

A feasibility study of establishing fiscal council in Indonesia

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Abstract

In this paper we address the quantitative measurement of credibility in fiscal policy in the case of Indonesia over the period 2001-2016. This preliminary paper focuses on the deviations of the actual budget balances from the projections about these balances in the preceding years. The objective is to extract from these data insights into the credibility of the government fiscal policies. We found that fiscal policy as conducted by government is not perceived as credible. The targets set forward by government are often not met and usually the divergence is on the negative side. Revenue and spending are overestimated, leading to a deficit bias and growing indebtedness of government. Those results suggest feasibility to establish the fiscal council with independent powers to conduct the credible fiscal policy in order to maintain fiscal sustainability in the long-term.

Introduction

In the recent years, fiscal policy has been received much attention considerably. In response to the global financial and economic crisis that started in 2008, for example, countries around the world embarked on an unprecedented level of intervention. Within months of the crisis, stimulus packages were announced, ranging for example from 1.4 percent of GDP in the UK to close to 6 percent of the GDP in the US, and over 12 percent of GDP in China (ILO, 2011).

At the same time, massive public spending, depressed economic activity, and reduced revenue are causing considerable fiscal pressure. According to the later IMF forecast, among advanced economies, public debt as a percent of GDP is expected to exceed 100 by 2010, 30 percentage points up from 2007 (IMF, 2010). As such, policymakers are urged to bring public expenditures under control, including scaling back programs introduced as part of stimulus measures.

For academicians, the above phenomenon is interesting when confronted to the monetary policy. After voluminous empirical and theoretical studies dedicated solely to the effect of monetary policy, the fiscal policy seems to be likely 'reborn' to contribute to the macroeconomic stabilization policy. While there is uncertainty about the magnitude of the effect of these fiscal measures on economic activity (Cimadomo, Kirchner, & Hauptmeier, 2010), these interventions pose major challenges to the long-term sustainability of public finances.

For policymakers, on the other hand, the reemerge of fiscal policy remains the question on how effective to control economic fluctuations. While the impact of monetary policy could be identified in the short-term, the fiscal policy works with longer lags by means that its impact might be observable in the long-term. However, there seems to be an agreement on the long-term benefits of government debt reductions, there is no unified view on the short-term effects of fiscal austerity (Jansen, Li, Wang, & Yang, 2008).

With regard the long-term impact, strengthening the credibility and predictability of fiscal policies is essential to develop an environment that is conducive to growth and rising incomes (OECD, 2012). Since credible fiscal plans aimed at restoring fiscal sustainability become increasingly essential, attention at an academic and policy level is growingly shifting towards the economic, political, and institutional factors that underpin such credibility.

As fiscal policy has consequences for economic agents and economic activity, it is important to formulate policy responsibly. If a country enjoys fiscal credibility, and if a fiscal deficit appears in the short term, private economic agents believe it will be rapidly corrected. They therefore do not expect that this country's fiscal solvency will be threatened, or that its public debt ratio will become excessive (Artus, 2014). Therefore, fiscal credibility has been widely mentioned as one of the most important fundamentals of macroeconomic policy.

In the context of Indonesia, knowing the credibility of fiscal policy is important. Historically, the Indonesia's government has been implementing fiscal deficit relying on debts (foreign debts and later domestic debts) to promote economic growth. Given the substantial deficits for a long time, whether its impacts is a key political and economic issue. It also has been criticized due to excess burden in terms of interest payment (Kuncoro, 2011a), fiscal sustainability (Kuncoro, 2011b), persistent inflation (Snyder, 1985), external imbalance (Adji, 1998), and crowding-out private spending effects (Kuncoro, 2000).

Basically, the fiscal policy basically is said to be credible if there is a little difference between actual and projected fiscal measures (Naert, 2011). However, it is important to note that the basic economic assumptions that are used by government to set up the state budget are mostly beyond the government of control¹. The difference between actual fiscal measures from the target, therefore, does not perfectly imply the lack of fiscal policy credibility. In contrast, the adjustments of state budget in the mid-year implicitly present the lack of time consistency. Hence, we need to explore further the fiscal policy credibility problem in the case of Indonesia.

