Determinants of Budget Forecast Errors and Their Impacts on Budget effectiveness: evidence from Indonesia

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A R T I C L E   I N F O

A B S T R A C T

This research attempts to identify the determinants of budget forecast errors and explore the impact of the errors on the budget effectiveness. This study differs from the earlier studies such as including covering 90% of districts and cities, other studies on budget forecast error have not addressed how financial and governmental characteristics effect budget forecast error, and using a structural model to test the factors effecting budget forecast error and their impacts on budget effectiveness. The data are derived from Central Bureau of Statistics and local government website. It used the data of 444 local government for the period of 2006 to 2013, and analyzed them using a partial least square for testing the hypotheses. The results show that the significant factors affecting budget forecast errors are revenue growth, expenditure growth, and government complexity. The higher the revenue growth the greater the likelihood of budget forecast errors. Likewise, the greater the spending growth, the greater the budget forecast errors. The empirical evidence also suggests that budget forecast errors are bad for the economy. The implications of this findings are that local government must be more careful in projecting a growing income and expenditure budget, coordinate well so that work units can develop accurate budgets, and carry out a better monitoring function for all the main stages of budgeting.

A B S T R A K

Penelitian ini berupaya mengidentifikasi faktor-faktor penentu kesalahan perkiraan anggaran dan mengeksplorasi dampak kesalahan tersebut terhadap efektivitas anggaran. Studi ini berbeda dari studi sebelumnya, misalnya mencakup 90% kabupaten dan kota, Studi lain tentang kesalahan perkiraan anggaran belum membahas bagaimana karakteristik keuangan dan pemerintah mempengaruhi kesalahan perkiraan anggaran, dan menggunakan a structural model untuk menguji faktor-faktor yang mempengaruhi kesalahan prakiraan anggaran dan dampaknya pada efektivitas anggaran. Data tersebut berasal dari Biro Pusat Statistik dan situs web pemerintah daerah. Penelitian ini menggunakan data 444 pemerintah daerah untuk periode 2006 hingga 2013, dan analisisnya dengan partial least square untuk menguji hipotesis. Hasilnya menunjukkan bahwa faktor signifikan yang mempengaruhi kesalahan perkiraan anggaran adalah pertumbuhan pendapatan, pertumbuhan pengeluaran, dan kompleksitas pemerintah. Semakin tinggi pertumbuhan pendapatan, semakin besar kemungkinan kesalahan perkiraan anggaran. Demikian juga, semakin besar pertumbuhan belanja, semakin besar kesalahan perkiraan anggaran. Bukti empiris juga menunjukkan bahwa kesalahan perkiraan anggaran berdampak buruk bagi perekonomian. Implikasinya, bahwa pemerintah daerah harus lebih berhati-hati dalam memproyeksikan pertumbuhan pendapatan dan anggaran belanja, berkoordinasi dengan baik sehingga unit kerja lebih mampu mengembangkan anggaran yang akurat, dan melaksanakan fungsi pemantauan yang lebih baik untuk semua tahapan penganggaran .

1.   INTRODUCTION

Budgeting is the process of estimating revenues and expenditures over a specified period of one year. One of the most important steps is forecasting. The budget forecast follows the process of converting economic variables into fiscal variables. The

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more accurate the budget forecast the more precisely the revenues earned and the better in allocating public resources. Forecasting is about predicting the future with probably incomplete information. Therefore, it is not surprising that forecast is not always accurate. In fact, for the case of districts and cities of Indonesia, the absolute value of the difference between the expenditure budget and its realization can be 9%. For the revenue budget, the difference could be even higher and reach 19% (Badan Pusat Statistik, 2009)

The budget forecast is an integral part of budget preparation. It is based on some assumptions. The main assumptions used in the preparation of the central government budget include Gross Domestic Product, economic growth, inflation rate, rupiah exchange rate, interest rate, price and lifting of petroleum, as well as price and lifting of natural gas. The local governments adjust the national assumptions according to their respective regional conditions. These assumptions are commonly examined for finding determinants of budget forecasting errors. The interesting topic is to explore whether factors beyond macroeconomic assumptions such as local government financial and characteristics contribute to the budget forecast error.

