

# A Drastic Reduction of Fuel Subsidies Confuses Ends and Means

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*In order to reduce the mounting pressure on government budget due to rising expenditures related to all sorts of subsidies, including those for the banking sector and domestic fuel consumption, the Indonesian Government has opted to cut only the fuel subsidies. Following the surge of the world price of oil, the size of the cut was huge, causing the average domestic fuel prices to increase by more than 120 per cent. It is argued in this paper that such a policy is ill-advised. A partial reduction, not an enormous cut, would have been sufficient if it is complemented with a fractional cut of sovereign domestic debt payments. Based on a set of simulations on a financial general equilibrium model, it is shown that slicing subsidies for the banking sector, providing that the saved money are spent on agricultural-related infrastructures, could produce a favourable outcome in terms of income distribution and poverty conditions without deteriorating the macroeconomic stability or injuring investors' confidence. Compared with the fuel subsidies cut, the number of population affected by such a policy will also be much smaller. Thus, a drastic and massive reduction of fuel subsidies is unnecessary, especially considering the adverse socio-economic and political repercussions of it.*

## ⇒ Keywords:

### I. Introduction

Rising world oil prices have posed difficult policy choices for oil importers and exporters alike. With oil consumption continuing to surge and production stagnating, if not falling, Indonesia has recently become a net-oil importer, a trend that has been predicted by many analysts back in the 1990s. Traditionally, surging oil prices would have

caused import bills to rise (affecting the trade balance) and put a burden on government budget through rising subsidies (fiscal balance). For Indonesia, the latter is more critical. This is the main reason why within a period of less than a year, the government has decided to slash oil subsidies twice, once in March and another time in October 2005. The latter move was drastic,

constituting an enormous cut that led to a more than 120 per cent increase in the average fuel prices. This has caused widespread domestic protests and criticisms, deteriorating socio-economic conditions, and to some extent also political instability. On the other hand, some international organizations, the International Monetary Fund (IMF) in particular, praised the policy.

I argue in this paper that an alternative policy of cutting a fraction of the principal and interest payments on domestic debt or recap bonds (in essence, subsidies to the banking sector) could complement the cut on fuel subsidies in order to reduce the fiscal pressure. If the saved money were targeted towards agricultural-related infrastructures, the income distribution and poverty conditions would have also been favourable without deteriorating the macroeconomic stability or injuring investors' confidence. The important implication is that the policy of a drastic and massive cut on fuel subsidies is unnecessary. Reducing subsidies is inevitable to maintain the country's fiscal health, but if it is welfare-reducing and creates more hardships to most people, it confuses means and ends.

The much publicized compensating income policy, i.e., direct handing of cash to the poor households takes up only a small fraction of the saved money from subsidies cut. More seriously, by neglecting the general equilibrium impacts of the fuel price increase, the consequences of a massive subsidy cut are more dire than expected. The open unemployment rate has reached 10.84 per cent, and inflation has hit double-digits. These figures will likely worsen following the subsidies cut. By using a new measure of poverty based on fourteen criteria (not using calories intake/day), a recent survey conducted by the statistical office  
→ CBS reveals that the number of poor has reached a staggering 62 million, or around 15.5 million households, about twice the poverty headcount figure based on the National Survey (Susenas) data. The very concept of handing cash directly under the assumption that the administrative or institutional capacity is ready to deliver the programme has proven ill-advised. They also spoil

and damage social unity as revealed by a series of serious incidents that even involved the loss of some human lives.<sup>1</sup>

The organization of the paper is as follows. Section II presents the results of simulations showing the macroeconomic impacts and socio-economic consequences of a scenario in which the government cuts a fraction of the subsidies to the banking sector including the recap bonds. Results of another set of simulations capturing a scenario in which the saved money from the subsidies cut is spent on agricultural-related infrastructures are discussed in the subsequent section.

## II. Recap Bonds: A Misguided Policy

Among the early policies advocated by the IMF to the Indonesian Government during the Asian financial crisis was the decision to liquidate sixteen banks. With no deposit insurance system in place, such a policy caused widespread panic. Depositors shifted their assets to state and foreign banks. At the same time, fears over the fluctuating rupiah led to a sizeable amount of currency substitution. As a result, many domestic private banks suffered from a liquidity crunch, resulting in exorbitant inter-bank rates.