To address the credibility problem, it is sometimes suggested to install fiscal councils on top of the fiscal rules. Fiscal councils with tasks in forecasting and assessing fiscal policy have been and are being introduced in more and more countries. Some economists want to go further however and propose to establish fiscal councils with independent powers to conduct fiscal policy within the borderlines that parliament lays down (Naert, 2011). Indonesia does not have fiscal council. The fiscal council fuctions are conducted by Ministry of Finance, i.e. Directorate of Taxes Affair and Directorate of Budgeting. The state financial law does not require having a fiscal council. Accordingly, it is also necessary to assess the possibility of these international tendencies in a country such Indonesia.

This paper enriches the literature on fiscal policy credibility in developing countries with focus on Indonesia. Therefore, fiscal policy in the rebalancing process is likely to require an increase in the credibility of fiscal policy in order to maintain fiscal sustainability.

The rest of the paper is organized as follows. In the next section, we briefly present the budgeting process and then followed by reviewing literature and previous empirical researches both in developed countries and developing countries including Indonesia. The forth section describes the dataset and empirical techniques used. Then, we present the main results of the empirical study. In the end, we conclude with a summary of key findings.

Fiscal policy basically concerns with the use of government revenue collection (taxation) and expenditure (spending) to influence the economy, or else it involves the government changing the levels of taxation and government spending in order to influence aggregate demand and the level of economic activity (see for example: O'Sullivan and Sheffrin (2003). It can be run by either discretionary policy or rule-based policy.

In the rules-based policy frameworks, policymakers announce in advance how policy will respond in various situations and commit themselves to following through. Conversely, as events occur and circumstances change, policymakers use their judgment and apply whatever policies seem appropriate at the time. The two types of policy basically have the same goal. The main different characteristic lies primarily on the approach to conduct.

However, there are some arguments why rules are preferred over discretion. The discretionary policy takes time to recognize, to implement, and to affect the economy. The political process cannot be trusted: politicians make policy mistakes or use policy for their own interests (Mankiw, 2013). The shocks lead to unnecessary fluctuations in output and employment. Consequently, the stabilizing policy could destabilize.

In addition, discretionary policy can be subject to dynamic inconsistency (Barro & Gordon, 1983; Kydland & Prescott, 1977). It arises when a policymaker prefers one policy in advance but a different one when the time to implement arrives. Relaxing the previous stance generates confusion that makes policy ultimately ineffective. On the other hand, a rule-based policy can be more consistent, because it is more transparent and easier to anticipate.

In general, fiscal policy rules formulation can be traced back to the government budget constraint. The government spending (G), as far as possible, can be financed by domestic revenues, R . If the domestic revenue is insufficient to cover G , the available financing option is debt (D) and/or money printing (seigniorage, S):

$$(R_t - G_t) = D_t + S_t \quad (1)$$

The fiscal rule as (1) helps to establish rules on the government budget: targets on the overall deficit, structural balance, ceilings on public debt or expenditure, rules for saving tax revenue in good times and disaving

¹ The mechanism of state budget formulation in Indonesia is nicely summarized by Blöndal et al. (2009).

in bad times. All of them can induce the fiscal discipline. Hence, fiscal rules are mechanisms to support fiscal sustainability and counter-cyclical fiscal policies (Gutierrez, 2012).

However, the fiscal plans may be distorted by the need to comply with ex-ante fiscal rules that require fiscal discipline only in terms of plans but not in terms of outcomes (Beetsma, Giuliodori, & Wierdsma, 2009). He illustrates that when forming their plans governments are under political pressure to be ambitious in terms of fiscal discipline as well as generous to the various groups in the voting population, the plans may differ from realized fiscal outcomes.

It should not come as a surprise then that official forecasts of economic growth used in projecting budgetary spending and taxing often are too optimistic. This leads to projected income that is higher than is realistic and projected spending that is lower than in reality. A structural forecast bias leads to persistent deficits and growing public debt. The deficit bias reflects a time inconsistency problem whereby the long-term discipline objective is systematically overlooked when short-term discretion is being used (Naert, 2011).