The failure of local government to forecast exactly the revenues and expenditures is critical factors that contribute to budget performance (Canh & Phong, 2018). In addition, governmental organization that produces budget forecast should also evaluate their budget effectiveness. Another interesting topic that has yet to be addressed in the literature is whether budget forecast error has a negative impact on budget effectiveness. Budget effectiveness is the budget capability of producing desired results. When budget is deemed effective, it means it has intended outcomes. The effectiveness of the budget can be seen from the economic growth, the reduction of unemployment, the increase of human development index, and ultimately the welfare of society.

The main purposes of this paper are to identify the determinants of budget forecast error and explore the impact of the error on the budget effectiveness. This study differs from earlier studies on budget forecast error. First, covering 90% of Indonesian districts and cities gives us a comprehensive picture of budget forecast error. Second, Indonesian studies on budget forecast error have not addressed how financial and governmental characteristics, particularly for districts and cities, effect budget forecast error. Third, this study uses a structural methodical model to test the factors effecting budget forecast error and the impacts of the error to the budget effectiveness.

2. LITERATURE REVIEW AND HYPOTHESES

A forecast error is the difference between predicted and actual values. With regard to budgeting, budget forecast errors are the difference between the amount budgeted and the actual figures. Those errors can be sourced both from revenues and expenses. The issue of budget forecast error has been analyzed extensively by some researchers (Leal, Perez, Tujula, & Vidal, 2008), (Bischoff & Gohout, 2010), (Buettner & Kauder, 2010), (Pina & Venes, 2011), (Frankel & Schreger, 2013), and (Paloviita & Ikonen, 2016). However, those studies examined macroeconomic factors as determinants of budget forecasting error. I go beyond the macroeconomic factors. My analysis is based on financial and governmental characteristics. The factors studied in this research include income growth, spending growth, timeliness of budget approval, government complexity, and type of government.

Revenues are the first one made by budget forecasters. In this case, local government forecast diversified sources of revenues, ranging from its own source revenue, transfer funds, and other regional revenues. Two main sources of local own source revenue derived from taxes and charges. The local government collects dozens of types of taxes including taxes on hotel, restaurant, entertainment, and vehicle. Even the local government charges more than 30 types of retributions such as parking, market, health, and education fees. Tax revenues are usually budgeted by a certain or several work units of local government. However, the levy revenue is budgeted by all government work units. Since the reform and regional autonomy era, local region is required to work hard in order to improve the welfare of the community. District head and mayor demand their apparatus to increase revenues. Revenue growth can come from a variety of income types and the addition of revenue targets for existing sources. The income growth is not without problems. The greater the additional incomes the more likely the budget forecast errors. The revenue forecasting errors can be caused by various factors such as the varying work units that make up the revenue budget as well as the unexpected tax and levy assumptions. Among the possible unexpected income assumptions are economic growth, the number of tax and retribution payers and the effective rate for each of them. Revenue

forecast accuracy relatively weak (Buettner & Kauder, 2010). The empirical findings about income forecasting are not unidirectional. Some studies have found that revenue forecast can be under-or-over optimistic (Beetsma, Giuliodori, Walschot, & Wierts, 2013), (De Castro, Perez, & Rodriguez-Vives, 2013), and (Frankel & Schreger, 2013). Based on the argument above, a hypothesis is formulated as follows:

H1: Revenue growth has a positive impact on budget forecast errors

There are two types of expenditures predicted by budget forecasters: operating expenditures and capital expenditures. Operational expenditures include personnel, goods and service, interest, subsidy, grant, and social assistance expenditures. Capital expenditures include spending on the acquisition of land, equipment and machinery, and construction of building, road, and irrigation. Each work unit prepares the budget both in summary and detail. Local government expenditures tend to increase from year to year. The increase in expenditures arose because of increased public demand for providing public goods and services.

