of labors that work in the highest are obtained by using the assumption that the maximum 1 sector has the highest share of 80 percent. According to Charter and Tania (2003), if there is a problem there is a sector, particularly in the highest sector, it is likely that the economy will become problematic.

Other indicators such as unemployment growth and indicator valuation are taken from the results obtained by Charter and Tania which are adjusted to unemployment growth in Indonesia.

2. Financial Indicators

This indicator consists of (1) local government fiscal independence ratio (U1) and (2) ratio of local government personel expenditures to total expenditure (U2). The basic assessment of indicators at the level of independence, consists of 4 types of financial ability, namely (1) local government fiscal independence level of 0-25% is an instructive relationship pattern, where the central government is more dominant, (2) independence level of 25-50% is consultative relationship, (3) independence level of 50-75% is a participatory relationship and (4) independence level of 75-100% is a delegative relationship. Meanwhile, approximately 25 percent of the expenditure-base budget in Indonesia is given to civil servants.

Table 2. Financial Indicators

No	Indicator	Scale			Basic Indicator Determination
1	Local government fiscal independence ratio	< 20%	:	Very risky	Local government fiscal independence level of 24 percent is an instructive relationship pattern, where the central government is more dominant. The fiscal independence level of 25-50 percent is a consultative relationship, fiscal independence level of 50-75 is a participatory relationship and fiscal independence level of 75-100 is a delegative relationship.
		20% - 40%	:	Risky	
		40% - 60%	:	Safe	
		60% - 80%	:	Very safe	
		> 80%	:	Stable	
2	Ratio of personel expenditure to total expenditure	< 15%	:	Stable	Approximately 25 percent of the budget allocation in Indonesia for personel expenditure
		15% - 30%	:	Very safe	
		30% - 50%	:	Safe	
		50% - 80%	:	Risky	
		> 80%	:	Very risky	

Source: Adopted from Tania dan Charter (2013)

3. Institutional Indicators

One variable that is in accordance with the data conditions in the field, namely the ratio of local government personel to the optimal population which is 1.5 percent.

Table 3. Institutional Indicators

No	Indicator	Scale			Basic Indicator Determination
1	Local government personel ratio to population	0 - 1%	:	Stable	The optimum ratio of local government personel to the population is 1.5 percent
		1% - 2%	:	Very safe	
		2% - 3%	:	Safe	
		3% - 5%	:	Risky	
		>5%	:	Very risky	
2	Percentage of money spent on capacity building	> 5%	:	Stable	Approximately 2 percent in Indonesia
		2% - 5%	:	Very safe	
		1% - 2%	:	Safe	
		0,5% - 1%	:	Risky	
		< 0,5%	:	Very risky	
3	Meeting with the audit team	> 6	:	Stable	According to Tania and Charter, for 4 meetings with the audit team in Indonesia, an average of two audits were conducted in 1 year
		4 – 6	:	Very safe	
		2 – 4	:	Safe	
		< 2	:	Risky	
		Never	:	Very risky	
4	OPD leaders who have not been transferred within 1 year	> 20	:	Very risky	At most 1 mutation for 2 years with assumption there are 20 OPDs in 1 region
		10 – 20	:	Risky	
		5 - 10	:	Safe	
		<5	:	Very safe	
		Never	:	Stable	

Source: adopted from Tania dan Charter (2013)

4. Social Indicators

These indicators look not directly related, even though it is actually quite relevant. Socio-economic indicators include (1) Percentage of households without electricity (S_1), (2) Percentage of households without water (S_2), and (3) Percentage of people who do not have a house (S_3). The indicators used are based on research conducted by Charter and Tania, 2003.