Those explanations above give the basic idea of the fiscal policy credibility. In short, fiscal policy is said to be credible if there is a little difference between actual and projected fiscal measures. That definition, however, seems to be government-centered. On the other side, the fiscal policy credibility could be evaluated from the economic agent's point of view. Baxter (1985) and Hauner, Jonáš, & Kumar (2007) argue that credibility is the idea living in the minds of market agents about how close the results of a policy will be to the announced policy. In this case, the fiscal policy is credible if it induces economic agent's confidence to support the policy.

In a broader sense, by covering both sides, the fiscal policy credibility could be justified from its effectiveness. Credibility and effectiveness however are by no means synonyms. In an environment of high inflation, for example, fiscal spending increases inflation expectations and borrowing costs, affecting fiscal policy effectiveness. In such uncertainty, the confidence effects are likely to be even more important and how agents respond will very much depend on a government's policy and credibility (Tang, Liu, & Cheung, 2010).

Furthermore, it does not necessary mean that discretionary fiscal policy is always not credible. Even though the discretionary fiscal policy does not refer to any planned fiscal policy, it might be credible if the fiscal policy effectively affects the economic activity. However, it is arguable whether the discretionary fiscal policy effectiveness is associated with policy credibility itself or policymaker credibility.

Drazen & Masson (1994) differentiate policy credibility and policymaker credibility. According to them, policy credibility is defined as the expectation that an announced policy will be carried out. A policymaker will renege on his commitment if circumstances are bad enough. Therefore, credibility reflects not only the policymaker's intentions, but also the state of the economy. They show how a 'tough' policy could yield benefits well into the future via enhanced reputation.

Some factors in deciding credible fiscal policy are nicely summarized by Kopits and Symansky (1998). However, any rule may entail a dilemma between flexibility and credibility. Too rigid a rule in the pursuit of credibility may lead to high costs in forgone flexibility. Even more, an excessively rigid rule may become altogether non viable. If this is the case, economic agents may anticipate the non sustainability of the rule and it will not lead to more credibility. In other words, an excessively rigid rule may limit flexibility and not enhance credibility; it may entail only costs and few benefits if at all. It would just be a bad rule (Perry, 2003).

While the credibility has an important influence on the fiscal policy effectiveness, empirical studies concerning this aspect ironically are still limited. The main problem is that the concept of credibility further remains unquantifiable. The second one is classic: forecasting the economic prospects in the future is more of an "art" than "science". In addition, any forecasting is more difficult with annual "point estimate" target than "interval estimate" target in the shorter periods (Clark, 2011).

Some researches use different methods to address this issue. The existing empirical studies can be categorized into two groups. The first group deals with the accuracy of fiscal projections in the uni-variate analytical frameworks (Annett, 2006; Artis & Marcellino, 2001; Beetsma et al., 2009; Brück & Stephan, 2006; Merola & Pérez, 2013; Naert & Goeminne, 2011; Pina & Venes, 2011; Strauch, Hallerberg, & von Hagen, 2004). In general, they focus only on actual deficits compared to the projected deficits in line with the Stability and Convergence Programs of Europe's Stability and Growth Pact.

The second group tries to explain the forecasting mistakes based on their own measures of credibility using multivariate analysis. Crain and Tollison (1993), for example, used political institution as a measure of credibility. They offer an extensive and robust test of the time-inconsistency theory of fiscal politics. Employing data of US states from 1969 to 1989, the results of their tests indicate the variables such as legislative stability and executive term limits have strongly predictable impacts on the volatility of various measures of fiscal policy.

Hallett, Kuhn, & Warmedinger (2012) suggested the use of real-time cash data to make accurate intra-annual forecasts of an economy's fiscal position and to issue early warning signals for the need to correct fiscal imbalances. Examples from Germany and Italy show that large corrections are often necessary early on to make the later adjustments acceptable in size and to keep debt ratios from escalating. They also found the differences between front-loaded and back-loaded adjustment schemes are likely to be vital for the time consistency and hence credibility of fiscal policy making.

Similar with Hallett et al., (2012); Kandil & Morsy (2014) used international reserves as a measure of credibility. They found that the presence of high reserves can mitigate this effect – discretionary fiscal policy can be counter-cyclical. They then examine the impact of fiscal policy on output under different scenarios. For high-reserves economies, there seems to be some stimulatory impact of fiscal policy in the short-run. For high-inflation economies, there is a contractionary impact in the short-run. For high-debt countries, the contractionary impact prevails both in the short and long-run.