The more budget elements the more likely the mistakes of budgeting will be. Basically, funds should not be issued if they are not in the budget. However, there may be less budget allocations for certain programs and activities while budget allocations for other programs and activities are not fully absorbed. The conservative district and city leaders are more likely to cause the forecast to be minimized in order to reduce the level of services and expenditures. They attempt to minimize revenue forecasts in order to reduce expenditure. They also estimate low revenue level to enhance their power to cut work unit budget requests. However, less conservative revenue estimates may cause the approval additional expenditures (Bischoff & Gohout, 2010). Based on the above logic of thinking, a hypothesis is formulated as follows.

H2: Expenditure growth has a positive effect on budget forecast errors

The first stage in budgeting is the preparation of budgets that start from May to September of the previous year. Budget discussions between the executive and the legislature begin from October to December of the previous year. Timely budget approval is a budget authorized by December 31st of a certain year for the following year's budget. It is possible that the budget cannot be approved by December 31st. The probable factor is that it may

take longer to draft the budget by the work unit. Another factor is that it takes a longer time in budget discussions between the government and the legislature. Even disagreements may happen within governmental work unit as well as between the government and the legislature. The budget preparation and discussion can run more smoothly if there is no dominant party. However party dominance influent budget preparation and approval. Researches done by Beetsma et al. (2013), De Castro et al. (2013), and (Veiga & Boukari, 2016) show that political aspect effect the budget accuracy. Based on the logic of thinking above, a hypothesis is formulated as follows:

H3: Delay in budget approval has a positive effect on budget forecast errors

The governmental functions can be classified as absolute, concurrent, and general functions. Absolute functions consist of foreign affair, defense, security, justice, monetary and fiscal, and religion. Absolute functions are carried out by central government. Concurrent functions include both mandatory and optional functions. There are as many as 24 concurrent functions. Concurrent functions could be performed by both central and local government. Meanwhile, optional functions consist of fishery, tourism, marine, farming, energy and mineral resources, trade, industry, and transmigration. Even though all local government has to carry out the same mandatory functions, the number of work units does not have to be the same.

Some local governments combine several functions into one work unit because of small governmental size. Moreover, the variation in government work unit could be caused by the optional functions. Of course it is not easy to budget for many functions within government organizations. Budgeting is not only related to determining how much money to spend, but also which priorities and programs would be carried out. The more complex the government, the more difficult to make an accurate budget (Veiga et al., 2016). All functions are just as important and this causes the difficulty of allocating public resources. The more complex the work unit the more difficult the budget preparation and the higher the budget forecast error. But the complexity of government also illustrates the size of government. Large governments have adequate human, financial, and information resources so they are better at budgeting. In this case the more adequate the government's resources the less likely it is to mistake in forecasting budgeting. Based on the above argument a hypothesis is formulated as

follows:

H4: Government complexity has a negative effect on budget forecast errors

The local government within a province includes various districts and cities. Districts are governmental units that have large areas ranging from urban to rural and very remote areas. A district is divided into various sub-districts. Generally these sub-districts are located in rural areas. Their ability in budgeting is generally low due to limited human, financial, and information system resources. Therefore districts are more susceptible to budget forecasting errors.

Unlike a district, a city has a small territory. All work units are within an urban sphere. The city has better human resources as well as more advanced information technology. Compared to districts, cities are better able to budget and therefore make fewer mistakes in budget forecasting. The success of budget forecast is influenced by budget forecaster knowledge. When making budget decisions, decision makers sometimes have to use the less accurate monomer economic information available at the time (Cimadomo, 2016). Based on the above argument the hypothesis is formulated:

