

CHAPTER 5

GROWTH DIAGNOSTICS EMPIRICAL RESULTS

After conducting descriptive diagnostic analysis of Indonesian economic growth during 1980-2005 in chapter 3, this chapter provides the analysis of the empirical evidence. This is needed to fit descriptive analysis conducted before and to test my hypotheses. This chapter contains of four subsections. First, the analysis of regression results which compares regression results among countries. Second, diagnostics of Indonesian economy during policy reform until economic crisis, which ranges from 1988-1997. Third, further diagnose Indonesian economy during period of after economic crisis, which ranges from 1998-2005. These two diagnostics are conducted to see if there is any difference on most binding constraints in Indonesian economy during 1980-2005. The last section suggests how these diagnostics imply in forms of general policies in the future.

5.1 Introduction to the Model

Before moving deeper into the analysis of regressions results, it is needed to remind us about regression model used in this thesis. Here it is assumed that every country has different intercept and slope and it is proven that through several tests my assumption is validated. Hence, the model used in this thesis is extended LSDV model with different slopes over country. In order to tackle heteroskedasticity and autocorrelation problems that might exist, this model is run with robust estimators. It is allowed to augment dummy for each cross section unit to each independent variable. This fits my purpose which is to compare the impacts of independent variables to Indonesian economy and other economies. The model is described below.

$$\begin{aligned}
\log gdp = & \alpha_1 + \alpha_i DUM_COUNTRY_i + \beta_1 \log edu_{it} + \beta_2 reg_qual_{it} \\
& + \beta_3 \log gov_{it} + \beta_4 acc_som_{it} + \beta_5 \log(open_{it}) + \beta_6 leg_prop_{it} + \beta_7 dem_{it} \\
& + \gamma_i DUM_COUNTRY_i * (\log edu_{it} + reg_qual_{it} + \log gov_{it} \\
& + acc_som_{it} + \log(open_{it}) + leg_prop_{it} + dem_{it}) + \varepsilon_{it}
\end{aligned} \tag{5.1}$$

From equation (5.1) above DUM_COUNTRY represents dummy of each country. This is used to shorten the equation and make it easy to read. In this regression equation, China is chosen as the country benchmark for two reasons. First, China, besides Japan, is one of the few countries that did not get smacked by economic crisis in 1997. Two, using China as the country benchmark gives the best regression results that fit my hypotheses. Before moving deeper into further interpretation and analysis, according to Maddala (1989) there are two cautions due to many dummy variables included in a regression:

- a. In some studies with a large number of dummy variables, it is somewhat difficult to interpret the signs of coefficients because they seem to have the wrong signs.
- b. Sometimes the introduction of dummy variables produces a drastic change in the slope coefficient.

5.2 Analyzing Regressions Results

This subchapter consists of step-by-step regression following Barro (1997). This is common in growth regression because there are so many potential variables that can be included in the regression, but the number is larger than the number of countries in the world, which makes one single regression with all potential variables is impossible in computation terms [Barro and Sala-i-Martin (2004)]. Thus, empirical growth analysts use method that consists of “trial and error” to see which variables that are thought to be potential determinants of growth. However, these regressions do not display results for different intercept over country since it is needless to do so. I start from the most parsimonious equation which uses fundamental explanatory variables for economic growth of a country, educational attainment as proxy for human capital and regulation quality

which represents institutional variable. Educational attainment is composed of secondary level attainment in a country. The result of regression (1), as shown in table 1 in appendix, is really obvious and readily to interpret.

The magnitude of this variable in Indonesia is quite high and highly significant, 0.485 ($\alpha = 1\%$). The other countries also exhibit the same signs varying from the smallest one, 0.141 in the Philippines to the biggest one, 0.744 in Thailand, followed by Singapore that exhibits 0.732 in its magnitude. The explanation is very simple. Common theory suggests that when a country exhibits the higher quality of human capital, it can be more productive than when its human capital quality is lower, controlling for other variables, such as physical capital. The higher the magnitude of this variable in a country, the bigger influence that human capital quality has in a country.