In the case of Indonesia, the related studies focusing on the credibility of fiscal policy are scarce. Abdullah, Warokka, and Kuncoro (2011) proposed the use of budgetary slack as a measure of time inconsistency. According to their study, budgetary slack is a common figure in any public sectors. However, as the excess of requirements for resources or understatement of productive capability, the difference of those magnitudes indicates the disability of government officials to take into account all chances and risks in the future. Taking the case of Jakarta province over the period of 2004-2007, their study provides the test of government policy consistency towards its campaigned programs.

In the national level, Kuncoro (2014) found that the credible fiscal policy reduces the volatility of government expenditure. Using the same approach, Kuncoro (2015) further proved that the credible fiscal policy plays an important role on the price stabilization. Unfortunately, Abdullah et al. (2011) took the case of local government which does not reflect the credibility of national fiscal policy. Meanwhile, Kuncoro (2014, 2015) did not explicitly examine first whether the fiscal policy is credible or not.

Research Method

Those empirical studies above provide some deeper perspectives to assess fiscal policy credibility in many aspects. In general, they focus on the developed countries which have difference characteristics in economic and political environments from the developing countries. The results of those studies seem to suggest that fiscal policy credibility might be an issue for emerging economies more than for developed ones. This inspires us to test the fiscal policy credibility in case of Indonesia.

This paper is in line with the previous studies and mainly closely related to Naert and Goeminne (2011), Abdullah et al. (2011), and Kuncoro (2014, 2015) even though it has some significant differences. First, we assess the fiscal policy credibility comprehensively by breaking down into revenue, expenditure, and overall fiscal balance. Second, we use descriptive statistics, inferential statistics, together with time series econometrics to address the quantitative problems.

The third distinction is that we cover more recent time periods in the single country at the national level data. This is because some of the conventional wisdom on the credibility of fiscal policy is based on aggregate (global) data even though policymakers are typically concerned with the recent behavior of fiscal policy outcomes at their own country level. Forth, we assess the feasibility of installing fiscal council. The ultimate objective of this approach is to get insight the credibility of government fiscal policies.

As noted by Naert & Goeminne (2011) assessing the quality of forecasts can be done using a multitude of techniques. For first preliminary results we opt to give a qualitative indication of forecast accuracy by presenting some descriptive statistics and by applying a graphical analysis. This method has the advantage of being straightforward; still it does not permit to test the statistical significance of the results.

In this paper, we assume that budgetary projections have to be regarded as the announcements of a political target. Analogously to Annett (2006) and Pina and Venes (2011) the credibility of fiscal policy (E_t) is measured as the difference between its actual budget balance in year t (A_t), and its most recent target for the budget balance for year t in $t-1$ (P_t), or thus:

$$E_t = A_t - P_t \quad (2)$$

Positive values of E_t mean a better-than-projected policy execution, yielding a higher surplus or a lower deficit. The negative values indicate that governments achieved results that were worse than projected or that forecasts were optimistic, that is, underestimations of the deficit or overestimations of the surplus.

In the similar way, we might construct the credibility of fiscal policy index (CI) as follows:

$$CI = \frac{A_t}{P_t} \times 100 \quad (3)$$

Based on this formula, the accuracy of fiscal policy is indicated by a score of 100. If the budget realization were less than what has been targeted before, the credibility index would be indicated less than 100. Meanwhile, if the budget realization exceeds the projected figures, the index will be more than 100.

The above methods merely based on the planned budget which is typically predetermined in the previous year. In fact there are many adjustments in the corresponding period. To accommodate them, we estimate the actual budget (F) using the key macroeconomic variable (X). In this case, we may construct a regression model linking the two variables.

Following methodology used by Akitoby, Clements, Gupta, and Inchauste (2006), we suppose there is a steady-state (or long-run path) relationship between actual budget and the key macroeconomic variable (X) given by:

$$F_t = C X_t^\delta \quad (4)$$

Equation (4) can also be written in linear form:

$$\text{Log } F_t = \text{Log } C + \delta \text{Log } X_t + \mu_t \quad (5)$$

where μ_t is independent and identically distributed disturbance terms with mean 0 and variance σ^2 . It also represents the forecasting error given available information of X in period t . Both C and δ are parameter to be estimated.