H5: Type of government has a positive effect on budget forecast errors

Budget forecasting involves various assumptions and these assumptions can move with the passage of time. It is not surprised that if there are errors in budget forecasting. Of course budgeting does not stop at the calculation of budget accuracy. A budget forecast is said to be strong if the forecast number equals the actual number or in other words the error is zero. Findings on the impact of budget deficit on economic growth are not unidirectional. Fatima, Ahmed, & Rehman (2012), Hassan, College, & Raja Nassar (2014), Haider, Shaon, & Kabir (2016), Rana & Wahid (2016), and Navaratnam & Mayandy (2016), found statistically significant negative effect of budget deficit over economic growth. On the other hand, Odhiambo, Momanyi, Lucas, & Aila (2014) and (Nayab, 2013) found there was a positive impact of budget deficit on economic

growth. The public expects the government to budget with accurate income and expenditure figures because an accurate budget should have a positive impact on budget effectiveness. An effective budget is a budget that produces expected outcomes such as economic growth. In an effective budget there is a good allocation of resources and ultimately expected to have a positive impact on economic growth. Based on the above argument the following hypothesis is formulated as follows:

H6: Budget forecast errors have a negative effect on budget effectiveness

3. RESEARCH METHOD

As it is described in the literature review, in this study, the researchers examine three financial and two government characteristics that may contribute to budget forecasting errors. The three financial characteristics are revenue growth, spending growth, and timeliness of budget approval. The two characteristics of government are complexity and type of government. This study hypothesizes that factors such as revenue growth, growth spending, the timeliness of budget approval, government complexity, and the type of government have effects on budget forecast errors. In this study I also test the hypothesis about the effect of budgetary forecast errors on budget effectiveness.

The research model is as shown in Figure 1. The model illustrates the relationship between exogenous, mediation, and endogenous variables. Exogenous variables describe the factors that determine the budget forecast error. The budget forecast error becomes a mediator between the factors causing budget forecast error and the effectiveness of the budget. It appears in the figure, the structural relationship between the determinants of budget forecast error, the budget projection error itself, and the impact of budget forecast error on the effectiveness of the budget. Partial least square (PLS) is used to test hypotheses about the structural relationship between factors causing budget forecast error to budget effectiveness through budget forecast error as mediator.
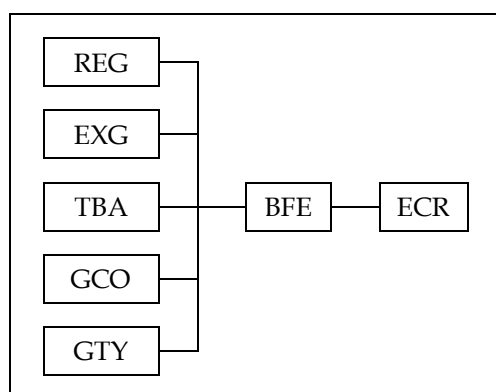
Figure 1
Research Model

The variables in this study include exogenous, mediation, and endogenous variables. An exogenous variable is a factor in a causal model whose value is independent from other variables in the model. Exogenous variables include income growth, spending growth, timeliness of budget approval, government complexity, and type of government. A mediating variable is a factor that causes mediation in the independent and dependent variables. This mediator explains the relationship between dependent and independent variable. In this study, budget forecast error is used as a mediating variable. Meanwhile, an endogenous variable is a factor in a causal model whose value is determined by other variables in the model. Economic growth is an endogenous variable in this study.

There are basically two groups of exogenous variables, financial and local government characteristics. Financial characteristics include revenue growth (REG), expenditure growth (EXG), and timeliness of budget approval (TBA). Revenue (expenditure) growth is the percentage growth of revenue (expenditure). The timeliness of budget approval is a category where 1 for late budget approval and 0 otherwise. Meanwhile, local government characteristics comprise local government complexity (GCO) and type (GTY). The complexity of government is illustrated by the number of work units. The type of government is a category where 1 for district and 0 for city. Meanwhile I use economic growth (ECG) as a proxy for budgetary effectiveness. Economic growth is the change in Gross Regional Domestic Product.

