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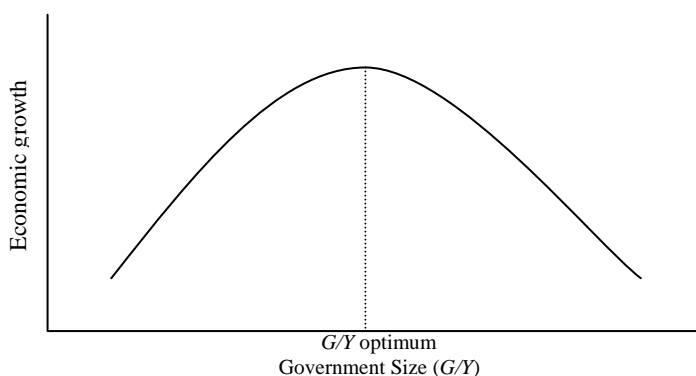
## ECONOMIC GROWTH AND GOVERNMENT SIZE IN INDONESIA: SOME LESSONS FOR THE LOCAL AUTHORITIES

*Arief Ramayandi*

Interests on conceptual relationship between economic growth and government size have been initiated since the beginning of 19<sup>th</sup> century. Aggregate income has initially been considered as an important determinant of government size, and the relationship has widely known in the literature as ‘Wagner’s law’ or the ‘law of expanding state expenditure’, i.e. as economy develops, public sector tend to expand. However, some more recent arguments tend to put more attention to the reverse relationship between the two variables. It is argued by the conventional wisdom of neoclassical models that government size will have no long-run impact on growth. An influential article by Barro (1991), appeared to present an empirical evidence favoring the view that a heavy government involvement in economic activity tend to be growth impeding.

The endogenous growth literature argues that a relatively low government size would tend to be positively associated with growth. However, after reaching a certain optimal level of size, it would produce an adverse impact on growth (Barro and Sala-i-Martin, 1995: 152-156). The reason of the earlier argument is that the productive effect of government involvement still exceeds its social costs of raising funds – hence adding positive effect on growth, while at the later case the social costs of the government involvement dominates – hence growth declines as the government size get larger. Figure 4.1 illustrates the relationship between the two variables. Another alternative explanation (following Barro, 1990) would be by dividing government expenditure in to two categories: productive and unproductive ones. The earlier category is expected to have a positive impact on growth, while the later one would conversely affecting growth. Hence, whether or not the government size is growth impeding depends mostly on the type of spending of the government.

*Figure 4.1 The Size of Government – Growth Curve*



Source: Gwartney, et. al, 1998.

Besides the controversy on the direction of how growth and government spending are related, the way of how government size determines growth is also a subject of a debate. Kweka and Morissey (1999) summarizes some empirical findings on this issue. Some studies (e.g. Kneller, 1998; Devarajan and Vinaya, 1993)<sup>1</sup> show support for the productive-unproductive government spending argument. Ram (1986), by analyzing a panel data of 115 countries, concludes that the growth of government will tend to have a positive effect on growth. Some other studies (e.g. Lin, 1994: for the case of developed economies; Kormendi and Meguire, 1985)<sup>1</sup> show that unproductive government spending has no (statistically) significant impact on growth. This view was also supported by Andrés, et. al (1996), which shows a non-robust correlations between aggregate government spending and growth for the case of OECD countries.

Most empirical studies on this issue (e.g. Barro, 1991; Landau, 1983 and 1986; Alexander, 1990; Kweka and Morissey, 1999 for the case of Tanzania)<sup>1</sup>, however, come over a conclusion that government size tend to have a negative impact on growth. Fölster and Henrekson (1999) also found a support for this kind of relationship in the case of 23 OECD countries over 1970-1995. Most of those empirical studies that conclude negative effect of government size on growth argue that in most cases, government operations were often conducted inefficiently.