As a "lender of last resort", Bank Indonesia injected liquidity funds known as Bantuan Likuiditas Bank Indonesia (BLBI) to a number of private banks. By the end of 1997 the injected amount swelled to reach 7 per cent of GDP. This policy caused the currency value to weaken further. What made it worse was that most of the funds were not properly used by recipient banks; some were gambled away in the foreign exchange or securities markets, others were used to expand bank operations, staff, branches, and services. A considerable amount was also transferred to bank owners' accounts abroad or lent recklessly to businesses within the banks' own group (potentially non-performing).<sup>2</sup> While conceptually BLBI represents a standard liquidity support to illiquid but not insolvent banks, the actual implementation was seriously flawed. In some cases, the amount of central bank's extended credit even exceeded the recipient banks' total assets.

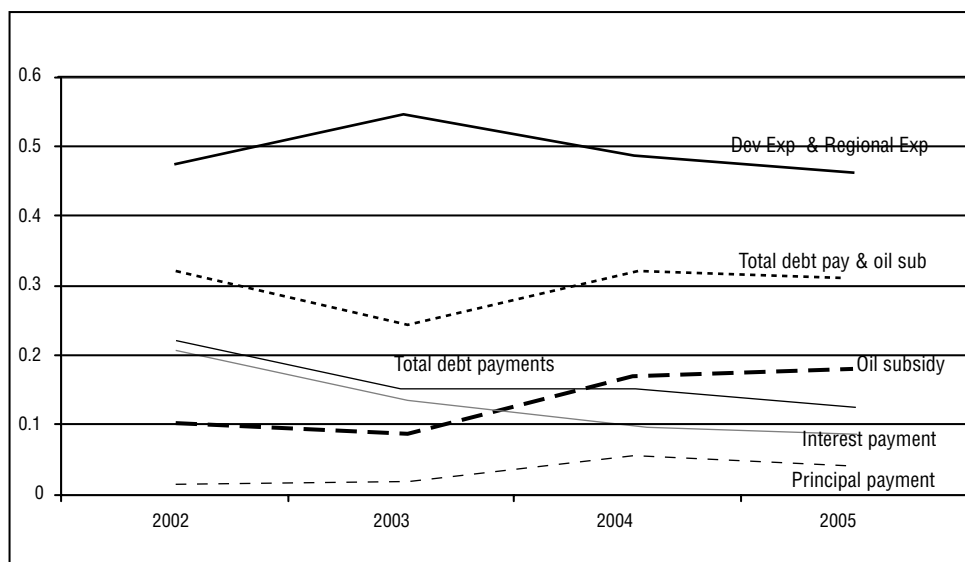
The IMF prescription to tighten the budget and raise the already high interest rates failed to restore market confidence. On the contrary, social uprising flared and the number of bankruptcy cases rose dramatically. Banks' balance sheets worsened, many suffered from a negative net worth. By March 1999, the capital equity of banking sector had reached minus Rp245 trillion.

Upon the recommendations of the World Bank and the IMF, the government implemented a blanket guarantee programme, in which BLBI was taken over by the government and new bonds were issued to the central bank (both amounted to Rp220 trillion).<sup>3</sup> In addition, the government issued a huge amount of recap bonds (estimated at Rp405 trillion) to the troubled banks by enforcing certain criteria including the initial level of bank's capital adequacy ratio (CAR).<sup>4</sup> The whole premise of the policy was that, as banks' balance sheets have improved, a large portion of bonds would be converted into credits so that the intermediation

function can be gradually resumed. In reality, this did not happen. Banks preferred holding non-risky government bonds to secure high CAR.

