



Budget Ratcheting in Indonesia and The Implementation of Performance-Based Budgeting System During Pandemic

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ABSTRACT

In Indonesia, the regulation emphasizes the implementation of a performance-based budgeting system. However, the implementation of this system is questioned as the ratcheting effect tends to occur in the budgeting process in local government. The inefficiency that arises due to the occasion should be reduced by transforming it into the performance-based system, especially when a pandemic occurs. Reallocation of budget produced by incremental-line system should be implemented to minimize the risk of the pandemic on social welfare. The data used in this model are APBD data in 2013-2108 from the Ministry of Finance. Regression models and study literature are used in this study to identify the budget ratcheting that occurred in Indonesia and examine the implementation of performance-based budgeting that can reduce the occurrence of government budget behavior bias in the form of a ratchet effect when a pandemic occurs. The result of this study shows that there is an indication of the existence of asymmetric ratchet. As it may lead to inefficiency, to face a pandemic situation, the government should conduct performance target adjusting and program restructuring by reallocating the budget.

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1. Introduction

Public sector transformation in Indonesia was initiated after Asian Financial Crisis 1998. The Asian financial crisis affected Indonesia's economy and Indonesia's social condition profoundly. Before the crisis, there was no effective legal framework for budgeting in Indonesia (Blöndal, Hawkesworth, & Choi, 2009). Great power was also centralized in central government. The financial crisis triggered political and economic upheaval in Indonesia. Today, the Parliament is elected directly and has great powers, include in the area of budgeting. Indonesia also transformed from centralized government process into decentralized programs.

One of the laws that regulate the decentralization is The Law of State Finance No. 17/2003. Based on this law, local and central governments should prepare and publish their budget. The granting of authority to local governments to regulate and manage their own governmental affairs which becomes their authority has implications for the delegation of authority among the parties (stakeholders) related to budgeting in the regions (Halim & Abdullah, 2006). As budgeting process needs several steps that involve both executive and legislative, this process has the risk of bias and corruption (Larkey & Smith, 1989). Although it has significant risks during budgeting, government should allocate limited resources to fulfill economic, political, social, legal and administrative functions, with approval from parliament. The spending priorities should be optimized for social welfare. Hence, budgeting is very important because it becomes the foundation for the implementation of development programs and public services (Abdullah, 2012).

In Indonesia, the planned expenditure is determined after the funding sources are confirmed. Therefore, the independence of the region to meet the needs of funding for these expenditures is determined by the ability of the local government to obtain revenue sourced from local's potential, which is called local revenue (Abdullah & Junita, 2016). However, local revenue only account small percentages of total revenue that used by local governments on their budget. Based on data from





Directorate General of Fiscal Balance, in 2014-2018, local revenue only shares 10%-13% of their total revenue. Even in some regions in Eastern Indonesia, local revenue only accounts for less than 5% of total revenue. Based on this fact, there are other factors that affect the structure of government spending.

It is true that Indonesia budget system reforms emphasizes the adoption of a performance-based budgeting system. However, the lower regulations (such as government regulations and president regulations) reinforce the practice of line-item and incremental budgeting (Prabowo, Leung, & Guthrie, 2018). An incremental budget is a budget prepared using a previous period's budget or actual performance as a basis with incremental amounts added for the new budget period. Tucker (1982) in his paper said that incremental models are linear and longitudinal in which a current budget is affected by a previous budget decision made within the government. Furthermore, several studies found that there are positive relationship between budget variance (the difference between actual and budgeted income) for the current period and the budget for the next period (Lee & Plummer, 2007; Leone & Rock, 2002; Lim, 2011). This relationship is called by budget ratcheting. Those studies also found that the shortfall in current period income is not related to the amount of future income.

As incremental-line budget tends to be less effective, if it still occurs, government should transform it gradually. In several condition, like natural disaster or pandemic situation, government can try to transform the incremental-line budget system by reallocating budget into the most crucial sector. These kinds of occasions usually have a great impact on national and even global economic condition. Coronavirus disease (COVID-19) for example, suddenly change global economic condition. As COVID-19 pandemic continues and the economic consequences are becoming increasingly severe, its impact on public at this time of economic uncertainty and market volatility should be examined (Barshay et al., 2020). Due to its impact, government must adjust their budget to assure that public receive the minimum risk of the pandemic. A budget resulted from incremental-line budget system should be adjusted.