The differing conclusions of empirical studies on this line of literature has invited controversies and debates on how the two variables of interest are related, hence leading to an inconclusive agreement. Opponents of the findings of negative relationship between the two variables often argue that most empirical models that lead to this particular conclusion were committing specification bias. Most of the models, which lead to the negative relationship conclusion, were estimated using a single equation model. The possible simultaneous nature of the two variables is one of the potential sources of problem for that analysis which utilizes only one-equation models. Another critic comes from the paper of Levine and Renelt (1992), who found that the partial correlation between the broad arrays of fiscal measures that they studied is not robustly correlated with growth. Easterly and Rebelo (1993) paper also shows that an inclusion of additional regressor on the equation could switch the sign of the relationship.

The other argument for this objection also comes from the fact that the negative relationship between government size and growth were mostly comes from a panel data of many different countries with different characteristics (Ghali, 1998). This fact leads some to argue that the finding might not be hold for one individual country using time series data set. There are not many studies that have attempted to use time-series data set for an individual country in this literature (among others: Ram, 1986; Ghali, 1998; Kweka and Morissey, 1999). In order to enrich the literature, this simple article attempted to analyze the relationship between the two variables of interest for the case of Indonesia. The issue would be of interest for it provides room to examine the impact of government size on economic growth in the country. Furthermore, in the light of the undergoing process of fiscal decentralization in Indonesia, it also provides some lessons for the local authorities in the provincial and municipal level.

## METHODOLOGY

The error correction model (ECM) is used for the purpose of analysis. In order to apply the model, a co-integrating relationship among variables used needs to be identified. The two-step procedure suggested by Engle and Granger (1987) is used for estimating the ECM, hence the co-integrating relationship will first be tested using an OLS procedure to attain a long-run relationship among variables.

The main model used is basically a modification of the one applied by Kweka and Morissey (1999), which was build on the basis of a growth accounting model of Lin (1994) where output ( $Y$ ) is assumed to be a function of capital ( $K$ ) and labor ( $L$ ). Since the main interest of this paper is to investigate the relationship between economic growth and government size, the modification made in the main model only separate the  $K$  component in to those of private and government while keeping  $L$  as an aggregate of those two sectors.

Economic growth ( $y$ ) is assumed to be determined linearly by the relative government size ( $G/Y$ ), share of private investment over GDP ( $I_p/Y$ ) and the labor density over production ( $L/Y$ ). In addition,  $y$  is also assumed to be linearly determined by the measure of the openness of the economy ( $X/Y$ ), which is proxied by the ratio of the national real export over GDP<sup>3</sup>. To capture the potential break in the growth series due to the 1998 economic crisis, a dummy variable is also being added as one of the determinant. Finally, due to data limitation, the government spending is being divided into government consumption ( $C_g$  – measured as the government routine expenditure in the budget) and government investment ( $I_g$  – measured as the government development expenditure) in order to capture the productive-unproductive spending argument.<sup>4</sup>

Some studies employed the growth of government spending as determinant of economic growth (e.g. Ram, 1986) and suggested an existence of a positive significant effect. However, since growth of government spending could not clearly capture the relative size of government in the economy, this paper (as stated in the paragraph above) employed  $G/Y$  instead.

This article also tries to deal with some of the above-mentioned potential defect in estimation procedure. To (partially) check the existence of the Levine-Renelt critique (Fölster and Henrekson, 1999: p.345) some estimation are conducted by altering the conditioning variables from the main co-integrating model. In order to check for the potential endogeneity problems of government size variable, as suggested by the Wagner's law, the version of Hausman test proposed by Davidson and MacKinnon is being conducted on the main co-integrating model. Once the main co-integrating model qualifies to escape from those potential problems, the ECM is estimated, and the analysis at the national level will be based on that estimation results.

## EMPIRICAL RESULTS

### Test Result for Unit Roots

Since the co-integrating relationship in the ECM requires that all variables be integrated at the same level ( $I(d)$ ), the augmented Dickey-Fuller (ADF) test is being used to

investigate the stationarity status of each variable. ADF test is being carried out through the following regression:

$$\Delta x_t = \alpha + \rho x_{t-1} + \beta T + \sum \delta_i \Delta x_{t-i} + u_t \quad (4.1)$$

where  $x$  is the relevant series,  $T$  is a time trend, and  $u$  is an error term.