In cases where δ is insignificant, there is no steady-state relationship between fiscal variable and output, according to Aizenman and Marion (1993), therefore, the unexpected effect of fiscal policy can be calculated by fitting a first-order autoregressive process and ρ is best estimated by omitting the output variable such that:

$$\text{Log } F_t = a + \rho \text{Log } F_{t-1} + \varepsilon_t \quad (6)$$

The credibility of fiscal policy can be identified by applying the conventional unit roots test to μ_t in (5) and ε_t in (6). We use Dickey-Fuller (DF) and augmented Dickey-Fuller (ADF) unit roots tests as follows:

$$\text{DF: } \Delta \xi_t = \varphi + \lambda \xi_{t-1} + v_t \quad (7a)$$

$$\text{ADF: } \Delta \xi_t = \varphi + \lambda \xi_{t-1} + \phi_i \Sigma \Delta \xi_{t-i} + \theta \text{Trend} + v_t \quad (7b)$$

$$\xi \in (\mu_t, \varepsilon_t)$$

If the coefficient of λ is statistically significant, the fiscal policy is said to be credible, i.e. the associated fiscal variable is stationary, that is invariant to the mean as the expected value.

Since we concern with credibility, we need reliable and long span time series data on fiscal policy comprising revenue, expenditure, and, consequently, deficit. Unfortunately, the quarterly or monthly data of government budget are publicly unavailable. Data on monthly cash disbursement of functional government budget has never been released by Ministry of Finance to the public. In addition, the cash inflow of tax received only published only for some recent months.

Regarding to the limitation, in this paper we use annual data. This is because the planned budget is established once time even though then revised in the mid year. In the mid-year budget revision, the government does not always announce the new targeted budget. Therefore, we analyze the difference between the accumulation of actual budget (before and after budget revision) and the original planned budget. As comparison, we also analyze the quarterly data on government expenditure derived from the national income standard account based on expenditure approach. This is intended that our study will be comparable to similar studies in other countries.

The government revenue is divided into two grand categories, taxes and non taxes received excluded grants. The term government expenditure used in this study is central government general consumption or recurrent expenditure realization (mostly allocated onto wage/salary and goods/services purchase) and capital expenditure. Inclusively, we also assess the spending of transfer to regions. Deficits are the difference between government spending and government revenues.

The selected key macroeconomic variable is GDP. The GDP is used the main factor for government to set the state budget projection for the next year. The GDP data are available in quarter basis. Those variables are presented in 2010 constant price. The sample periods chosen for this study extend from 2001(1) to 2016(4). The total observation is 64 sample points. All of the data are taken from the Central Bank of Indonesia

(www.bi.go.id) and Central Board of Statistics (www.bps.go.id). Most of the results are calculated in econometric program Eviews 9.

Results and Discussion

Fiscal policy stance can be represented in many aspects. Nevertheless, the overall balance is the most important indicator to evaluate the fiscal policy. We begin our discussion with this measure. Figure 1 presents the evolution of total government revenue and total spending. It is notable that the expenditure always exceeds the revenue implying that the overall balance is deficit.

Looking at the magnitudes, the fiscal deficit was relatively stable primarily until 2008. In the relative term, the fiscal deficit was successfully maintained at less than 3 percent to GDP. However, it is also notable that there was a significant difference between the amount of deficits during pre- and post-global financial crisis periods. Since 2008, the trend of deficits has been increasing remarkably. In the beginning of crisis, the central government launched fiscal stimuli amounting 73.3 trillion Rupiah allocated mostly to social welfare to minimize the adverse economic impacts of global financial crisis.