Based on this background, this study aims to identify the budget ratcheting that occurred in Indonesia and its impact on budgeting in Indonesia. This study also aims to knowing the success of changing the government budgeting paradigm with the implementation of performance-based budgeting can reduce the occurrence of government budget behavior bias in the form of a ratchet effect when pandemic occurs.

2. Literature Review

Public budgeting has a massive impact on social welfare. Therefore, choosing a public budgeting approach is crucial. After the Asian Financial Crisis in 1998, Indonesia has transformed its budgeting system from the incremental-line budgeting system into a performance-based budgeting system. Performance-based budgeting began to be implemented in Indonesia starting in 2001 based on PP No.105 / 2000. This system is implemented in conjunction with the decentralization of authority to local governments. The implication of decentralized budgeting in work units is the existence of an incomplete contract between executive and legislative, in the form of performance targets and the number of resources (input) needed to achieve these targets. The weakness of this system is that the budget proposer always wants a larger allocation (budget maximizer) or does moral hazard (Blais & Dion, 1990; Smith & Bertozzi, 1998). Wildavsky & Caiden (1988) in their book wrote that limited resources make the allocation decision making process very dynamic and make budgeting the most important mechanism for allocating resources. This limitation triggers a number of problems, one of them is the ratchet effect.

The ratchet effect in budgeting arises in the form of executive opportunistic behavior by modifying the realization of the current year's budget towards the end of the fiscal year (Susanto & Halim, 2018). Ratcheting occurs when positive variances in performance from previous year's budget lead to greater absolute changes in the following year's budget than do changes associated with negative budget variances of the same magnitude (Leone & Rock, 2002; Weitzman, 1980). With the ratchet effect, the budget in the coming period will be the same as the current period budget plus adjustments (ratchet effect) determined based on the difference between actual (realized) outcomes compared to the budget in the current period (Aranda, Arellano, & Davila, 2014; Lee & Plummer, 2007; Marlowe, 2009; Weitzman, 1980). The effect of the ratchet on the government budget is often associated with the loss of society due to inefficient budget growth (Lee & Plummer, 2007).

As ratcheting budget is produced by incremental-line budget system, which is inefficient, it should be reduced by transforming the budget system. One of the conditions that insist this transformation is pandemic, like AIDS or COVID-19. COVID-19 may still turn out like this, with a few weeks of





disruption and then a lot of catching up of lost production and consumption. The impacts on global and regional growth of such a scenario are still highly uncertain, but some early estimates suggest large downsides. Supply chain disruptions may also turn out to be larger and more extended than is currently evident and how governments deal with the crisis may have lasting consequences for stability and trust (Baldwin, Weder, & Mauro, 2020).

How the government allocates and transforms the budget will be important in this situation. As the reallocating budget is essential, the government should consider several things. To face the pandemic situation, budget reallocation should consider two major components, namely direct costs and other impacts of increased ill-health and the implication of changing economy and demography structure that may occur (Waal, 2003).

In Indonesia, there are several studies on the effects of ratcheting such as Abdullah & Junita (2016) that discuss about budget ratcheting in Aceh and Susanto & Halim (2018) that examined the ratcheting effect in Yogyakarta. Abdullah & Junita (2016) analyzed about empirical evidence on the effect of budget ratcheting towards relationship between local revenue and expenditure in district / city in Aceh. They found that local revenue affects regional spending and budget ratcheting moderates the relationship between them. In Yogyakarta, Susanto & Halim (2018) analyzed about effect of ratchet on local government budgets, especially on regional government work units. They found that ratchet effect occurs in both PAD (local revenue) and direct expenditure budgeting.