Thus, the intended outcome of the policy did not materialize, while the costs have been enormous. Eventually, this put a substantial pressure on government budget. Figure 1 shows the principal and interest payments on recap bonds measured as a percentage of total domestic revenues. In 2002, total debt payments took up more than one-fifth of domestic revenues. Compare this figure with the oil subsidy that was over 10 per cent. As the oil prices surged in 2004, however, the subsidy began to dominate but payments related to domestic debt remained high. In 2005, about a third of domestic revenues would have to be spent on these two items (after the cut of fuel subsidies). With rising routine expenditures and foreign debt payments, this leaves a limited room for other development expenditures. As depicted in Figure 1, the relative share of

FIGURE 1  
Fiscal Costs of Domestic Debt and Oil Subsidy  
(% of Total Domestic Revenues)



SOURCE: Processed from the data provided by the Office of the Coordinating Minister for the Economy, Jakarta.

development expenditures including those for regional governments has been declining. It constitutes less than half of domestic revenues since 2004.

Prior to the oil price increase, the government implemented the following strategies concerning the domestic debt (mostly recap bonds): (1) Buy-back programme, in which some of the non-matured bonds are repurchased (essentially an asset-bond swap);<sup>5</sup> (2) Reprofile debt to make it consistent with the development of the secondary market and government's capacity to create a surplus in the primary balance. Having determined bank's liquidity requirement, the government will exchange the bank's idle bond with new bond that has a longer maturity. But this scheme could be exercised in limited scope and applied to only banks that are still under government control (prior to divestment); (3) Debt-switching which is intended to lengthen the maturity profile of the debt (exchanging maturity and altering liquidity of the bonds). The main difference between this approach and the reprofiling scheme is that, the

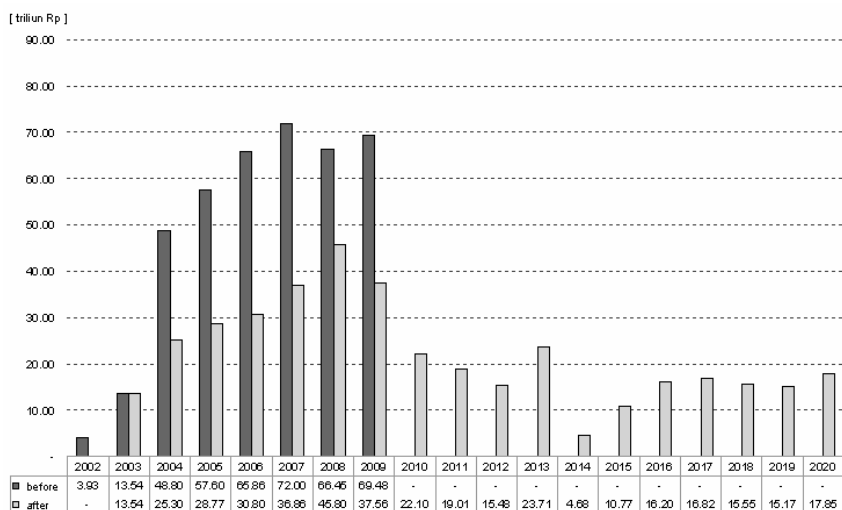
terms of bond exchanges are determined by the market, not set unilaterally by the government; (4) Refinancing matured bonds by issuing new bonds; and (5) Reducing government's contingent liabilities, among others by phasing out the notorious blanket guarantee programme. This could be done through the improvement of the banking sector and by strengthening macroeconomic stability so as to allow the interest rates to fall. Figure 2 shows the domestic debt repayment before and after the rescheduling.

These delayed payment policies, however, incur costs that could affect government fiscal sustainability. Not only would they prolong the period of repayment for both the interest and the principal, but they could also put an upward pressure on the interest rates. Since higher rates imply a greater debt burden, this could lead to a dangerous spiralling effect with deleterious consequences on the economy.