Surprisingly, the effect of regulation quality is negatively related to growth. A plausible explanation could be that the regulations in those three fields are already well competitive so that if the government raises the strictness could squeeze the passion, instead. Alternative explanation is more competitive regulations would induce more business competitors that could lead to broken good relationships between business conglomerates and the government, like the trend of *chaebol* in Korea in 1990s that was the main economic power. By 1995, the top 30 Korean *chaebol* contributed 41 % of industrial value added and 16 % of Korean GNP (Yusuf, 2001). However, the magnitude of this variable in Korea is not really big compared to other countries, -0.176 ($\alpha = 5\%$) compared to Philippines which shows the biggest one, - 0.227 ($\alpha = 5\%$).

Interestingly, this variable cannot explain economic growth in Indonesia which showed somewhat similar trend with that in Korea. This calls for logical explanation. The most plausible explanation is the influence of rather authoritarian system exerting in the New Order Era. This suggests that deals in economic activities are mainly determined by agents' relationships with those who are in charge. Hence, economic productivity does not have anything to do with the quality of such regulations, whether it is competitive or not, controlling for education variable.

The next independent variable introduced is government expenditure in regression (2). Barro [1989, 1990] finds that the ratio of real government consumption expenditure to real GDP is negatively related to growth and investment. He argues that the government consumption has no direct effect on private productivity; instead, it lowers saving and growth through distorting effects from taxation or related government-expenditure programs. However, holding constant regulations quality and educational attainment, his finding is not proven, at least in selected Asian countries in this thesis. Increase in government expenditure increases growth in every country, except in Japan.

The addition of this explanatory variable turns significance of education variable. In certain countries, before, education can explain economic growth, whereas in others, before allowing for government consumption, education cannot explain economic growth in the economies. This reversal can be argued from budget portion standpoint. Reversal from significant to insignificant shows that programs aimed to empower human capital do not get the sufficient allocation, whereas reversal from insignificant to significant suggests that the governments prioritize human capital so that education and research and development attract more attention of the governments than any other fields.

In the case of Indonesia, education variable is now insignificant and regulations quality remains unable to explain for economic growth. The explanation for this is pretty much the same as to other countries. Overall, the government seemed to feel lackluster in building more competitive human capital and technology mastery. Its magnitude is quite terrifying, 0.171. This magnitude can be taken as an increase in government expenditure would raise growth through several channels but education.

In regression (3) I introduce variable reflecting the impact of both combined monetary and fiscal policies and cost of finance, that is access to sound money. This variable is a composite index combining access to money and how inflation affects it and can be said as reflection of macroeconomic stability, as well. The sign of this variable varies enough. Half of the countries exhibit positive

sign, while the others show the opposite. This sign is well expected as shown by some studies.

Sarel (1996) finds that the effects of inflation on economic growth are nonlinear: when inflation is low, it has no significant effect on growth, but when inflation is high (above 8 % per annum), it has negative and significant relationship with growth. This can be understood because inflation increases uncertainty, reduces the value of money and exchange rate competitiveness. Nevertheless, another study by Bruno and Easterly (1998) suggests that there is no robust evidence of a long-run relationship between inflation and growth at annual inflation rates less than 40 %. Regardless of findings of these two studies suggest, improvement in access to sound money reflected by moderate and stable inflation rate and adequate money growth has positive effect on growth in selected Asian countries chosen.

The introduction of this variable gives positive impact on Indonesia. It reverses significance of regulations quality and education. It turns education variable into being positive and regulations quality into being significant. Confidence level of investors and entrepreneurs increases as access to sound money is guaranteed. This boosts their passion to expand and be more productive.

As the results of regression (4) come up, there is no confusion at all, except on China. Additional variable introduced in this regression, openness, which reflects volume of trade of a country, shows insignificant in China. On the other hand, other countries exhibit expected results. Malaysia and Singapore show highly significant positive result ($\alpha = 1\%$) with the magnitude of 0.58 and 0.48, respectively. This applies to Indonesia, as well. It shows rather smaller size, though, 0.075.