Budgeting during pandemic is challenging as its economic impact will affect social welfare. Some models have rather modest and optimistic estimates for economic impact such as in Cuddington (1993) and Laubscher, Smit, & Ellis (2003), while other studies show an extreme one such as in Becker, Philipson, & Soares (2001) and Sachs (2001). A basic shortcoming of complex models is that they focus overwhelmingly on the size of the economy and neglect its structure. An economic contraction of, say, 10 percent does not just imply a smaller economy, but also a structurally changed economy (Waal, 2003). Budget ratcheting and budget reallocation during a pandemic situation are indirectly correlated. In some cases, ratcheting indicates budget inefficiency, the increasing budget is only determined by the previous budget, not based on programs that will be conducted. Therefore, the budgeted expenditures can be allocated to face a critical situation like the COVID-19 pandemic.

Based on those backgrounds and previous studies, there are two research question on this study:

- a) Do ratchet effect occur in public sector budgeting, especially in Indonesian local government budgeting?
- b) How performance-based budgeting can reduce the occurrence of government budget behavior bias in the form of a ratchet effect in pandemic situation?

3. Data and Methodology

This study uses data of regional budget (APBD) from Directorate General of Fiscal Balance, Ministry of Finance in 2013-2018 both for budgets and realizations. Due to the availability of the data, the observation that used in this study only 152 observations from 170 observations.

The models in this study adopt some models from previous studies with several modification due to the availability of the data. The first model based on Weitzman (1980) as below:

$$A_APBD_t - A_APBD_{t-1} = \alpha_0 + \alpha_1(R_APBD_{t-1} - A_APBD_{t-1}) \dots \dots \dots 1$$

In where A_APBD is budgeted expenditures and R_APBD is actual expenditure. The coefficient α_1 represent the rate at which budgeted expenditure adjust to the previous year's budget variance.

The second model that used in this study is adopted from Lee & Plummer (2007). They modified the Weitzman's model as in Eq.1 using differential adjustment coefficient as below:

$$A_APBD_t - A_APBD_{t-1} = \beta_0 + \gamma^+(R_APBD_{t-1} - A_APBD_{t-1}) + \gamma^-U_t(R_APBD_{t-1} - A_APBD_{t-1}) \dots \dots \dots 2$$

Where U_t equals 1 when the jurisdiction underspends and 0 otherwise, γ^+ is the adjustment coefficient for overspending, and γ^- is the differential coefficient for underspending. The sum of $(\gamma^+ + \gamma^-)$ is the adjustment coefficient for underspending. Then, when $(\gamma^+ + \gamma^-)$ it means that the data respond more to overspending than to underspending.

The last model that used in this study is modified from Marlowe (2009) as below:





$$\frac{A_APBD_t - A_APBD_{t-1}}{A_APBD_{t-1}} = \frac{\theta_0}{A_APBD_{t-1}} + \frac{\theta_1 U}{A_APBD_{t-1}} + \frac{\gamma^+(R_APBD_{t-1} - A_APBD_{t-1})}{A_APBD_{t-1}} + \frac{\gamma^- U_t (R_APBD_{t-1} - A_APBD_{t-1})}{A_APBD_{t-1}} + \frac{\delta^+ U_t (R_PAD_{t-1} - A_PAD_{t-1})}{A_APBD_{t-1}} + \frac{\delta^- D_{rev} (R_PAD_{t-1} - A_PAD_{t-1})}{A_APBD_{t-1}} + \theta_2 \Delta Pop) \dots\dots\dots 3$$

Where A_PAD is budgeted local revenue and R_PAD is actual local revenue, D_{Rev} equals 1 if the jurisdiction over-forecasted revenues in period t-1.

Study literature is also used in this study to examine how performance-based budget system will be applied in pandemic situation like in COVID-19 pandemic.

4. Result and Implication

Descriptive statistics for total local expenditure and local revenue are presented in Table 1 as below:

Table 1
Descriptive Statistics of Expenditure and Local Revenue

Year	Expenditure		Local Revenue	
	under-spending	over-spending	under-forecast	over-forecast
2014	24	1	21	4
2015	25	7	23	9
2016	19	11	14	16
2017	25	6	10	21
2018	26	8	24	10

Based on Table 1, in general, under-spending and under-forecast are more common than over-spending and over-forecast, about 80 percent and about 60 percent are under spending and under-forecast, respectively. These figures indicate that the planning, both for expense and revenue, are not good enough. Nonetheless, both variables also have comparatively high variances, which indicates variance behavior is heterogenous overall.