Meanwhile, the official foreign loans also increased since the 1997 crisis. They comprised of loans made through the CGI, from the IMF and



FIGURE 2  
Maturity Profile of Tradable Government Bonds  
Before and After Reprofileing



SOURCE: Processed from the data provided by the Ministry of Finance, Jakarta.

other international financial institutions, and loans made through bilateral arrangements. From 1998 to 2000, the total government debt, foreign and domestic, rose from 46 to 98 per cent of GDP (Figure 3). The total debt repayments, interest and principal, peaked at over 7.3 per cent of GDP in 2001. Over half of government total revenues had to be spent on debt repayments. To put it in perspective, while in 1997/98 the total debt repayments were still below the total amount of development expenditure, since 2000 the debt repayment has always been higher and the gap has persistently widened.<sup>6</sup> By 2004 the size of development expenditure was only half of the amount of debt repayments.

### III. Fiscal Burden and Sustainability

Even after the reprofiling of domestic debt, it is clear that the pressure on the fiscal balance, as a result of the misguided policy of blanket guarantee, remains huge. The recent increase in oil prices presents a further strain on the budget. Efforts are therefore needed to mitigate the pressure. Given the deteriorating socio-economic

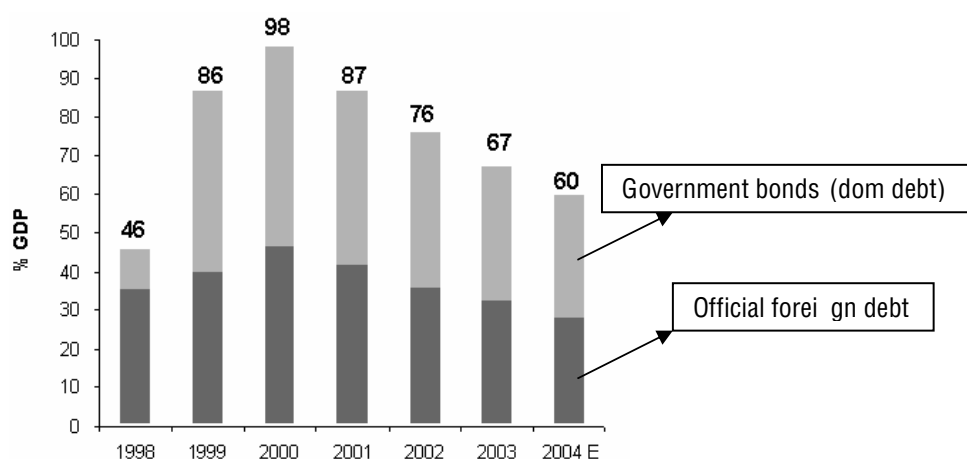
conditions (rising unemployment rate and poverty), any efforts to reduce the fiscal burden must be put in context as to how to maintain a sufficient amount of expenditures for social overhead capital without jeopardizing macro-economic stability and fiscal sustainability.

Up to this point, the Indonesian Government has managed to secure fiscal sustainability only in a narrow sense by maintaining the primary balance around 2–4 per cent (see Figure 4). This has been achieved by lowering the budget deficit at the costs of deteriorating socio-economic conditions.

In principle, fiscal sustainability can be achieved if the government debt/GDP ratio can be made stable without changing the current policy stand (Blanchard 1990).<sup>7</sup> Alternatively, one can focus on a derived sustainable tax rate, based upon which sustainability is achieved when future generations do not need to pay higher tax rates than current generations (Auerbach and Kotlikoff 1995).

In a standard formulation, three components determine the debt/GDP ratio  $d_t$ : (1) The size of primary balance, expressed as  $g_t - t_t$  in the

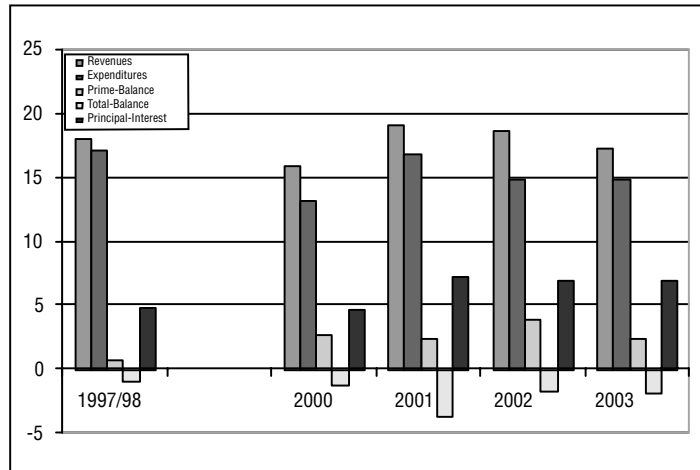
FIGURE 3  
Sovereign Debt to GDP Ratio



SOURCE: Processed from the data provided by the Ministry of Finance, Jakarta.