As stated earlier, the mediating variable is budget forecast error (BFE). There are several statistical methods available to calculate budget forecast error such as mean squared error (MSE), mean error (ME), mean percentage error (MPE), mean absolute error (MAE), and mean absolute percent-age error (MAPE) (Departement of Treasury, 2008 and Afonso & Carvalho, 2014). This study uses MAPE as one of the most common methods used to determine the value of budget forecast error. MAPE figure is the average difference between budget and actual amount for revenues and expenditures. Based on the concept of MAPE, forecast errors are calculated both for revenue and expenditure budget. The first step in determining budget forecast error is to find the difference between budgeted revenues from actual revenues. This figure shows the revenue forecast error. Second, the difference between the budget and the actual amount of spending is calculated. This difference is an expenditure forecast error. The average budget forecast error comes from revenue forecast error and expenditure forecast error.

The local government financial and budget effectiveness data are obtained from Central Bureau of Statistics. Yet, the government characteristic data is taken from each local government website. Initially, the researchers cover all Indonesian districts and cities for the period of 2006 to 2013. There are 497 districts and cities for the period. Due to the data incompleteness, the researchers processed financial and government characteristic data of 444 districts and cities for eight years of observation.

4. DATA ANALYSIS AND DISCUSSIONS
The researchers collected and processed financial and government characteristic data of 320 districts and 124 cities over eight years. Their revenues and expenditures go up and down year by year. Revenue changes between -57% and 468% and its average growth is 24%. But, the change in spending ranging from -31% to 350% with the average growth of 15%. The average budget projection error is 6.82%. Budget forecast error ranging from 3% up to 37%. The average economic growth is 5.84% with

the change with the variation between 1.82% and 11.62%. Meanwhile, economic growth has an average value of 5.84% with a range from 1.82% to 11.62%. There were 444 regional governments, districts and cities, covered in this study during the

period 2006 to 2013. A total of 68% of observations indicated that the regional budget was approved too late or exceeded a predetermined time limit.

Table 1
Descriptive Statistics

Variables	Mean	Minimum	Maximum
REG	0.24	-0.57	4.68
EXG	0.15	-0.31	3.50
TBA	0.68	0.00	1.00
GCO	29.69	25.00	77.00
GTY	0.72	0.00	1.00
BFE	6.82	0.00	97.26
ECG	5.84	1.82	11.62

REG (revenue growth: the change in revenue), EXG (expenditure growth: the change in expenditure), TBA (timeliness of budget Approval: 1 for late budget approval and 0 otherwise), GCO (government complexity: number of work units), GTY (government type: 1 for district and 0 for city), BFE (average of revenue budget forecast error and expenditure budget forecast error), and ECG (economic growth: the change in Gross Regional Domestic Product).

The analysis of the data using PLS requires testing the fit of the model. It can be seen from the average path coefficient (APC), average R-square (ARS), and the average block VIF (AVIF). A model is considered good when APC and ARS each have a p value of less than 5%. While the AVIF value for a model that is considered good is less than 5.00. The model test results show the p values for APC and

ARS respectively 0.004 and 0.011. For that reason, it can be said that the model in this study is fit and the research variables are able to show the causal relationship. Meanwhile the AVIF value is 1.217. This figure is below the number 5.00 and thus can be said that there is no multicollinary issue. A summary of the research findings is presented in Table 2.

Table 2
Empirical Findings

	Hypotheses	Expected	Coefficients	P-Value	Findings
H1	REG => BFE	+	0.085	0.035	Significant
H2	EXG => BFE	+	0.388	0.001	Significant
H3	TBA => BFE	-	-0.005	0.454	Non-significant
H4	GCO => BFE	-	-0.103	0.014	Significant
H5	GTY => BFE	+	-0.050	0.143	Non-significant
H6	BFE => ECG	-	-0.137	0.002	Significant

REG (revenue growth: the change in revenue), EXG (expenditure growth: the change in expenditure), TBA (timeliness of budget Approval: 1 for late budget approval and 0 otherwise), GCO (government complexity: number of work units), GTY (government type: 1 for district and 0 for city), BFE (average of revenue budget forecast error and expenditure budget forecast error), and ECG (economic growth: the change in Gross Regional Domestic Product).