Regarding the growth of expenditure and local revenue, it is not surprisingly that they increase every year. Based on the data, the expenditure and local revenue increase at average 11.3 percent and 12.9 percent per year during 2014-2018, respectively.

The increasing budget is affected by several factors. Two common factors, ratcheting effect and revenue, may determine this condition. To evaluate this hypothesis, linear regressions are used. Ratcheting budget effect examination using Eq.1 can be seen in Table 2 as below:

Table 2
Weitzman's Model on Ratcheting Effect

VARIABLES	$A_APBD_t - A_APBD_{t-1}$
$R_APBD_{t-1} - A_APBD_{t-1}$	-0.453*** (0.0888)
Constant	575,479*** (162,756)
Observations	152
R-squared	0.148

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Two coefficients are significant. It means that the previous year's budget variance significantly affects the next year budgeted expenditures. In Indonesia, although the regulation emphasizes the performance-based budget system, in fact incremental-line budget system is still applied. This phenomenon is indicated by the negative sign of the independent variable. The next year budgeted expenditures will be increased when they successfully spend the budget as close as the budgeted expenditure on the previous year. As one of the indicators of local government achievement is the amount of budget utilization, they often use more than the budgeted expenditure. Marlowe (2011) argued that local governments are rarely if ever rewarded for holding expenditures below budgeted levels. In contrast, local governments face an incentive to spend most or all of their budgets to avoid the appearance of having excess resources.





The second model strengthen this phenomenon. Table 3 show that the adjustment coefficient for overspending is significant, but the differential coefficient for underspending is not significant. The sum of coefficients ($\gamma^+ + \gamma^-$) is positive. It means that local governments respond more to overspending than to underspending. This result is similar with Leone & Rock (2002) that conclude that ratcheting occurs when positive variances in performance from budget lead to greater absolute changes in the following year's budget than do changes associated with negative budget variances of the same magnitude.

Table 3

Lee-Plummer's Model on Ratcheting Effect	
VARIABLES	$A_{APBD_t} - A_{APBD_{t-1}}$
$\gamma^+(R_{APBD_{t-1}} - A_{APBD_{t-1}})$	3.036*** (0.593)
$\gamma^-U_t(R_{APBD_{t-1}} - A_{APBD_{t-1}})$	-0.575*** (0.0827)
Constant	266,078* (155,796)
Observations	152
R-squared	0.311

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The ratcheting effect on government spending effect on budgeted expenditure outweighs the effect of local revenue, which becomes the funding source for expenditure. Table 3 depicts that variances of revenue variables, both for over-forecast and under-forecast, are not significant, while the variance of previous year expenditure variables is significant. Some parts of these results are similar to Marlowe (2009) and Susanto & Halim (2018) that show the effect of ratcheting occurs on budgeting for expenditures in the regional budget. It is clear that both overspending and underspending are the type of budget variance that matters most often to future budgeted expenditures. This result indicates that incremental-line budgets have occurred in the budgeted system in local government in Indonesia. Unlike previous expenditures, revenue under-forecast and revenue over-forecast have no consistent relationship with growth in budgeted expenditures as well as population growth.

Table 4

Marlowe's Model on Ratcheting Effect		
VARIABLES	Ym	Ym
coef_overspend	158,015* (95,157)	154,671 (94,666)
coef_underspend	-61,265 (91,727)	-61,734 (91,482)
overspending	1.233** (0.549)	1.227** (0.548)
underspending	-1.022* (0.594)	-1.014* (0.592)
rev_overforecast	0.167 (0.290)	0.183 (0.287)
rev_underforecast	0.810 (0.573)	0.793 (0.570)
population	-0.00307 (0.00623)	
Constant	0.106*** (0.0233)	0.102*** (0.0219)
Observations	152	152
R-squared	0.216	0.215

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Furthermore, unlike in the USA, population growth in Indonesia does not significantly affect the growth of government expenditure. It may happen because population growth in Indonesia is stable enough.