Table 4. Social Indicators

No	Indicator	Scale			Basic Indicator Determination
1	Percentage of households without electricity	<=10%	:	Stable	<70%
		10% - 15%	:	Very safe	
		15% - 30%	:	Safe	
		30% - 60%	:	Risky	
		> 60%	:	Very risky	
2	Percentage of households without water	<=10%	:	Stable	<70%
		10% - 15%	:	Very safe	
		15% - 30%	:	Safe	
		30% - 60%	:	Risky	
		> 60%	:	Very risky	
3	Percentage of people who do not have a house	<=5%	:	Stable	<20%
		10% - 20%	:	Very safe	
		20% - 30%	:	Safe	
		30% - 60%	:	Risky	
		> 60%	:	Very risky	

Source: adopted from Tania dan Charter (2013)

5. Environmental Indicators

As with other indicators, this environmental indicator is very vulnerable to regional finance, yet the conditions of each region are not the same, so that one of the weaknesses of this indicator as well as social

indicators is that the demographic region across the country is very difficult to develop generic indicators that can be applied nationally. In this study, environmental indicators are analyzed, namely the ratio of budget allocation for the environment to total expenditure (L_1). Ideally, the disaster budget is 1 percent of the state revenue (APBN) or local government revenue (APBD). In this study, budget allocation is used for environmental matters.

Furthermore, it is also necessary to know the condition of the residence or places occupied by people in an area, whether at risk of a disaster or not. Some indicators related to the disaster location are as follows: (L_2) Percentage of houses/areas in flooded areas, (L_3) Percentage of houses/areas in fire-prone areas, and (L_4) Percentage of houses/areas that are located in landslide areas, (L_5) the area of Green Open Space. In Indonesia, an area is said as green open space if it has 30 percent of its area.

Table 5. Environmental Indicators

No	Indicator	Scale			Basic Indicator Determination
1	Budget allocation for the environment	0,25% - 0.5%	:	Stable	Ideally, the disaster budget is 1 percent of the APBN or APBD.
		0 - 0.25%	:	Very safe	
		< 1%	:	Safe	
		1% - 5%	:	Risky	
		5% - 10%	:	Very risky	
2	Percentage of houses/areas in flooded areas	10% - 30%	:	Stable	<20% (source: Charter & Tania)
		> 30%	:	Very safe	
		< 1%	:	Safe	
		1% - 5%	:	Risky	
		5% - 10%	:	Very risky	
3	Percentage of houses/areas in fire-prone areas	10% - 30%	:	Stable	> 20 % (source: Charter & Tania)
		> 30%	:	Very safe	
		< 1%	:	Safe	
		1% - 5%	:	Risky	
		5% - 10%	:	Very risky	
4	Percentage of houses/areas in landslide areas	10% - 30%	:	Stable	> 25 % (source: Charter & Tania)
		> 30%	:	Very safe	
		> 50%	:	Safe	
		40% - 50%	:	Risky	
		30% - 40%	:	Very risky	
5	Availability of Green Open Space	20% - 30%	:	Stable	Optimum area of green open space is 30 percent
		< 20%	:	Very safe	
		0,25% - 0.5%	:	Safe	
		0 - 0.25%	:	Risky	
		< 1%	:	Very risky	

Source: adopted from Tania dan Charter (2013)

Once the value of the fiscal risk indicator is obtained, the status of the fiscal condition of a regional government can be determined. In calculating the compilation of the value of regional fiscal risk conditions, considering the number of variables in economic indicators is higher than other indicators, it is necessary to carry out weighting where economic variables have a weight of 2 times that of other indicators. Once the status and indicators are known, a

strategy can be determined to reduce the occurrence of fiscal problems in the local government.

RESULT AND DISCUSSION

Analysis of Local Government Risk in Bogor District

Fiscal risk analysis can be seen in its monitoring system component adopted from Carter and Tania's 2003 research in South Africa. The components of the regional fiscal risk monitoring system include economic, financial, institutional, social and environmental indicators.

1. Economic Indicator

On economic indicators, several variables analyzed are (a) growth in infrastructure expenditure, (b) growth of local government revenues, (c) percentage of GRDP in the highest sector, (d) percentage of labor in the highest sector, and (e) GRDP per capita growth.

Based on the results of regional fiscal risk analysis in Bogor District by 2011-2016, the overall economic indicator variables are in safe condition in 2011, 2012, 2014 and 2016 and are very safe in 2013 and 2015.