FIGURE 4  
Primary and Total Balance, and Debt Repayments  
(% GDP)



SOURCE: Processed from the government budgets (various years).

equation below; (2) The burden of past debt, expressed as  $\left(\frac{1+i_t}{1+\gamma_t}\right) d_{t-1}$ ; and (3) The growth of money supply  $\mu_t m_t$ :

$$d_t = (g_t - t_t) + \left(\frac{1+i_t}{1+\gamma_t}\right) d_{t-1} - (\mu_t m_t)$$

where  $g_t$  is government expenditure outside interest and principal debt payment,  $t_t$  is government revenue, both expressed as a ratio to GDP,  $i_t$  and  $\gamma_t$  are interest rates and the nominal GDP growth rate, respectively, and  $\mu_t$  is the growth rate of money supply. Under the condition  $i_t > \gamma_t$ , higher primary deficit and greater burden of past debt mean that the economy will produce a larger debt/GDP ratio. When the growth of money supply is positive,  $\mu_t > 0$ , the debt accumulation is smaller, or, the real value of debt is lower (Broda and Weinstein 2004).

To make it operational, and to calculate the measure of sustainability within a finite future

time  $n$ , the following condition must be met to assure that  $d_t$  at future time will converge back to its initial level  $d_0$ :

$$\sum_{t=1}^n \left(\frac{1+\gamma}{1+i}\right)^t (t_t - g_t + \mu_t m_t) \geq d_0 - d_n \left(\frac{1+\gamma}{1+i}\right)^t$$

where  $i$  and  $\gamma$  are now assumed constant. What this condition suggests is that, a long-run sustainability can be secured if the present discount value of the primary surplus to GDP ratio plus the monetary financing is greater than or equal to the gap between the current level of debt to GDP ratio  $d_0$  and the targeted discounted debt to GDP ratio  $d_n$  in period  $n$ . This means given the discount rate, the government must run a primary surplus or increase the base money to achieve fiscal sustainability. Given the path of fiscal and monetary policy, one can derive the sustainable level of initial debt  $d_0^*$  or the sustainable tax ratio  $t^*$  that satisfies the above equation. These levels are then to be compared with the actual  $d$  or  $t$ .





The fact that in the last few years the Indonesian Government managed to maintain a primary surplus and  $i_t < \gamma_t$  and  $\mu_t > 0$  seems to suggest that securing fiscal sustainability is not a real problem. However, the sustainability solution derived from the above model relies on several exogenous factors, i.e., the assumed trends of economic growth and government expenditure, the likely monetary policy, the current level of debt, and government's ability to tax. Yet, these factors may interact with many other components and variables in the system. These interactions are too important to ignore.

Alternatively, it might be more appropriate to use a more comprehensive general equilibrium model. In this study, I use a financial general equilibrium (FCGE) model with a poverty module to analyse alternative policy scenarios. A brief discussion on the specifications of the model is given in the Appendix.<sup>8</sup> As discussed earlier, the conventional policy taken by the government so far consists of buy-back, reprofiling, debt-switching, and refinancing. In this study, results of the baseline are derived based on these existing conventional policies by simulating the model throughout 2020. They are to be compared with the results from the non-conventional policy scenarios, i.e., writing off half of the debt principal, and cutting off half of the interest payments (without altering the size and the schedule of debt principal payments).<sup>9</sup> Each of these two alternative policies is imposed in 2010, and the government expenditure is assumed to increase essentially by an equivalent amount of the saved money.<sup>10</sup> To the extent that some of the recap bonds have already been traded and held by the private sector (at the time of the writing more than half of the bonds are still in the recipient banks), only a partial write-off is feasible.