Those models prove that budget ratcheting occurs in Indonesia. Earlier accounting studies find operating inefficiencies in local government budgeting. Governments can examine asymmetric budget growth to help identify possible inefficiencies by seeing the comparison between actual and budgeted expenditures, as well as for local revenue budgeting. The budgeting process could also be expanded to include the economic impact of increased local tax rates on businesses and citizens. Inefficiently high property tax rates can lower property values and decrease wealth (Barrow & Rouse, 2004; Hoxby, 1996; Lee & Plummer, 2007). To meet budget efficiency, government, both executive and legislative, and even taxpayers, should control expenditures rather than simply accepting increases as inevitable.

To minimize the inefficiency resulted by incremental-line budgeting system, especially in pandemic situation, performance-based budgeting system should be implemented gradually. There is an inevitable trade-off between the severity of the short-run recession caused by the epidemic and the health consequences of that epidemic. Dealing with this trade-off is a key challenge confronting policy-makers (Eichenbaum, Rebelo, & Trabandt, 2020). As the world grapples with the coronavirus, the economic impact is mounting. The OECD warned that the impact of COVID-19 pandemic may worse than 2009 global crisis. Several countries take different policies to handle the impact of this pandemic. To combat the economic fallout, the US Federal Reserve on 15 March cut its key interest rate to near zero. But the move, coordinated with central banks in Japan, Australia and New Zealand failed to shore up global investor sentiment, with oil prices dipping below \$30 a barrel on 16 March, and a nine percent slump in share values when Wall Street opened. Anyone hoping cryptocurrencies might prove a safe haven was disappointed. Bitcoin lost more than thirty percent of its value in the five days to 12 March. On 20 March, the UK announced radical fiscal spending measures to counter the economic impact of a worsening crisis. Earlier in April, the Danish government announced it would help private companies struggling to manage the fallout from the pandemic by covering some percentages of employees' salaries (Hutt, 2020). To minimize the impact of pandemic on economic condition, the Indonesia government is preparing a presidential decree to speed up the budget reallocation and change the priorities into healthcare and social safety net, and to help the business and industry sectors (Yasmin, 2020). The is a critical issue during pandemic situation, is the effective and efficient use of available but very limited resources. A balance needs to be struck between investment to strengthen surveillance capacity and response capacity. A balance also needs to be struck between investment in early containment and mitigation (Ortu, Mounier-Jack, & Coker, 2008). The implementation of performance-based budgeting system during pandemic situation should consider several things. Barshay et al. (2020) emphasize that it may be appropriate and necessary to adjust those targets, since the dramatic shift in the economic forecast has rendered those targets seemingly impossible to reach. Furthermore, government should issue the policy that will minimize the loss of public welfare. Guerrieri, Lorenzoni, Straub, & Werning (2020) suggest that a combination of public health policies, social insurance policies, and monetary policy can achieve the first best for a utilitarian social planner.

In Indonesia, to maintain the impact of COVID-19, the author divides the budgeting policy into two parts, namely direct actions and indirect actions. As a direct action, government of Indonesia will reallocate around Rp 5 trillion to Rp 10 trillion, or \$325 million to \$650 million, from the state budget for Covid-19 relief. The government will start with halting non-urgent budget for ministerial travels, workshops, meetings, seminars and state events. The Finance Ministry will also set aside Rp 17.7 trillion from the Village Budget (Transfer ke Desa), which totaled Rp 27 trillion, for Covid-19 relief. The government will also issue a new presidential decree to govern changes in the national health insurance BPJS. The government has previously launched phase I of its fiscal stimulus policy worth Rp 8.5 trillion and phase II to maintain people's consumption and business continuity from April to September. Although decentralization has been implementing, the coordination to tackle COVID-19 effect between central government and local governments is still needed. The Minister of Finance has issued Minister of Finance Regulation (PMK) number 19/2020 as a legal basis for adjusting the allocation of Revenue Sharing Funds (DBH), General Allocation Funds (DAU), and Regional Incentive Funds (DID). This budget reallocation also changes the position of Indonesia's budget. Increasing in budget expenditure certainly causes consequences. The budget deficit will be 5.07% of gross domestic product (Tobing, 2020). Because it exceeds the legal provisions pegged at 3% of GDP, government issued Perpu No 1/2020 about State Financial and Financial System Stability Policy for Handling Pandemics (COVID-19) And / Or to Facing Threats That Danger The National Economy or Stability. The target is a deficit of up





to 5% for only three years. In 2023, the government will return to using the maximum limit fiscal figures set by law.