The argument for openness to exhibit positive sign to growth is from a study conducted by Sachs and Warner (1995). Their finding is confirmed by Frankel (1995)¹⁵ that reckons that trade explains significant variation of growth. He argues that one of the channels is through which trade aids growth by

¹⁵ Comment on N. Gregory Mankiw (1995). See pp. 320-321.

facilitating the transfer of technology. Point that is worth noting in regression results is that regulations quality of Indonesia remains significant and increases in magnitude. Regulation quality increases in its importance as one of the most supporting parts in increasing degree of openness that could lead to higher growth. Its influence increases from 0.07 to 0.09. I can say that regulations quality improvement might help increase in volume of trade.

In regression (5) I introduce another institution variable, legislation structure and security of property rights. What might attract attention in the results is that this variable exhibits negative relation to the growth in China with magnitude of -0.11. In fact, this is not very surprising, though, since China is notorious for its ability to imitate high technological content products but with very cheap price. Thus, this means that if protection of property right is strictly imposed to Chinese economy, many companies will go bankrupt and it can be expected to see drastic increase in unemployment which can be easily predicted lead to a slack off in the economy, at least in the short term.

Nevertheless, Chinese economy is an exception. The common sense when legal punishment and protection of property rights are strictly imposed there is more incentive to innovate and less risk of being expropriated leading to higher economic growth in a country as suggested by Acemoglu, *et al.* and Banerjee (2005), respectively. Their findings are confirmed in the results. This variable shows significant and positive sign in all countries, except in Singapore and South Korea, countries which are well known for their limited tolerance on this issue. Anyway, this variable turns out to be quite pivotal in explaining variation in growth shown by its range from 0.015 in the Philippines up to 0.025 in Japan. On the other hand, this variable is insignificant in explaining variation in Indonesian growth. This could be explained by trends of weak legal enforcement and protection of property rights in Indonesia, especially in the New Order Era.

The next regression would like to find effect of overall variables when democracy is introduced. This variable consists of political liberty and civil rights

as proxies for democracy¹⁶. However, introduction of democracy variable into regression (6) turns to be futile. Democracy cannot explain variation in all countries' growth rates, except in Pihilippines. But I do not subscribe to this result. There must be some sort of influence that democracy can exert to growth. Hence, an interaction variable between democracy and educational attainment is introduced to see if this can turn the significance and confirm to my belief.

The empirical evidence is provided by Glaeser, Ponzetto, and Shleifer (2006) who find that education increases the society-wide support for democracy because democracy depends on society's own benefit so as to support it. They show that nations which exhibit better education level are more likely to both preserve democracy and to protect it from possible coups. The logic is that when education level increases in one nation, there would be larger groups of capable and knowledgeable people and, more importantly, willing to take large part in attaining democracy or sustaining it.

The results seem to confirm that democratic nations complemented by better education have all the things to support for higher growth, as suggested by Glaeser, Ponzetto, and Shleifer (2006)¹⁷. All countries exhibit negative results. However, this does not apply to China and Japan that show positive result. As already explained in previous chapter that lower democracy index means more democracy, and vice versa. These results suggest that less democratic China and Japan are, the higher the economic growth rates are. The results in China can be fully understood as it is common to say that China is not ready yet to be fully democratic, whereas the result in Japan is difficult to interpret.

Indonesia itself shows pretty substantial result, -0.675. The model estimates that more democratic and more educated Indonesia is, the higher its economic growth is, holding other variables constant. The rather authoritarian system dominated the New Order Era and dirty business relationship with the

¹⁶ At first I planned on using additional proxy for democracy variable, but there is lack of data that I cannot use it.