While intuitively such a policy alternative will reduce government's fiscal burden, there is obviously a question pertaining to the risk of injuring investors' confidence and the repercussions on macroeconomic stability (for example, exchange rate manipulation or unexpected rise in inflation).<sup>11</sup> Indeed, there is no substitute to a prudent macroeconomic policy. The

credibility of fiscal and monetary policies, which depends on the quality of institutions and reputation for sound policy making, is a central prerequisite to prop up investors' willingness to hold the country's long-term bonds.

As specified in the model, writing off recap bond will influence government saving by lowering the payments on the interest and principal. However, depending on the government policy on debt financing, it could also increase the amount of new (non-recap) bonds used as a substitute to finance the budget, should government fail to raise external loans that have much softer conditions. Hence, given government revenues and other expenditures, both of which are endogenously determined by policies and economic fluctuations, the net effect on government saving will depend on the magnitudes of the write-off and the size of the newly issued bond (see Figure 5).

Results of the simulation reveal that, in general, writing off the domestic debt partially will have only minor impacts on the macro indicators. Under the scenario of writing off solely the debt principal by half in 2010, the result will only be a rise in the general price level to 0.1 to 0.5 per cent higher than in the baseline. In the case of a partial write-off on interest payment, the price pressure is slightly larger but only in the short-run, as the pressure tends to decline in the longer-run (Figure 6). The resulting exchange rate follows a similar pattern, i.e., it depreciates by 0.25 per cent in 2010, before it gradually appreciates. It will depreciate persistently in the case when the debt principal is written off by half, but even here the rate of depreciation is very small (Figure 7).

Given the continued large dependence of the economy on imported intermediate and capital goods, a weaker exchange rate will have detrimental effects on production, although some export sectors may gain. More importantly, the rising domestic price pulls the real consumption down. The simulation indicates that these two forces drag the real GDP lower than in the baseline (Figures 8 and 9). But again, looking at the magnitudes of the change (see the scales in the y-axis), all these effects are minor, i.e., between



FIGURE 5  
The Fiscal Effects of a Partial Write-off on Recap Bonds

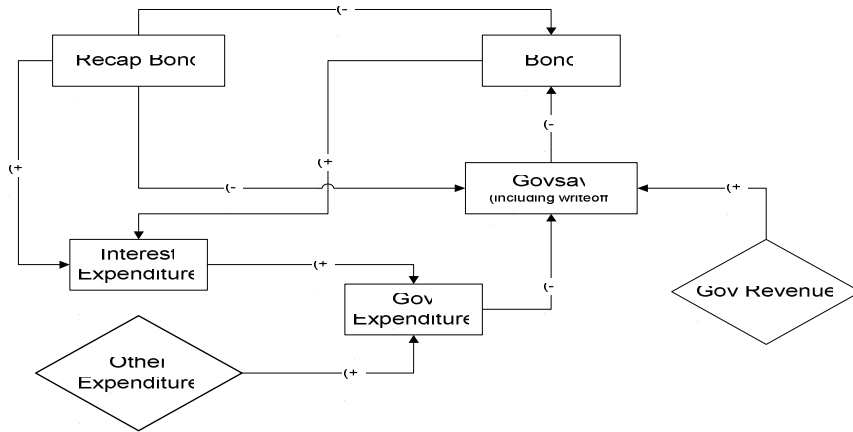
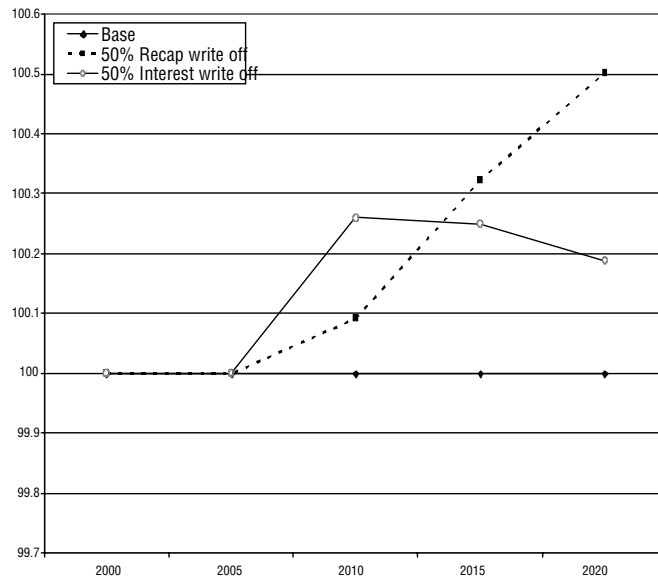