Indicators of Infrastructure expenditure growth in Bogor District in the period of 2011 to 2014 are in a stable condition, where the development of Infrastructure expenditure is more than 10 percent annually. Furthermore, growth in infrastructure expenditure experienced a decline in 2012. This is because the Bogor District Government has made infrastructsure investments in previous years, so that Infrastructure expenditure in 2015 and 2016, despite increasing, yet the increase was lower. The value of growth in investment expenditure in Bogor District is above the average economic growth of Indonesia, which is 5 percent. Investment expenditure in 2010 was IDR 383 billion, increased to IDR 450 billion, increased again to IDR 565 billion and increased to IDR 964 billion in 2016.

Table 6. Economic Indicator in Bogor District, 2011-2016

Year	Variable												Average	Condition
	E1		E2		E3		E4		E5		E6			
	%	Scale	%	Scale	%	Scale	%	Scale	%	Scale	%	Scale		
2011	17.48	5	71.60	5	57.14	3	28.86	4	12.23	5	8.59	1	4,40	Very safe
2012	25.45	5	53.00	5	56.60	3	28.86	4	-1.24	1	-10.64	5	3,67	Safe
2013	34.47	5	20.08	5	55.66	3	26.82	4	10.21	5	-8.45	5	3,67	Safe
2014	10.25	5	36.08	5	55.22	3	27.77	4	8.64	4	-2.69	5	4,20	Very safe
2015	9.30	4	16.89	5	54.82	3	28.74	4	8.51	4	30.83	1	3,40	Safe
2016	5.27	4	14.48	5	54.74	3	28.31	4	7.05	4	-3.15	5	3,67	Safe

Description:

E1 Growth in Infrastructure expenditure

E2 Local government revenue growth

E3 Local Government GRDP in the highest sector

E4 Percentage of labors in the highest sector

E5 GRDP per capita growth

E6 Unemployment growth

2. Financial Indicator

In financial indicators, several variables analyzed are (a) ratio of regional independence and (b) ratio of local government personel expenditures to total expenditure. Based on the results of the fiscal indicator in 2011-2016, it is known that the two variables on the financial indicators are in a safe and very safe condition. Bogor District is one of the Districts in West Java Province which has a very good regional autonomy and personnel expenditure ratios to total expenditure, thus it is only natural for the last few years (2011-2013) to have a safe status and the last three years (2014-2016) status very safe. However, based on the condition every year, it is known that local government independence ratio in 2011 was in a risky condition. This is because the value of the independence ratio in Bogor District in 2011 was 38 percent or more than 20 percent. In 2012 and 2013, it was in a safe condition with values above 40 percen.

Table 7. Financial Indicators in Bogor District, 2011-2016

Year	Variable				Average	Condition
	Local government fiscal independence ratio		Ratio of personel expenditure to total expenditure			
	%	Scale	%	Scale		
2011	38.46	2	41.33	4	3.00	Safe
2012	51.17	3	40.12	4	3.50	Safe
2013	45.11	3	39.21	4	3.50	Safe
2014	68.56	4	43.54	4	4.00	Very safe
2015	77.39	4	40.20	4	4.00	Very safe
2016	85.14	5	39.14	4	4.50	Very safe

Description:

* fiscal independence ratio 24 %: instructive, state more dominant than local government
fiscal independence ratio 25-50 %: consultative, fiscal independence ratio 50-75 %: partisipative and 75-100 %: delegative

** 25 % budget for personal expenditure

3. Institutional Indicator

In institutional indicators, the variables analyzed are the ratio of local government personnel to population. The higher level of ratio indicates that the higher the level of dependence of population income from local government funding. Thus, if there is a decrease in the government budget, this could have an impact on the local government personnel expenditure payments. According to Kemenpan (State Minister for the Empowerment of State Apparaturs), the optimal ratio of local government personnel to population is 1.5 percent. Over the past five years (2011-2015), the ratio of the number of local government personnel to the population in Bogor District ranged from 0.97 to 1.08 percent. This trend ratio has declined from year to year despite a relatively small decrease of 0.01 percent annually. This condition over the last five years shows a stable condition and does not show risks to the fiscal conditions of Bogor District