The unit roots tests are performed both on the level variables as well as on their first differences. The lag length for the ADF test is chosen according to the Akaike Information Criterion (AIC). The null hypothesis tested states that the variable under investigation has a unit root and rejected in favor of the alternative of no unit root if the t-value obtained is less than the critical value of the ADF statistic.

Table 4.1 below presents the results of unit roots tests and it gives a clear indication that all the variables in the main model is  $I(1)$ . Therefore, they satisfy the requirements of a possible existence of a co-integrating relationship among them.

*Table 4.1 Test Results for Unit Roots*

Variable under investigation	t-value for the test on levels	5% Critical Values	t-value for the test on first differences	5% Critical Values
Y	-3.18	-3.57	-5.26**	-1.95
Cg/Y	-2.81	-3.57	-2.59**	-1.95
Ig/Y	-2.52	-2.96	-4.64**	-1.95
Ip/Y	-3.18	-3.57	-4.11**	-1.95
L/Y	-1.86	-3.57	-4.80**	-3.57
X/Y	-2.98	-3.57	-5.68**	-1.95

Note: \*\* indicates significance at 5% level.

### Long-run Estimate and Co-integration Test

As recommended by Engle and Granger (1987), the main co-integrating model was estimated using an OLS procedure and produce the following result:

$$y_t = 1.88 - 1.08Cg/Y_t - 0.53Ig/Y_t + 0.27Ip/Y_t + 0.11L/Y_t + 0.40X/Y_t - 5.80D98 \quad (4.2)$$

se.: (7.8) (0.37)\*\*\* (0.25)\*\* (0.13)\* (0.08) (0.17)\*\* (2.8)\*\*

$R^2$ : 0.80      DW-stat: 1.92       $F$ -stat: 15.91\*\*\*

Note: \*\*\* indicates significance at 1% level  
 \*\* indicates significance at 5% level  
 \* indicates significance at 10% level

An ADF test (as shown in equation 4.1) is ran to the error term produced by equation 4.2 in order to test for co-integration. The absolute value of the t-statistic produced from the ADF test is 5.12, which is well above the critical value at 1% level of significance (4.07) suggested by Engle and Granger (1987: p. 269). Therefore, the result strongly indicates a rejection of the null hypothesis of no co-integration, in favor of the alternative of co-integration among variables in the model.

In conclusion, the tests suggested that the main co-integrating model in this case (equation 4.2) does indicate an existence of a long run equilibrium behavior in the system. As an implication, by Granger representation theorem, there exist an error correction representation for the system at hand.

### Check on the Parameter Signs' Stability

One interesting finding that comes up from equation 4.2 is that both measures of government size ( $Cg/Y$  and  $Ig/Y$ ) appear to have a significant negative impact on economic growth. To check for the (relative) robustness of those signs, several regressions were run by altering conditioning variables for economic growth. The result of the experiment is shown in the table below.

**Table 4.2 Sign Sensitivity Check**

Dependent Variable:  $y$  for the period of 1969-1999

Indep. Variable	I	II	III	IV	V	VI	VII
G/Y	-0.46 (0.14)**	-	-0.59 (0.19)**	-	-0.48 (0.23)**	-	-0.69 (0.23)**
Cg/Y	-	-0.74 (0.24)**	-	-1.08 (0.37)**	-	-0.97 (0.39)**	-
Ig/Y	-	0.01 (0.34)	-	-0.39 (0.22)*	-	-0.30 (0.26)	-
Ip/Y	-	-	0.24 (0.09)**	0.35 (0.11)**	0.31 (0.12)**	0.41 (0.14)**	0.18 (0.12)
L/Y	-	-	-	-	0.07 (0.08)	0.06 (0.08)	0.12 (0.08)
X/Y	-	-	-	-	-	-	0.43 (0.17)**
D98	-	-	-8.34 (2.26)**	-5.12 (3.0)*	-8.19 (2.28)**	-5.09 (3.03)*	-8.33 (2.07)**
R <sup>2</sup>	0.26	0.31	0.72	0.75	0.73	0.75	0.78

Note: - I to VII are the alternative models estimated in addition to the main model in equation 2.