FIGURE 6  
Price Index Under Partial Write-off

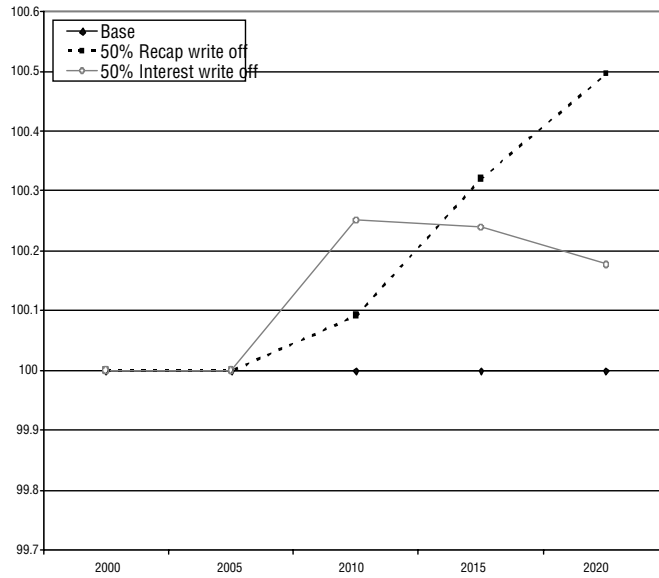


SOURCE: Results of model simulation.



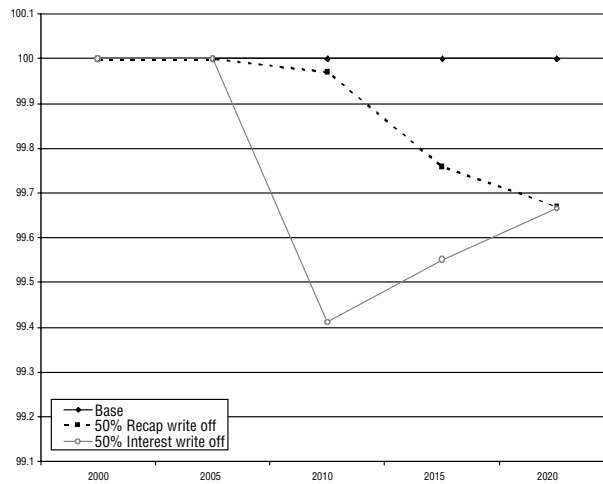


FIGURE 7  
Exchange Rate Under Partial Write-off



SOURCE: Results of model simulation.

FIGURE 8  
Real Consumption Under Partial Write-off

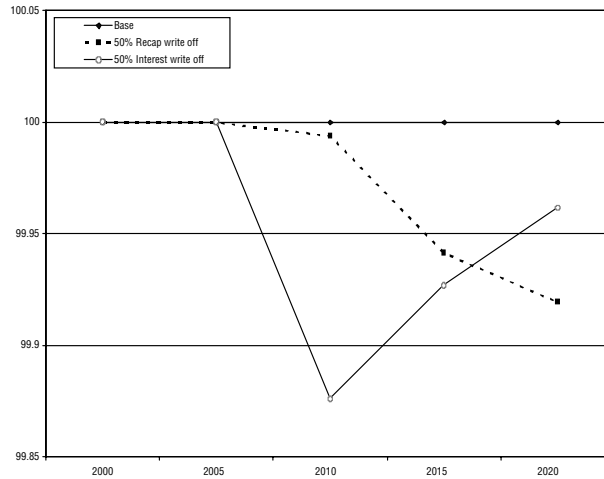


SOURCE: Results of model simulation.