Of the six hypotheses tested, there are four empirical findings corresponding to the hypothesized. Yet, the other two hypotheses are non-significant. It was predicted that the revenue and expenditure growth will positively affect the absolute magnitude of budget forecasting errors. Late budget approval is also suspected to have an impact on more budget forecasting errors. The empirical findings

support the notion that revenue and expenditure growth lead to greater budget projection errors. Path coefficients and p values for testing the effect of revenue growth on budget forecasting errors are 0.085 and 0.035 respectively.

The finding above is as expected that the greater the revenue growth the more difficult it is to create an accurate budget. It is in line with the

results of previous studies (Buettner & Kauder, 2010, Beetsma et al., 2013, De Castro et al., 2013, and Frankel & Schreger, 2013) that income revenue budgets are not accurate in which budgets can be budgeted too low or too high. The greater the type of retribution and local tax revenues as well as the greater the revenue growth the more difficult the budgeting and ultimately leads to projection errors.

On testing the effect of expenditure growth on budget forecast error, the researchers have path coefficients and *p* values of 0.388 and 0.001 respectively. As expected, these findings indicate that the greater the expenditure growth, the more likely the budget forecasting error will be. This finding is consistent with Bischoff & Gohout (2010) study. Regional autonomy causes the administration of government functions to be in the hands of the local government. Therefore, local government spending tends to increase from time to time to fund these functions. However, the greater the growth of expenditures the more likely mistakes of budget projection.

Unlike in the test of first two hypotheses, it was found no significant effect between timeliness of budgeting approval with budgeting projection errors. The error of budget forecasting does not vary according to the variation of the date of signing the regional budget between the government and the legislature. Researches done by Bischoff & Gohout (2010), De Castro et al. (2013), and Veiga & Boukari (2016) show that political aspect effect the budget accuracy. Data shows that 68% of regional budgets were not approved on time.

It was suspected that there are three factors causing insignificant impacts of budgetary delays on budget projection errors. First, the budget preparation and budgeting process is well-off in the form of phases and time periods. The government has determined when the budgeting stages should be completed. Second is the sanction of budgeting delay. Even though there is sanction, namely not getting incentives from the central government, this sanction seems to be ineffective because many local governments do not approve the budget on time. Local governments and legislatures are not aware that they will get sanction from the central government if they are late in approving the budget. This sanction seems to not work effectively. The third is the absence of dominant political parties and the presence of coalitions between political parties. This causes discussion and approval of the budget goes well. However, these factors need to be further investigated.

The first stage in budgeting is the preparation of budgets that start from May to September of the previous year. Budget discussions between the executive and the legislature begin from October to December of the previous year. Timely budget approval is a budget authorized by December 31st of a certain year for the following year's budget. It is possible that the budget cannot be approved by December 31st. The probable factor is that it may take longer to draft the budget by the work unit. Another factor is that it takes a longer time in budget discussions between the government and the legislature. Even disagreements may happen within governmental work unit as well as between the government and the legislature. The budget preparation and discussion can run more smoothly if there is no dominant party. However, party dominance influent budget preparation and approval. Researches done by Beetsma et al. (2013), De Castro et al. (2013), and Veiga & Boukari (2016) show that political aspect effect the budget accuracy.

There are two of government characteristics, complexity and type of government, which are expected to be the determinants of budget forecasting error. The empirical finding indicates that the characteristic of government, especially the complexity, has an impact on budget forecasting error. The test on the effect of government complexity on budgeting forecasting error resulted in the path coefficients and p values of -0.103 and 0.014 respectively. These finding does not support the statement that the size of government is a feature of resource capability. The more work units are, the more complex the preparation of the budget. Many work units indicate various demand and elements of incomes and expenditures. When the number of work units varies, it will be more difficult to determine program and expenditure priorities and it is difficult to coordinate the preparation and compilation of budgets among work units which ultimately results in budgeting forecast errors. Unlike the complexities of government, the type of government does not affect budget forecasting errors. Budgeting ability does not vary significantly by type of government. Districts and cities are both faced with budget forecasting errors.