- Numbers in parentheses represents the standard deviation.

- \*\* indicates significance at 5% level

\* indicates significance at 10% level

Table 4.2 above shows that two of the government size measures ( $G/Y$  and  $Cg/Y$ ) have a consistently negative significant effect on growth.  $Ig/Y$  on the other hand, shows slightly different result. Although it still consistently contributes negatively to growth (except for the case of regression II), the contribution is not consistently significant through out the experiment. This finding indicates that the Levine-Renelt critique might be relevant in the case of  $Ig/Y$  using Indonesian data set from 1969-1999. Nevertheless, since the sign for this particular variable are relatively consistent through out the experiment and (as reported in equation 4.2) it has a negative significant effect on growth, this paper will consider this variable as having negative impact on growth for the analysis<sup>5</sup>.

From the comparison of the relative magnitude of negative effect from total government size ( $G/Y$ ) and its disaggregated components ( $Cg/Y$  and  $Ig/Y$ ) towards

growth, it is implicative that the share of government consumption ( $Cg/Y$ , regarded as unproductive spending) dominates the negative effect of the total government size on growth. Therefore, the finding does support the argument of negative impact on growth from unproductive government spending. Also, by looking at the  $R^2$  value from regression I, the government size alone explains about 26% of the fluctuations in Indonesia's economic growth.

### Endogeneity Test

To check for endogeneity of the measures of government size, a two-stages Hausman specification test is conducted on both  $Cg/Y$  and  $Ig/Y$ <sup>6</sup>. In the first stage, the procedure was conducted by running an auxiliary regression on both variables using Indonesia's foreign debt as an additional instrumental variable. In the second stage, equation 2 is being re-estimated by including the residuals obtained from both auxiliary regressions. The statistical inferences of the coefficient on residuals are used to test the null hypothesis of weakly exogeneity of  $Cg/Y$  and  $Ig/Y$  against the alternative of endogeneity of both variables.

From the test conducted, the t-statistic for the first stage residual in the second stage regression for both  $Cg/Y$  and  $Ig/Y$  are similar (-1.39). The t-statistic for both tests lies in the interval of -1.96 and 1.96 (the normal distribution's critical value for 5% level of significance), hence fails to reject the null hypothesis of weakly exogeneity. This result indicates that for the Indonesian data series in 1969-1999,  $Cg/Y$  and  $Ig/Y$  could be considered as weakly exogenous of  $y$ , suggesting the potential endogeneity problem suggested by Wagner's law can be disregarded. The conclusion justifies the Keynesian view of an exogenous fiscal policy under discretionary government. It also justifies the utilization of a single equation model in measuring the behavioral relationships among variables under consideration.

### The ECM Result

As the statistical check on potential problems pointed that equation 2 is relatively acceptable, the error produced (ER) is used as the error correction component in the ECM to see whether the system is adjusting for any departure from market equilibrium in the short run. The best result produced by our estimation is reported in table 4.3 below. The short run relationship among variables indicates that changes in economic growth are only being determined contemporaneously by all of the determinants listed in the table. Again, AIC criterion is used to determine the best result.

**Table 4.3 The ECM Result**

Dependent Variable:  $\Delta y$  for the period of 1969-1999

Variable	$\Delta Cg/Y$	$\Delta Ig/Y$	$\Delta Ip/Y$	$\Delta L/Y$	$\Delta X/Y$	$ER_{t-1}$
Coefficient	-1.42	-1.21	0.39	-0.28	0.53	-0.93
	(0.36)***	(0.37)***	(0.09)***	(0.19)	(0.13)***	(0.22)***
	$R^2$ : 0.85		F-stat: 21.97***		D-W stat: 2.22	

Note: - Numbers in parentheses represents the standard deviation.