Table 8. Institution Indicator in Bogor District, 2011-2016

Year	Local government personnel ratio to population		Condition
	%	Scale	
2011	1.08	4	Very safe
2012	0.99	5	Stable
2013	0.96	5	Stable
2014	0.95	5	Stable
2015	0.97	5	Stable
2016	0.97	5	Stable

4. Social Indicator

Several variables analyzed in social indicator are (a) percentage of households without electricity, (b) percentage of households without water, (c) percentage of people who do not have a house, and (d) unemployment growth.

Table 9. Social Indicator in Bogor District, 2011-2015

Year	Variable						Average	Condition
	Percentage of households without electricity		Percentage of households without water		Percentage of people who do not have a house			
	%	Skala	%	Skala	%	Skala		
2011	42.16	2	48	2	16	3	3.33	Safe
2012	35.94	2	48	2	16	3	3.33	Safe
2013	35.86	2	48	2	16	3	3.33	Safe
2014	25.53	3	43	2	15	4	3	Safe
2015	19.77	3	33	2	14	4	3	Safe
2016	15.16	4	42	2	14	4	3	Safe

In 2013-2016, the overall social indicator variables are in a safe and very safe condition. The variable percentage of households without electricity throughout the year is less than 10 percent so that they are in a stable condition. This shows that only a small number of households in Bogor District do not have access to electricity in their area. This condition also shows the good supply of electricity by the Local Government of Bogor District, although in the future it is expected that all households can access electricity. The thing that is still an obstacle in providing access to electricity for the people in Bogor District is the condition of villages in Bogor District that still have poor infrastructure and are difficult to reach with four-wheeled vehicles. So that in the future the development of electricity network access must be preceded by road infrastructure development.

Furthermore, variable percentage of waterless households is in a safe condition. Irrigation facilities need to be increased so that people can access water thoroughly is very necessary. Irrigation infrastructure should continue to be developed. In order to improve this condition, the Bogor District Government in 2017 has collaborated with the United States donor agency, nemely United States Agency for International Development (USAID) to provide

sanitation and clean drinking water to households in Bogor District.

Percentage of people who do not have a house in Bogor District is in safe condition in 2013-2015. This is because the percentage of people who do not have a house in Bogor District is less than 20 percent, so it can still be said to be in a safe condition. Housing is a basic human need, thus to improve human resources in Bogor District, the access to livable houses also needs to be improved. In order to improve the fulfillment of decent housing needs for the poor, the village government builds cooperation with a number of parties, particularly the Unqualified Housing Program (RTLH) of the Building and Settlements Office (DTBP) in Bogor District. This is expected to reduce the level of fiscal risk in Bogor District.

5. Environmental Indicator

Indicators of environmental variables analyzed are the ratio of budget allocation for the environment to total expenditure. Based on the results of the fiscal risk analysis in Bogor District in 2011-2016, the environment variable was in a safe condition with the lowest range was 0.34 percent and the highest was 0.49 percent. According to the Head of National Disaster Management Agency's Data and Information (BNPB), the ideal value for expenditure allocation on environmental expenditure/disaster management is 1 percent of total regional expenditure. So far, the ratio of the total budget for the environment to total expenditure is still in the range 0.2-0.3 percent. Disaster events and environmental damage are unpredictable events both from the frequency of occurrence and the severity. Thus, the local government should try to re-increase the budget allocation for the environment in an effort to anticipate and mitigate disasters/environmental damage.