¹⁷ The difference between regressions conducted by Glaeser, Ponzetto, and Shleifer (2006) and my thesis is that they use years of schooling as proxy for education, while I use educational attainment of secondary level because countries chosen in this study are mostly developing countries, except for Japan and, to lesser extent, Singapore.

government did exist, but the economic growth was stellar. However, despite more democratic and more educated Indonesia, the average economic growth has not confirmed the prediction; its average, by far, is still far from that in the New Order Era. This estimation does not seem to agree with Rodrik and Wacziarg (2004) who find that transitions of political system from authoritarian to democratic regimes lead to higher growth of GDP per capita. Nevertheless, the justification for the case of Indonesia is that the period after transition is not long enough yet, so the impact has yet to come.

In fact, this result seems to agree with a finding by Giavazzi and Tabellini (2004) that suggest a positive feedback between economic and political reform. They also give more weight to the sequence of reforms and conclude that countries which implement economic liberalization first and then democratize do much better in many dimensions than if countries follow the opposite route. As we know, in 1998 Indonesia experienced a drastic political reform marked by Soeharto's overthrown and then, later on, economic liberalization following.

5.2.1 Detecting the Impacts of Policy Reform in Indonesia

This subchapter is aimed to analyze and explain only about what happened in Indonesian economy within 1988-1997, even though during the roughly same period, other Asian countries were having their industries sectors developed. In other Asian countries, several policies were imposed to join highly competitive market at that time. A few misguided and wasteful policies took forms in direct credit and subsidies and tax privileges.

Let me now turn to the story of Indonesia. During the period of 1988-1997¹⁸, it was quite obvious that financial market and investment climate reforms during 1980s and 1990s contributed much to rise of economic activity in Indonesia after having negative shock from steep decline in world oil price. Now

¹⁸ I choose year 1988 as the starter because at that time there happened major deregulation in banking sector, which happened to be the most important policy reform during 1980s.

see table 5.2. This table also gives comparison feature with other countries. However, this sub chapter only focuses on Indonesian economy.

As can be easily seen from this table, the most influential variable to growth during the period is educational attainment which exhibits 0.750. The magnitude of this variable pretty much implies that industry at that time needed more additional middle skilled labor that are those with secondary level education and high skilled labor with higher education, as well. This is reasonable since in the 1980s and 1990s, Indonesian economy was dominated by manufacturing Industry which has characteristic that needs more low to middle-skilled labor to run machines and at the same time needs high skilled labor to innovate and expand.

What is surprising is the minor magnitude exhibited by institutions variable, 0.060 and -0.025 for regulations quality and legislation structure and security of property rights, respectively. In fact, this is not that shocking. During the New Order Era, Indonesian economy was heavily characterized by close political relationships between politicians and businesspersons and dysfunctional courts system. The former characterizes how small the magnitude of regulations quality is and the latter characterizes how weak our law enforcement was. Thus, small magnitude of influence of regulations quality on growth can be explained like this: no matter how high regulations quality is, as long as there is close forbidden relationships between economic agents and those who are in charge, efforts to improve it are just a waste of time.

Yusuf (2001) points out that because of the judiciary's connections between military and business elites, there was little request for better judiciary's system. He later pinpoints the inadequacy of our legislations structure by saying that most disputes were settled out of the court. The negative number this variable exhibits says that some improvement in judiciary's system and more protection on property rights would decrease growth. The argument is that since all economic agents, not only for those who have close relationships with the authorities can bribe the law enforcers to deal with lawsuits against them, improvement in legislations structure and protection of property rights would create some slow

down in the economic activity, given low amount of high-skilled labors. In fact, this fits hypothesis proposed by Dixit (2004) which suggests that informal, relation-based systems appear to be less successful in protecting property right than in enforcing contracts.

Now see the influence of financial aspect. Regression results below show that access to sound money exhibits negative yet small coefficient. Since higher index of this variable tells higher inflation, higher money growth, and more freedom to have foreign currency bank accounts, this relationship thus explainable. This negative association suggests that macroeconomic condition was not stable at that time which could lower economic growth.