- \*\*\* indicates significance at 1% level

### **Interpretation of the Long-run and Short-run Relationship**

As reported in equation 4.2, the long run (co-integrating) relationship qualifies the standard statistical tests, where all determinants simultaneously determined around 80% of the fluctuations in economic growth ( $y$ ). Both measures of government size contribute a negative significant effect on growth. The share of unproductive spending ( $Cg/Y$ ) has a larger negative contribution towards growth (-1.08) as compared to the productive spending share ( $Ig/Y$ ), which contributes -0.53. This finding indicates that both measures of government size tend to be growth impeding in the case of Indonesia. In the case of  $Cg/Y$ , the finding supports the unproductive spending argument due to inefficient resource re-allocations of this spending.

Particularly for the case of  $Ig/Y$ , the finding suggests that the share of government investment in Indonesia is basically being spent inefficiently and tend to crowd out private sector activities, thus impeding growth. Some intuitive arguments behind this finding would be related to the relatively high corruption in Indonesia's public sector activities<sup>7</sup>. This situation has created high leakages and inefficiencies in the process of government development programs. These inefficiencies, in turn, obstructed the programs and contribute negatively on growth. These facts seem to justify the negative coefficient of  $Ig/Y$  in equation 4.2.

The higher government size (particularly in terms of spending) also induces government to collect more taxes<sup>8</sup>. Inefficiency in Indonesia's taxing system has also tends to induce higher burden on the productive sector. This argument goes along with the one proposed by Alesina, et.al (1999) on how taxes discourage private sector profits, hence hurting aggregate economic growth.

Other conditioning variables ( $Ip/Y$ ,  $L/Y$  and  $X/Y$ ) in equation 4.2 has the expected signs, which consistent with theory. Private investment does affect growth positively in the case of Indonesia. As suggested by the literature, economic openness of Indonesia does contribute positively on growth with relatively high magnitude. The contribution of labor on growth, however, shows an insignificant effect. The argument behind this finding is mostly due to the over supply of labor situation in Indonesia. Within past few decades, Indonesian government tends to promote the growth in labor-intensive sectors to absorb the existing labor force. This situation has, to some extent, overflow the production sector with labor, hence pushing their productivity to a very low level. In turns,  $L/Y$  does not have a significant impact on growth. The dummy variable (D98) shows a negative significant effect on growth. This indicates that the economic crisis in 1998 has brought about 5.8% drops in average growth level in Indonesia.

The short run relationship, as reported in table 4.3, also qualifies the standard statistical tests, where all determinants simultaneously determined around 85% of the fluctuations in the change in economic growth ( $\Delta y$ ). Both measures of government size in the short run still have a negative impact on growth, thus goes along with the long run relationship described previously. The magnitude of the effect for both government size variables were increased in the short run, with the negative effect of  $Cg/Y$  still larger than  $Ig/Y$  (even though the negative magnitude of  $Ig/Y$  had increased significantly in the short run/ECM equation). This finding indicates that any change in government size in the short run instantaneously reverses growth.

The short run effects of the other conditioning variables (except for  $L/Y$ ) are consistent with the one obtain from the long run relationship. The sign for  $L/Y$  changes



in the short run relation. However, it is still insignificant. Thus, even in the short run, the change in labor density over production does not affect growth significantly. This finding, again, reinforced the argument of the relative saturation of labor productivity in Indonesia at a very low level.

Coefficient obtained for the lagged error component reported in table 4.3 shown a negative significant sign (-0.93). This coefficient refers to a very high speed of adjustment in the growth system of the economy. In other words, there exist an error correction mechanism for the economic growth model considered in this paper. The finding also indicates a relative stability of the long run system over a short period, where every departure from equilibrium in the long run relation will be corrected almost entirely in the following year. Thus, the Indonesian data in 1969-1999 tells us that the growth pattern is relatively consistent with the long run relation outlined in this paper.

### **SOME LESSONS FOR THE LOCAL AUTHORITIES**

In the light of the undergoing fiscal decentralization in Indonesia, some lessons could be taken from the national level experience reported above. The current fiscal decentralization process entitles local authorities to manage their own financial resources without any interference from central government. In theory, this process is expected to cut down the bureaucracy in, hence simplify, decision making process of the local government in order to give them some room to pursue more efficient welfare enhancing public activities. In so far, however, the undergoing process had tended to push the local authorities to “over-exercise” its regulatory functions and produce pressures on the local production sector. This practice points to the tendency of the local authorities to enlarge their size in local economic activities.