Table 10. Environment Indicator in Bogor Regency, 2011-2016

Year	Budget allocation for the environment		Condition
	%	Scale	
2011	0.44	2	Risky
2012	0.44	2	Risky
2013	0.44	2	Risky
2014	0.34	2	Risky
2015	0.35	2	Risky
2016	0.49	2	Risky

Analysis of Local Government Risk in Merauke District

1. Economic Indicator

The results of fiscal risk analysis for economic indicators in Merauke District in the period of 2011-2016 were in safe condition in 2011, 2012, 2014 and 2016 and were very safe in 2013 and 2015.

Table 11. Economic Indicator in Merauke District, 2011-2016

Year	Variable												Average	Condition
	E1		E2		E3		E4		E5		E6			
	%	Sc	%	Sc	%	Sc	%	Sc	%	Sc	%	Sc		
2011	7,53	4	8,88	4	33.52	4	44.30	3	7,07	4	45.40	1	3.00	Safe
2012	7,53	4	-9,21	1	31.57	4	46.40	3	11,37	5	-20.05	5	3.50	Safe
2013	7,53	4	-4,22	1	29.93	4	49.31	3	13,08	5	63.31	1	2.83	Risk
2014	7,53	4	50,53	5	28.41	4	46.95	3	12,17	5	-26.98	5	4.17	Very Safe
2015	102,21	5	4,57	3	27.37	4	51.70	3	14,42	5	48.98	1	3.33	Safe
2016	-59,36	1	17,52	5	26.19	4	51.70	3	11,21	5	16.31	1	3.00	Safe

Description:

Sc Scale

E1 Growth in Infrastructure expenditure

E2 Local government revenue growth

E3 Local Government GRDP in the highest sector

E4 Percentage of labors in the highest sector

E5 GRDP per capita growth

E6 Unemployment growth

Indicators of infrastructure expenditure growth in 2011 to 2014 were in very safe conditions, where the development of infrastructure expenditure is 7.53 percent annually. Furthermore in 2015, expenditure growth experienced an increase so that conditions were stable. In 2016, infrastructure expenditure decreased by 60 percent.

2. Financial Indicator

The results of the analysis of regional fiscal risk indicators in Merauke District in the period of 2011-2016 show that the two variables in the financial indicators are at risk, especially for the regional autonomy variables that have very risky conditions in the period of 2011 to 2016. This is because the revenue of the Merauke District Government is smaller than the fiscal balance funds with the highest around 10 percent, which occurred in 2011 and 2016. This condition can be said to be instructive, where the central government is more dominant. The best independence is if it reaches more than 70 percent, where in this condition the relationship between the regional government and the central government is delegative.

Table 12. Financial Indicators in Merauke District, 2011-2016

Year	Variabel				Average	Condition
	Local government fiscal independence ratio*		Ratio of personel expenditure to total expenditure**			
2011	10,59	1	39.97	3	2	Risk
2012	8,81	1	33.30	3	2	Risk
2013	6,77	1	31.07	3	2	Risk
2014	9,09	1	31.37	3	2	Risk
2015	8,85	1	29.83	4	2.5	Risk
2016	10,78	1	27.38	4	2.5	Risk

* fiscal independence ratio 24 %: instructive, state more dominant than local government

fiscal independence ratio 25-50 %: consultative, fiscal independence ratio 50-75 %: partisipative and 75-100 %: delegative
** 25 % budget for personal expenditur

3. Institutional Indicator

In institutional indicators, the variables analyzed are the ratio of local government personnel to population and the percentage of money used for capacity building. In the period of 2011 to 2016, range of this ratio around 0.95 to 1.08 percent. This condition shows a stable condition.

Table 13. Institution Indicator in Merauke District, 2011-2016

Year	Local government personnel ratio to population		The percentage of money used for capacity building		Average	Condition
	%	Scale	%	Scale		
2011	1.08	4	0,32	1	2,5	Risk
2012	0.99	5	0,57	2	3,5	Safe
2013	0.96	5	0,17	1	3	Safe
2014	0.95	5	0,52	2	3,5	Safe
2015	0.97	5	0,21	1	3	Safe
2016	0.97	5	0,10	1	3	Safe

Furthermore, infrastructure expenditure on capacity building for local government personnel is fluctuating in Merauke District. The value of capacity building is less than 1 percent. The Merauke District Government should increase its capacity building to improve the quality of local government personnel.