Empirical evidence suggests that budget projection errors have a negative impact on economic growth. The path coefficient and *p* value for this test are 0137 and 0.002 respectively. In accordance with the prediction, the inaccuracies of budget figures impact on the effectiveness of the budget. This finding is in line with Fatima et al. (2012), Hassan et al. (2014), Hassan et al. (2014), Rana & Wahid (2016), and Navaratnam & Mayandy (2016) that

found statistically significant negative effect of budget deficit over economic growth. Inaccurate budgets lead to weak economic growth achievements. With these empirical findings, local governments must be wary that errors in budgeting are bad for the economy. Local governments must strive to develop an accurate budget projection so as to have a positive impact on the economy and ultimately the welfare of society.

The sensitivity test is performed to determine the extent to which the empirical findings are sensitive. Sensitivity testing is done by dividing the sample and testing it separately. The regions are divided into areas with high income growth and low income growth areas. For regions that have high income growth, it is found that budget projection errors are positively affected by income and spending growth and negatively by the complexity of government. The timeliness of budgeting and the type of government have no impact on budget projection errors.

The same empirical evidence is also obtained for regions that have low income growth. Separate testing for samples with high expenditure growth and low spending growth was also carried out. The empirical findings are relatively insensitive and consistent for the previous tests. However, empirical findings are stronger for high revenue and expenditure growth. It can be argued that bigger budget projection errors occur when income and expenditure growth is also high. Given the adverse impact of budget projection errors for the economy, local government with growing income and expenditure should be vigilant in order for these growths to benefit the community.

5. CONCLUSIONS, IMPLICATIONS, SUGGESTIONS, AND LIMITATIONS

Budget forecasting is a complex and complicated task because of the high uncertainty. Budget assumptions are agreed between the executive and the legislatures as well as the budget figures for revenues and expenditures are put in the standard form set by the government. It seems that it is not wrong if there is a general opinion that budget forecasting is purely related to the technical process of budgeting. However, financial factors and government characteristics contribute to budget forecasting errors. The bigger the budgeted revenue and expenditure numbers, the more likely it is for budget forecasting errors. The more complex the government is, the more difficult it is to predict the income and expenditure figures accurately. Budget

is ineffective with budget forecasting errors. The greater the budget forecast error the worse the impact on economic growth.

This empirical finding has three important implications in the budgeting process. First, local governments must realize that when income and expenditure growth occurs, of course this happens from year to year, then the complexity in budget projections will also emerge. Income and expenditure growth can take the form of additional elements of income and expenditure, budget requests, funded work units, and the rupiah value of income and expenditure itself. If this happens, the government must be more careful in aligning work plans and budget proposals, filling out budget proposal forms, and compiling budgets. Second, the number of work units illustrates the complexity of government. Complex government budgets are difficult to develop without causing projection errors. Local governments must coordinate well so that work units are better able to develop accurate budgets. Third, the legislature also contributes to the improvement of the budget through its oversight function. The legislature is required to carry out a better monitoring function for all the main stages of budgeting, namely since the preparation of work plans, making budget proposals, budget discussions, and up to the implementation of the budget.

The limitation of this study lies in the measurement of budget projection errors. Erroneous budget projections can be measured in other more appropriate ways, namely standard errors from regression of budget elements to open unemployment. However, it cannot be done because open unemployment data is not obtained for the districts and cities. The open unemployment data available is only for provinces with an inadequate number of years and provinces. Therefore, the researchers suggest that further research accommodate the calculation of budget projection errors in the form of standard errors and increase the number of years of observation so that the standard error calculation is better.

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