The national level evidence shows that, in the case of Indonesia in 1969-1999, government size tends to contribute negatively on economic growth. As discussed previously, the source of this negative impact might come from inefficiencies in public sector spending management. More generally, one of the main sources of this situation might arise from the overall inefficiencies in the system of budget management in Indonesia. Following the behavioral association between government size and growth in endogenous growth literature, the finding suggests that government size in Indonesia might have been too large during the sample in consideration. In other words, the level of government size had passed its supposedly optimal level.

Facing the above-mentioned source of negative impact of government size to growth, it might be appropriate to accept the idea for reducing the current government size to a smaller level in order to go for the optimal. On the contrary, Keynesians would argue that under the period of economic hardship (like the one faced by Indonesia currently), government involvement would be preferable. To compromise with the argument, one possible way to do would be to cut down all inefficiencies in government budget management. Whether or not the government size is to be enlarged or reduced, each level would likely be corresponded to higher level of growth<sup>9</sup> since a more efficient government budget may reduce its social costs of raising funds while at the same time may also boost its productive effects. In a particular theoretical case, the optimal level of government size (as shown in figure 4.1) could also be shifted

rightward<sup>10</sup>, i.e. optimum growth level achieved at higher government size. However, the idea of a right shift of this optimal government level is still questionable since that must not always be the case. Eventually, if the level of government size were still considered to be too large, reducing it would still serve as the most appropriate policy.

The experience from the national level posits some notes of cautions for the local authorities in managing their budget. Enlarging their size in regional economic activities might as well be an impediment for the economic growth of their region. Therefore, if economic growth is set as an important objective of their governance, then the current post-decentralization trend in managing budget should be put in to caution. Scaling down the size level while improving budgetary management at the same time could serve as a better option to do, because it could enhance growth better than positioning a larger government size in the local economic activities.

A simple observation using average economic growth ( $y^L$ ) and government size ( $G/Y^L$ ,  $Cg/Y^L$  and  $Ig/Y^L$ ) in 1996-1999<sup>11</sup> for 213 municipalities and regencies in Indonesia is conducted to obtain a rough picture of the local authorities situation concerning this issue. The following table summarizes the observation.

**Table 4.4 Observation on Local Authorities Situation in 1996-1999**

Dependent Variable:  $y^L$  for the period of 1996-1999

	Model	$G/Y^L$	$Cg/Y^L$	$Ig/Y^L$	$R^2$
All period average (1996-1999)	I	-0.10 (0.12)	-	-	0.003
	II	-	-0.03 (0.20)	-	0.000
	III	-	-	-0.47 (0.28)*	0.013
	IV	-	0.81 (0.36)**	-1.43 (0.51)***	0.036
Pre-crisis average (1996-1997)	I	-0.94 (0.24)***	-	-	0.066
	II	-	-0.85 (0.39)**	-	0.022
	III	-	-	-3.24 (0.55)***	0.144
	IV	-	1.91 (0.55)***	-5.40 (0.82)***	0.190
Post-crisis average (1998-1999)	I	0.03 (0.11)	-	-	0.000
	II	-	0.13 (0.18)	-	0.003
	III	-	-	-0.06 (0.23)	0.000
	IV	-	0.52 (0.31)*	-0.63 (0.41)	0.014

Note: - Numbers in parentheses represents the standard deviation.

- \*\*\* indicates significance at 1% level

\*\* indicates significance at 5% level

\* indicates significance at 10% level

The results from the simple observation on local authorities (as shown in table 4.4 above) shows that all measures of government size considered in this paper do not tend to have a considerable ability in explaining regional growth fluctuations. An exception occurred for the experiment using pre-crisis data, where government size variables are able to explain the fluctuations in regional growth marginally ( $R^2$  of 19%). Therefore, it is probably acceptable to conclude that the relationship between government size and growth changes due to crisis. If we assume that pre-crisis experience serves as the general representation of the longer-term case, then the note of cautions given by the national level evidence could be regarded as relevant.