4. Social Indicator

Several variables analyzed in this indicator are (a) percentage of households without electricity, (b) percentage of households without water, (c) percentage of people who do not have a house, and (d) unemployment growth. Of these four variables, only 2 variables have available data, namely the percentage of households without electricity and water.

Table 14. Social Indicator in Merauke District, 2011-2015

Year	Variable				Average	Condition
	Percentage of households without electricity		Percentage of households without water			
	%	Scale	%	Scale		
2011	43.46	2	92.84	1	1.5	Very Risk
2012	40.42	2	92.87	1	1.5	Very Risk
2013	30.84	2	93.01	1	1.5	Very Risk
2014	21.22	3	92.01	1	2	Risk
2015	13.75	4	93.85	1	2.5	Risk
2016	10.42	4	93.31	1	2.5	Risk

5. Environmental Indicator

A variable analyzed in this indicator is ratio of a budget allocation for the environment to total expenditure. The variable environment approach uses expenditure data for environmental matters. In fact, the

environmental expenditure approach is not only used for this matter, but due to data limitations for this variable, the realization of budget allocation for the environment is used.

Table 15. Environment Indicator in Merauke Regency, 2011-2016

Year	Budget allocation for the environment		Condition
	%	Scale	
2011	0.44%	2	Risky
2012	0.44%	2	Risky
2013	0.31%	2	Risky
2014	0.40%	2	Risky
2015	0.49%	2	Risky
2016	0.11%	1	Very Risky

In 2011-2016, the environmental variables is in the risky conditions with the lowest range were 0.34 percent and the highest was 0.49 percent. According to the Head of National Disaster Management Agency's Data and Information (BNPB), the ideal conditions for budget allocation on environmental expenditure/disaster management is 1 percent of total regional expenditure. So far, the ratio of the total budget for the environment to total expenditure is still in the range 0.2-0.3 percent. Disaster events and environmental damage are unpredictable events both from the frequency of occurrence and the severity. Thus, the local government should try to re-increase the budget allocation for the environment in an effort to anticipate and mitigate disasters/environmental damage.

Fiscal Risk Conditions in Bogor and Merauke District

Overall, fiscal risk indicators in Bogor and Merauke Districts in the period of 2011-2016 can be seen in Table 8. In this Table, the two sub-indicators of the Districts are made equal. Overall in Bogor District, which is an area that relies on the manufacturing and service industries, has a fiscal risk indicator value better than Merauke District which is an area that relies more on natural resources, where Merauke District receives funds for this high balance of natural resources.

By comparing to each indicator in the period of 2011 to 2016 (financial, social, institutional and environmental indicators), Bogor Districts have a higher indicator value. Meanwhile, social indicator in Merauke Districts began to increase in 2014 and 2015. This was allegedly due to soaring household electrification rates.

Table 16. Fiscal Risk Conditions in Bogor and Merauke Districts

Year	Bogor		Merauke	
	Average	Condition	Average	Condition
2011	2.77	Risky	2.50	Risky
2012	3.17	Safe	2.80	Risky
2013	3.30	Safe	2.67	Risky
2014	3.47	Safe	3.03	Safe
2015	3.30	Safe	3.07	Safe
2016	3.53	Safe	2.80	Risky

The value of economic indicators between the two regions is not so different, yet for financial indicators, the comparison of the two districts is quite far. This is because Bogor District is more independent in its financial management, where the ratio of PAD and balancing funds in Bogor District is higher than Merauke District.