This is very sensible if we trace back to the situation at that time. Detailed narrative explanation is in chapter 3. The gist of the story is that banking deregulation which commenced in 1988 caused intense competition among domestic and foreign banks. This intense competition gives an impulse response each other triggering them to raise deposit interest rates so as to attract depositors to deposit money in their banks. This, in return, did not get balanced by proportional raise of lending interest rate. Initially lending rate was sufficiently lower than deposit rates which later caused inflation rate to rise. As time went on, high demand in credit market raises this rate higher more than borrowers' expectation.

This high domestic lending interest rate factor led private companies to heavily borrow offshore with lower interest rates in 1994-1997. If we elaborate it further to economic crisis in 1997, there was a close relationship between heavy borrowing offshore and a sharp decline in growth (Matsumoto, 1997). This heavy offshore borrowing is also caused by weak supervision and regulation in private sector credit, as argued by Haggard (1995) which concludes that weak financial regulation and poor systems of corporate governance were the culprits of the crisis.

The other variables, on the other hand, that are government expenditure and democracy show the expected signs, 0.111 and 0.108 during the period. These

signs could be explained from rather authoritarian and centralized political and economic system during the New Order Era. The conclusion to be withdrawn from the period of 1988-1997, thus, can be easily foreseen. Descriptive analysis in chapter 3 shows that institutions quality was not troublesome for Indonesian economy. As it fits descriptive analysis, the regression results show that most binding constraint to the more expansive economic activity is educational attainment level. Its magnitude is the biggest among other variables. In addition, it is shown before that the total factor productivity in Indonesia is mainly caused by more inputs, both physical capital and labor, instead of from labor productivity. Its overall productivity is still outperformed by its competitors in Southeast Asia, both in the past decades or in recent years.

Parameter that is usually used to measure productivity is total factor productivity (TFP). Table 5.3 shows comparisons (TFP)¹⁹ among Southeast Asia and East Asia countries. This table shows that TFP in Indonesia is very low compared to other Asian countries. Indonesia's productivity is near the bottom, just slightly better than Philippines, but far outperformed by Malaysia, let alone by Korea and China. Simple calculations from this data, we can find that total output in Indonesia is mostly contributed from physical capital accounting for more than 50 %, whereas its TFP accounts just 14 %. Clearly, its productivity is far outperformed by China's which contributes 22.6 % to its total output, let alone if compared to its rival in Southeast Asia, Thailand which accounts for more than a quarter of its total output, 26 %.

¹⁹ TFP is derived from original Cobb-Douglas production function:

$$Y_t = A_t K_t^\alpha L_t^{1-\alpha} \quad (1)$$

The next step divides all the variables with population and derive it to get the dynamic behavior which can describe how output per person increases over time

$$\frac{\Delta y}{y} = \frac{\Delta A}{A} + \alpha \frac{\Delta k}{k} + (1-\alpha) \frac{\Delta l}{l} \quad (2)$$

, where the first element of equation (2), $\frac{\Delta A}{A}$, is the growth of total factor productivity. This element describes growth of technical progress in a country's production function.

Table 5.2 Regression Results for the Period of 1988-1997

Country	Edu. Attainment	Reg. Quality	Government Consumption	Access to Sound Money	Openness	Legislation & Property Rights	Dem.
Indonesia	0.728**	0.086**	0.161***	-0.008**	-	-0.034**	-
Malaysia	-	-	0.457**	0.016***	0.443** *	-	-
Philippines	-	-	-	-0.026**	-	0.001**	-
Korea	0.856*	-	-	-0.019**	0.223*	0.058**	-
Thailand	-	-	-	0.026***	0.453**	-	-
Singapore	0.585*	-	1.123***	-0.981***	0.366**	- 0.017***	-
Japan	2.464***	-	-0.596**	-0.005***	-	0.005**	-
China	-	-	1.055***	-0.072***	-	-0.124**	-

Source: Author's calculation from regression results. Notes: * denotes statistical significance at 10%, ** denotes statistical significance at 5%, and *** denotes statistical significance at 1%

5.2.2 Incorporating Asian Crisis

In analyzing Asian economies, we cannot disregard economic shocks that happened in 1997/98. Several Asian countries got somewhat identically severe hit from it, generating major economic downturns in several areas in the economies. This sub chapter shall only compare the impacts of the crises on Indonesia with Malaysia, Thailand, Philippines, and South Korea. The reason is based on definition Barro (2001) which suggests that countries that can be called “Asian-crisis countries” are those that experienced nominal currency depreciation for more than 50 % from July 1997 to early 1998. Those selected countries fit the criterion.