As cited from official website of Ministry of Finance (2020), budget reallocation, will be prioritized on three things: Ensure public health and safety, including medical personnel; Ensure social protection for vulnerable communities; and, Protection of the business sector. While during the COVID-19 pandemic emergency response, the APBN will be focused on: testing for the victim; increased hospital capacity; and assure the availability of medicines and health equipment. For regional government, there will be transfer fund from central government with term and conditions: health and fulfillment of basic needs of the people is a priority; the Ministry of Finance has set rules to encourage local governments to do refocusing the budget for handling COVID-19; the budget of refocusing and reallocation TKDD; and, the local government will get Transfer Funds for handling Covid-19 after submitting a Performance Report in the Health Sector. To be able to handle this COVID-19, the budget in the health sector needs to be prioritized and several steps have been taken. First through reallocation and refocusing of the 2020 APBN and the APBD in each local government. Additional health budget of Rp. 75 trillion which will be carried out in detail in the form of a Presidential Regulation. This budget in the health sector concerns the addition of a budget for the purchase of medical equipment including personal protective equipment (PPE) for all medical personnel and also upgrading 132 hospitals to become referral hospitals throughout Indonesia, both at central and regional hospitals. Including specialist doctor Rp. 15 million per month incentives, general doctor Rp. 10 million, nurses Rp. 7.5 million, other health workers and hospital administration staff Rp. 5 million provided for 6 months, including the death benefit of Rp. 300 million per person (Ministry of Finance, 2020b).

Based on Perpu No 1/2020, the budget to handling the impact of COVID-19 using a budget sourced from:

- a. The remaining budget from last year;
- b. endowment and accumulation of endowment funds for education;
- c. funds controlled by the state with certain criteria;
- d. funds managed by the Public Service Agency; and / or
- e. funds originating from the reduction of the State Capital Inclusion in State-Owned Enterprises (BUMN);
- f. issue Government Securities and / or Government Sharia Securities for specific purposes specifically in the context of a Corona Virus Disease pandemic (COVID-19) to be purchased by Bank Indonesia, State-Owned Enterprises (SOEs), corporate investors, and or retail investors;

Due to this reallocation, some macroeconomics target cannot be fulfilled by government, e.g.: economic growth target, tax revenue, and export target. Moreover, due to COVID-19, the price of oil also declines sharply. Therefore, the adjustment of 2020 budget should be done to avoid the recession.

A side from direct action, government should consider several things in implementing performance-based system during pandemic situation. Barshay et al. (2020) recommend several considerations as in public company:

- a. Structuring Compensation Programs in Uncertain Times
- b. Setting 2020 Performance Metrics, there is a number of option that can be considered: set 2020 targets in the second quarter, or later for long-term programs; Set target thresholds taking into account adjusted budgets and forecasts; Consider alternative metrics for 2020, such as qualitative performance measures; and, Consider providing a range of performance targets based on the range of impact by COVID-19
- c. Adjust Existing Performance Targets (if needed)

5. Conclusion

The analysis of the ratchet effect on the expenditure component shows that the performance of the previous year's expenditure budget tends to be underspending. This indicates the existence of asymmetric ratchet which means that the negative variant of the previous year's budget gets a greater response from the budget planner as a determinant of the current period's budget compared to the positive variant of the previous year's budget. The findings regarding ratchet effect in budgeting have implications that the model of targeting the revenue budget within the local governments still provides an incentive for budget compilers to behave opportunistically on information asymmetries about the fiscal capacity of a region.





As it may lead to inefficiency, especially during pandemic situation, government should transform this incremental-line system into performance-based system gradually with some considerations. Budget reallocation and changing the priorities are important to implement. To minimize the economic risk during pandemic situation, government should conduct performance target adjusting and program restructuring.

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