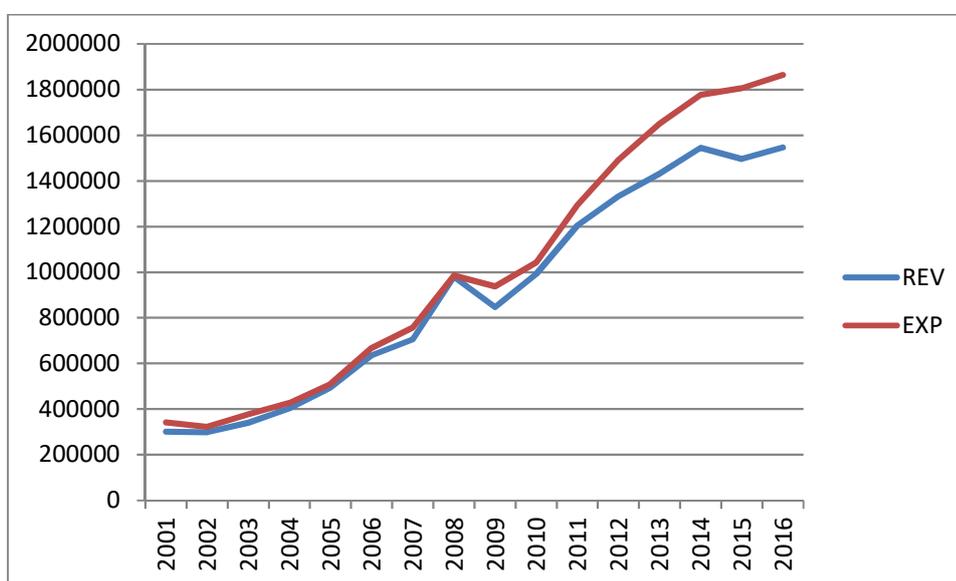


Figure 1. Total Government Revenue and Expenditure (in Billion Rupiah)

Table 1 report the average of difference between actual budget and planned budget for each revenue and expenditure in more detail. The total government revenue tends to be underestimated indicated by the negative value of the bias. Most of the bias is supported by taxes revenue. Accordingly, taxes are overestimated implying that the projected taxes revenue is greater than the actual one. It seems that government is not conservative to estimate the taxes revenue as found by Abdullah et al. (2011) in the context of budgetary slack in the lower-layer government.

Regarding to the expenditure, the government spending tend to be upward bias. The actual spending is far enough from the plan implying that government is very optimistic. When we break down into two grand categories, the conclusion does not alter. The negative bias holds for the central government spending and expenditure for transfer to regions. In general, those results are in line with Naert & Goeminne (2011).

The results of one-sample test are also presented in Table 1. Comparing mean value over standard deviation supports the variability of taxes revenue, total government spending, and central government expenditure. In contrast, the realization of non taxes revenue and transfer to regions is relatively close to the projected budget. This result is plausible. The non taxes revenue refer to natural resources exploitation payment while the distribution of transfer to the regions is based on the certain formulae resulting the bias is the lowest.

The larger negative bias of expenditure than that of revenue leads to a deficit bias and growing indebtedness of government. The deficit bias is substantial, over than 19 trillion Rupiah on the average from the targeted budget. Refer to the result from Table 1 and Figure 1; we can say at this point that the state budget

is unsustainable but credible. This conclusion is consistent with Kuncoro (2011b) in the case of quarterly data for the longer time frame.

Our questions in mind are: what does really Table 1 imply? Does it mean that the fiscal policy in general is not credible? Does the fiscal policy become less credible when the results of the policy are better than projected? In our view the use of mean as the representative indicator of credibility is inappropriate. This is because the negative and positive values will cancel out. Consequently, the mean value tends to be approximated to zero and the conclusion would be misleading.

Table 1. Average of Difference between Actual Budget and Planned Budget, 2001-2016 (in billion Rupiah)

	Mean	t-test	Conclusion
Total Revenue	-38,587.38	-1.6856	Credible
Taxes	-46,634.19	-2.1572	Non Credible
Non Taxes	8,046.75	1.7328	Credible
Total Spending	-57,805.94	-3.6137	Non Credible
Central Government Spending	-48,681.88	-4.1343	Non Credible
Transfer to Regions	-9,124.00	-1.8906	Credible
Overall Deficit	19,218.56	1.8628	Credible

Note: conclusions are drawn at 95 percent confidence level

To avoid this arithmetical problem, we develop fiscal policy credibility index. Table 2 reports the fiscal policy credibility index, actual budget to projected budget ratio. The credibility index of total revenue is slightly lower than 100 implying that the projected revenue is greater than the actual one. This is in line with the mean value as found in Table 1. Only the non taxes revenue, which has greater than 100, confirms to the previous results.