Table 17. Comparison of Sub-Indicators between Bogor District and Merauke District, 2011 - 2016

Year	Economic		Financial		Social		Institution		Environment	
	1	2	1	2	1	2	1	2	1	2
2011	3.83	3.00	2.00	2.00	2.00	1.50	4.00	4.00	2.00	2.00
2012	3.83	3.50	3.00	2.00	2.00	1.50	5.00	5.00	2.00	2.00
2013	4.50	2.83	3.00	2.00	2.00	1.50	5.00	5.00	2.00	2.00
2014	4.33	4.17	3.50	2.00	2.50	2.00	5.00	5.00	2.00	2.00
2015	3.50	3.33	3.50	2.50	2.50	2.50	5.00	5.00	2.00	2.00
2016	4.17	3.00	4.00	2.50	3.00	2.50	5.00	5.00	2.00	1.00

Description:
1: Bogor District
2: Merauke District

Furthermore, budget allocation for the environment in both districts is still relatively low at less than 1 percent. Some factors that need to be considered in Bogor District are water connection problem from water company (PDAM) that are still low (social indicators), budget allocation for the environment and unemployment issue. Therefore, Bogor District Government needs to increase more attention to overcome these problems.

Some things to consider in Merauke District are infrastructure expenditure problem (economic indicators), Local Own-Source Revenue (PAD), fluctuated unemployment issue (economic indicators), regional independence ratios (financial indicators), social indicators particularly water connection problem and budget allocation for the environment.

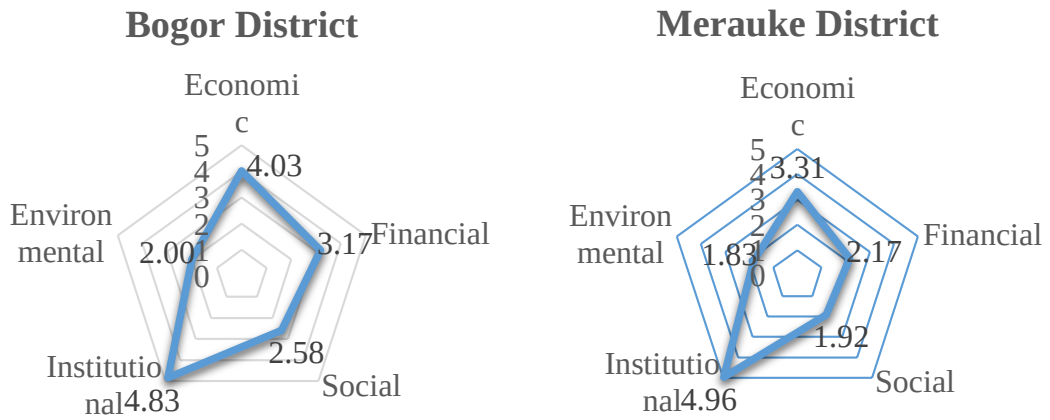

Figure 1. Pentagon of Average Value of Fiscal Risk Indicators in Bogor and Merauke District, 2011-2016

Overall from 2011 to 2016, Bogor District had good value for economic, financial and institutional indicators. As for social and environmental indicators, these two indicators need to get more attention because they still have low values. Meanwhile in Merauke District, economic and institutional indicators are good enough, yet for financial, social and environmental indicators need to get more attention. Particularly for financial indicators, the level of independence of Merauke District is still very low compared to the fiscal balanced funds.

CONCLUSION AND RECOMMENDATION

Conclusion

1. Existing indicators and sub-indicators can be used to monitor regional fiscal conditions. Based on these sub indicators, the components that build this sub indicator are further analyzed.
2. Based on the analysis, several sub-indicators have been found to affect regional fiscal. Some of the problems that need to be considered in Bogor District are the problem of water connections from water company (PDAM) that are still low (social indicators), funds for the environment and the problem of unemployment. Therefore, the Bogor District Government needs to increase more attention to these issues. Meanwhile, in Merauke District, several problems that need to be considered are infrastructure expenditure (economic indicator), Local Own-Source Revenue (PAD) growth, fluctuated unemployment problems (economic indicator), regional independence ratios (financial indicators), social indicator particularly water connection issue and budget allocation for the environment.

Recommendation

Overall indicators and assessments used are in accordance with those occurring in the local government. Therefore, it is better to conduct further analysis so that the indicators and assessments used are more in line with the conditions in the field.

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