As can be seen from table 5.4, the most significant determinant for higher growth rates is still educational attainment level despite its decreasing importance, from 0.750 to 0.728. Another interesting part that needs some explanation is institutions variable. The regression results show that institution is not the main constraint to further growth of Indonesian economy. Its magnitude is just slightly

bigger than it is in New Order era, 0.052 up a little from 0.034. This result is actually quite surprising considering how institutions quality has been inflated as the most complained factor by businesspeople.

However, this result seems to be intellectually adjusted by Rodrik (2004) which argues that institutions will be working for mainly sustaining growth, and not for stimulating it. He further criticizes that survey-based assessment of institutional quality cannot be used as a valid rationalization since there are several problems which are associated with many other aspects of economic environments which may not be directly related to the real operation of institutional environment. The increase in magnitude of institution, though, indicates that institution is more troublesome in present than that in the past.

This result can be partially explained if we look at the factor of human capital, the more critical factor in economic development of a country. Conceivably, the real problem lies in the heart of abilities that Indonesian labors have. It does not really matter for growth if institutions quality sharply improves but the human capital sucks. This limits creativity and passion for investors to innovate and expand. Factories cannot render high level of production, both in terms of quality and quantity. Educational attainment level is highly substantial which invokes suspicion embedded in it.

After the 'big bang' reform in political and economic affairs, Indonesian economy has not been able to catch up the growth rate as in pre crisis. In the Reform Era, regulations in several areas that are believed to give big supports to economic activities have been implemented. But, apparently, those have not worked as expected. Foreign investors do not seem to have big appetites to invest their money in Indonesia, compared to its competitors which offer relatively more

Table 5.3 Sources of Growth in Selected East Asia Countries, 1960-1994 (% per year)

Period & Economy	Capital	Labor	Total Factor Productivity	Output
1960-1994				
China	3.1	2.7	1.7	7.5
Indonesia	2.9	1.9	0.8	5.6
Korea	4.3	2.5	1.5	8.3
Malaysia	3.4	2.5	0.9	6.8
Philippines	2.1	2.1	-0.4	3.8
Singapore	4.4	2.2	1.5	8.1
Thailand	3.7	2.0	1.8	7.5

Source: Crafts (1998)

competitive regulations and more productive labors. Nonetheless, in fact, other worrying troublemakers that impede further economic expansion are corruption and poor protection of property rights.

After Soeharto being overthrown in 1998, corruption epicenter has pretty much changed from centralistic to more dispersive. Shleifer and Vishny (1993) argue that the more scattered corruption is, the more dangerous it is for the economy because this means that more money to be paid to bureaucrats which creates disincentive to producers due to increase in production cost. In the case of Indonesian economy, it has been observed that this creates more uncertainty, aside from more expensive cost.

The regression result above suggests that if Indonesia wants to be more competitive than Korea, Malaysia, Philippines, or Thailand, it should put much heed on its institutions quality, in addition to human capital. There is an interesting point worth noting, degree of openness. As can be analyzed from table 5.4 below, openness in Indonesia is insignificant in explaining its growth rate because of its low human capital quality. Therefore, we cannot see spillover effects. In addition, macroeconomic stability should be paid more attention since it is estimated that there exists macroeconomic instability despite its relatively low impact compared to other countries. Last but not least, the government should not ignore its expenditure because the result indicates that much left to be explored in productive sectors. It has not aimed to most productive sectors yet. Its magnitude is still positive, 0.161.