The most credible fiscal policy is transfer to regions indicated by the value of index is closest to 100. This is contrast with the above result when we look at the average of difference between actual and planned budget, its mean value is negative. The overall deficit is also found to be inconsistent. The index is the lowest (75.85) suggesting that the projected deficit is underestimated meanwhile the mean value of difference between actual and planned budget is positive. The one sample test seems to support that the overall deficit is non credible.

Given those inconsistencies, we revisit with CV (coefficient of variance; that is the standard deviation to its mean ratio). Now we can set up the criteria: (1) the lower the CV, the higher the credibility and (2) the actual to planned budget ratio closer to 100, the higher the credibility. Based on those criteria, transfer to regions is the most credible (it has the lowest CV, 2.92 percent and the ratio is 98.56, almost 100) followed by total spending (CV: 3.75 percent and ratio: 95.42 respectively). The lowest credible is the overall deficit indicated by the highest CV, 40.65, percent and the lowest ratio, 75.85.

Table 2. Descriptive Statistics of Actual Budget to Planned Budget Ratio, 2001-2016

	Mean	Standard Deviation	CV (%)	Conclusion
Total Revenue	97.60	6.02	6.17	Credible
Taxes	96.27	6.16	6.40	Non credible
Non Taxes	102.74	7.95	7.74	Credible
Total Spending	95.42	3.58	3.75	Non credible
Central Government Spending	94.06	4.49	4.77	Non credible
Transfer to Regions	98.56	2.88	2.92	Credible
Overall Deficit	75.85	30.83	40.65	Non credible

Note: conclusions are drawn at 95 percent confidence level

So far, we have already discussed the credibility of fiscal policy in Indonesia based on the elementary descriptive statistics which does not allow any dispersion. Except overall balance, we have not achieved yet the unique conclusion regarding the credibility of each budget. To get the conclusive information, we move on to the inferential statistics by incorporating confidence level. As long as the test lies in the tolerated confidence level, the government that does better than planned does not suffer from a drop in credibility.

Since the total government expenditure is non credible, furthermore, we will check it again using econometrics of time series. As comparison, we employ government consumption expenditure data in the

national income account. The estimation result of a simple log-linear regression connecting government consumption expenditure and GDP (both in logarithmic forms) is presented in Table 3.

The national income can systematically explain the behavior of quarterly government consumption expenditure. The variation of government consumption expenditure is contributed by GDP for about 93 percent. Moreover, the partial and overall tests indicate the significance impact of GDP proven by t-statistic and F-statistic at 95 percent or even higher confidence level. Hence, the model can be used well to predict the 'projected' values of government consumption expenditure.

The national income positively determines the government consumption expenditure. The increase 1 percent in GDP will induce the increase in the government consumption expenditure on the average for about 1.3 percent. The conventional statistical test infers that the corresponding coefficient is elastic ($\delta > 1$) implying the increase in government consumption expenditure tends to be faster than that in GDP. Consequently, the projected value is higher than the actual one. Given this result, we can say that the government consumption expenditure is downward bias and thus non credible as previously found by the descriptive statistics.

The second part of the Table 3 performs the result of auto-regressive model. Posing the lag as explanatory variable, the corresponding coefficient is 0.66 and statistically significant suggesting the existence of dynamic stability. As expected, the magnitude is positive and less than unity indicating the high persistency of government expenditure in relation to the low partial adjustment actual value to the desired one.

However, the further statistical verification shows that the associated coefficient is different from unity. This implies that the lagged value, on the average, unequals to the current value indicating that the current value is not the best information to predict the future one. Consequently, the forecasting error, on the average, will not converge to zero. In other words, the actual value will be far from the predicting value implying non credible.

Table 3. Estimation Result of Government Consumption Expenditure, 2001(1)-2016(4)

	Log Linear			AR		
	Coeff.	t-stat	Prob.	Coeff.	t-stat	Prob.
C	-7.2372	-6.5876	0.0000	3.9901	3.4848	0.0009
Log (Y)	1.3317	17.2716	0.0000	-	-	-
Log G(-1)	-	-	-	0.6615	6.7758	0.0000
R			0.8279			0.4294
R-adj			0.8251			0.4201
SEE			0.1588			0.2851
F			298.3072			45.9110
DW			2.7054			2.6727

The series of residual which is generated from regression equations as presented in Table 3 can be considered as forecasting error. If the error terms have unit roots, the associated policy is said to be credible. Table 4 delivers the result of unit roots tests. The test is conducted twice with respect to intercept and intercept with time trend. The DF and ADF tests show that the residual series do not have unit roots at 5 percent significance level. The null hypotheses of non-stationary cannot be rejected which demonstrates the existence of a common trend in those series.