On the post-crisis period, besides the inability of measures of government size to explain fluctuations in growth, they also tend to have no significant impact. An exception applies for  $Cg/Y^L$ , which have a positive and marginally significant impact on growth. The possible intuition behind this finding is that within the post-crisis period considered here, overall growth of the economy was driven by consumption. Therefore, it might justify the positive contribution of local government consumption in that particular sample.

For the pre-crisis observation, all measures of government size do have a significant effect on growth. The local government consumption, however, indicates a symptom of parameter instability. Positive sign for this variable in regression IV might arise from its negative correlation with the local government investment. The other two measures, however, shown a consistently negative significant impact on growth. This finding resembles the national level evidence, hence reinforcing the note of cautions given previously.

One other thing that worth to be noted here is about the consistently negative contribution of  $Ig/Y^L$  on growth through out the experiment. It somehow strengthens the argument of a highly inefficient government development programs, even in the municipalities and regencies level.

## CONCLUDING REMARKS

This article investigates the impact of government size on economic growth using a sample of time series data on Indonesia (1969-1999). Together with all potential imperfections of the methodology utilized, the finding provides an additional support for the argument that government size tends to have negative impact on growth. This negative association persists in both the long run as well as in the short run relation as reported by the ECM result.

Share of government unproductive spending ( $Cg/Y$ ) was found to affect growth negatively. This tendency is in line with Barro (1990) argument about the effect of unproductive government spending on growth. Surprisingly, the share of productive government spending (as measured by  $Ig/Y$ ) also shows negative effect on growth. This finding suggests the inefficiencies associated with public development programs in Indonesia. More generally, the result suggests an existence of inefficiencies in the overall management of government budget in Indonesia during the period under consideration.

Economic growth in Indonesia is also being influenced by private investment and measure of economic openness. On the contrary, the existing labor market situation has produced a non-significant effect of labor towards growth. Policies concerning development of labor productivity are parts of the crucial agenda to be put in the development plan of Indonesia.

In relation with the undergoing decentralization process, the above finding provides a note of cautions for the local authorities. An observation using cross-section data of 213 municipalities and regencies also suggests that the national level type of associations between government size and economic growth also present at the regional level. Therefore, it might be wise for the local authorities to reconsider the concept of expanding their regional government size in terms of economic activities.

Finally, as implied by the interpretation of the empirical findings of this paper, the need for more efficient government budget management (both at the national as well as at the regional level) is unavoidable. To this end, of course, a more detailed and comprehensive study concerning the issue will be necessary to be conducted. This paper is only a first step in addressing the issue in Indonesia, and could always be used as a reference, complement, or simply a consistency check for different methodology.

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## NOTES

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1. As quoted from Kweka and Morissey (1999).
2. It is important to note, however, Lin (1994) also found that this type of government spending show a positive significant impact on growth. As suggested by the findings of Levine and Renelt (1992).
3. As suggested by the findings of Levine and Renelt (1992).
4. All the data set used was collected from various sources (e.g. the IFS, World Bank, ADB, Central Bureau of Statistics of the Republic of Indonesia and the ministry of Finance of the Republic of Indonesia) for the year of 1969-1999.
5. Some studies also regard the negative effect of government investment towards growth as acceptable through inefficiency in resource allocation argument (e.g. Alesina et. al., 1999 and Garfield, 1995) and inefficiency in utilization argument.
6. The detail test is not presented in this paper due to space consideration
7. Within the past few years, Indonesia has been consistently listed as one of the top corrupted country according to the Transparency International Corruption Perceptions Index.
8. As indicated by the existence of the "tax and spend" argument in Indonesia's data (Sumiarti, 2002).
9. In figure 1, this situation would be illustrated by an upward shift of the overall government size – growth curve.
10. This shift would essentially be a shift of the overall government size – growth curve to the upper right part of the plane in figure 1.
11. The period span is chosen due to limitation in data availability.