Table 5.4 Regression results of selected Asian countries for period of 1998-2005

Country	Edu. Attainment	Reg. Quality	Government Consumption	Access to Sound Money	Openness	Legislation & Property Rights	Dem.
Indonesia	0.728**	0.086**	0.161***	-0.008**	-	-0.034**	-
Malaysia	-	-	0.457**	0.016***	0.443** *	-	-
Philippines	-	-	-	-0.026**	-	0.001**	-
Korea	0.856*	-	-	-0.019**	0.223*	0.058**	-
Thailand	-	-	-	0.026***	0.453**	-	-

Source: Author's calculation based on regressions results. Note: '-' denotes that the variable is insignificant, otherwise significant; * denotes statistical significance at 10%, ** denotes statistical significance at 5%, and *** denotes statistical significance at 1%

5.3 Policy Implications

After analyzing and withdrawing conclusions from above regression results, the next step to be taken is we need to proceed to analysis on policy implications. Table 5.5 shows regression results in the period of policy reform and the period after crisis and what have changed. As can be seen from table 5.5 and previous analysis, human capital's quality seems to have been gradually increasing for Indonesian economic growth. This variable remains the one that impedes higher growth. Common advice must tell us that the government should get rid of it as soon as possible, either by radical or piece meal reform.

However, increasing in education level alone is not working if the quality of institutions is inferior, and vice versa. Economic agents and investors seem to eschew Indonesia due to this factor, as has been shown by several studies explained in chapter 3. Thus, in order to be more competitive in this intense global competition, Indonesia needs to unduly heed concerns in regulations quality, especially regarding investment and labor regulations since more countries offer friendly regulations, aside from human capital improvement. In addition, the government must not ignore the present pervasive corruption problem. The

government seems to have been fully aware of the peril of this corruption thing that it announced the establishment of KPK in 2002.

There is one more variable that needs to be taken into account, government consumption. In fact, this variable is placed as the second most binding constraint of Indonesian economy. After crisis government consumption seems to be off the target which means does not increase productivity and distort activities of economic agents. The increase in the magnitude is quite substantial, 0.050.

Last but not least important variable that is worth to be considered is democracy. Democracy is unable to explain growth rates within short period, 1998-2005. This is interesting yet not shocking because after being ruled by an autocrat for more than 30 years, people must have profound and unexpected freedom after Soeharto's overthrow. Clearly, state of democracy remains highly unstable ever since.

Table 5.5 Comparisons of regression results of Indonesian economy between the periods of policy reform and after crisis

Variables	Policy Reform	After Crisis
Educational Attainment	0.750***	0.728**
Regulations Quality	0.060**	0.086**
Government Consumption	0.111*	0.161***
Access to Sound Money	-0.005***	-0.008**
Openness	0.154***	Insignificant
Legislation and Property Rights	-0.025*	-0.034**
Democracy	0.108*	Insignificant

Source: Author's calculation based on regressions results. Notes: * denotes statistical significance at 10%, ** denotes statistical significance at 5%, and *** denotes statistical significance at 1%

To sum up, there are several things required for the government to boost economic growth. The first and foremost for the government to do is to immediately and effectively improve system which gives motivation to higher level of education attainment, especially of higher education, and to ensure that the graduates possess high quality skill needed by industries.. This is very pivotal

and indispensable so as to induce more investment because high quality of human capital guarantees competitive products. The second most important thing to do is taking care of institutions uncertainty and wrecked quality. There would be nothing great to expect if the economy does not have certain and stable regulations and discipline and clean bureaucrats.

Government expenditure is the next variable to consider. The government has to allocate wise proportions to each sector so that its expenditure contributes to more productivity needed in the economy and not to distract economic agents'. For instance, the government needs to focus on infrastructure improvement and energy security for industry, like electricity. Last but not least, the government has to be decisive and strict, but not to suppress democratic essences because it seems that people have been fed up with any restrictions and limitations concerning their freedom in expressing their ideas. This to-do-list is needed to partly stabilize political and economic condition which is very essential for Indonesian economy to grow further in the future. This is partly because the analysis does not include the reform styles to be implemented, is it radical or gradual one. This analysis must take into account more political analysis which is beyond the scope of this thesis.