The stationary series implies that the behavior of the variables varies around to the mean value and invariant overtime (Enders, 2004). The occurrence of unit roots in the series gives a preliminary indication of shocks having permanent or long lasting effect, thus making it very difficult for traditional stabilization policies to survive. Conversely, the absence of unit roots in the series suggests that the series is far from expected value implying that the fiscal policy is not credible.

Table 4. Unit Roots Tests of Government Consumption Expenditure Credibility, 2001(1)-2016(4)

	Log Linear		AR		Conclusion
	t-stat	Prob.	t-stat	Prob.	
Intercept	-1.6599	0.4461	-1.5002	0.5267	Non Credible
Intercept and Trend	-2.3714	0.3903	-2.8153	0.1978	Non Credible

Note: conclusions are drawn at 95 percent confidence level

The downward bias of government expenditure can be explained as follows. First, the main problem is in the budget allocation and under-spending for some important activities such as infrastructures and social

spending. Even though the current literatures show that Indonesia's budget either a-cyclical (Akitoby et al., 2006; Baldacci, 2009) or counter-cyclical (Jha, Mallick, Park, & Quising, 2010) but the budget situation in 2014 is clearly pro-cyclical. While the economy is slowing down, because the government is not able to cut energy subsidy, the solution then cut the spending where mostly infrastructures.

Second is lack of flexibility of the allocation and hence limits to the fiscal space (Basri & Rahardja, 2011). Most government spending by the law is obligatory in nature. For example, education spending must be 20 percent of the total outlay. The other important expenditures transfer to the lower-layer governments (26.5 percent of net domestic revenues: domestic revenues minus energy subsidy), 10 percent of local fiscal transfer must be allocated to villages, and health (excluding salary) is 5 percent of spending.

The third deals with the institutional and political factors. Ikhsan (2014) identified that there is lack quality on the implementation (timing, procurement), poor governance and weak fiscal institution, power too much to the Parliament to approve and the line minister to execute the budget, and lack of technical knowledge at the Ministry of Finance. As a result, the government expenditure is less efficient than it should be. Eventually, it seems that establishing fiscal council is necessary for a country with low fiscal credibility like Indonesia.

Conclusion

In this paper we address the quantitative measurement of credibility in fiscal policy in the case of Indonesia over the period 2001-2016. This paper focuses on the deviations of the actual budget balances from the projections about these balances in the preceding years. The objective is to extract from these data insights into the credibility of the government fiscal policies. To the best of our knowledge, this is the first study analyzing the credibility of fiscal policy in Indonesia. Therefore, we have to say that this is a preliminary study in nature.

We comprehensively used descriptive statistics, inferential statistics, and time series econometrics. We found that fiscal policy as conducted by governments is not perceived as credible. The targets set forward by the government are often not met and usually the divergence is on the negative side. Revenue and spending projections tend to be overestimated, leading to a deficit bias and growing indebtedness of the government.

Since overall balance is the most important indicator to evaluate the fiscal policy, we infer that fiscal policy in Indonesia as a whole is not credible. The credibility of fiscal policy will be worst, of course, when there is no budget revision in the mid year. Those findings imply that political and institutional factors remain the main obstacle in the short-run for government to conduct the credible fiscal policy. Therefore, those results suggest feasibility to establish the fiscal council with independent powers to conduct the credible fiscal policy to maintain fiscal sustainability in the long-term.

This preliminary study only focuses on the measurements of fiscal policy credibility. Since the overall deficit is a consequence of revenue and spending, the further research could be directed to analyze how the government forecast the revenue so the targeted government revenue is always underestimated. Similarly, deeper studies could be done to explain why the planned government expenditure is overestimated. Using the higher frequency data (hopefully monthly data), the next research is advisable to re-check those findings. Indeed, credibility is the hottest issue in the effectiveness of macroeconomic policy.

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