FIGURE 9  
Real GDP Under Partial Write-off



SOURCE: Results of model simulation.

0.3 and 0.6 per cent for consumption, and a mere 0.1 per cent for GDP.

On the other hand, the level of real investment is clearly higher compared to the baseline. When the partial write-off is applied to the principal payment, higher investment results largely due to a larger amount of credits (both for consumption and investment) extended by banks. In the case of a partial write-off on interest payment, only credits for investment will be higher; the decline in consumption (Figure 8) tends to drag down credits for consumption such that the total credits under this scenario will be lower than in the baseline (Figure 10). However, rising credits for investment boost the total investment, regardless whether the write-off is applied to the interest or the principal (Figure 11). A significant reason for the increase in credits is the changing incentive system faced by banks that hold a large amount of recap bonds. A reduction in one type of asset (bond) motivates these banks to raise another form of asset (credit). Thus, the partial write-off policy will effectively alter banks' behaviour towards more credit-

enhancing measures, and this could mitigate the effect of a possible decline in consumption such that the overall impact on GDP growth is muted.

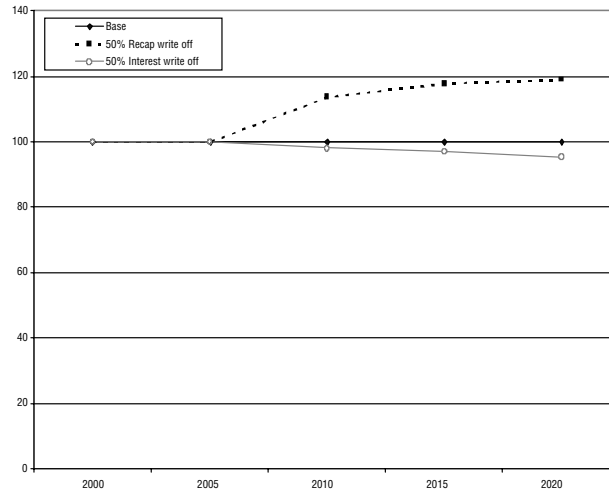
While the macroeconomic effects are minimal, the upshot on the government's fiscal position is fairly significant. Cutting the debt principal by half will turn the budget into surplus (it is assumed balanced all the way under the baseline). As the GDP continues to grow, however, the fiscal surplus/GDP tends to decline, i.e., from 2.5 per cent in 2010 to 0.6 per cent in 2020. Writing off the interest rates will produce smaller surpluses (Figure 12). The debt/GDP ratio is estimated to follow a similar pattern (Figure 13).<sup>12</sup>

It is therefore clear that an alternative policy of writing off partially the domestic debt (recap bonds) will help to reduce the government's fiscal burden and improve fiscal sustainability, while it is also favourable in terms of stimulating credits and investment. The practicality of such a policy should not be a problem since more than 70 per cent of the recap bonds are held by a small number of banks partially owned by the government. The



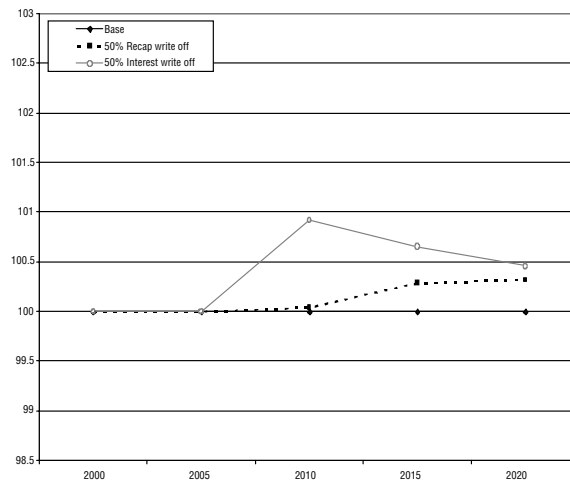


FIGURE 10  
Total Credit Under Partial Write-off



SOURCE: Results of model simulation.

FIGURE 11  
Real Investment Under Partial Write-off

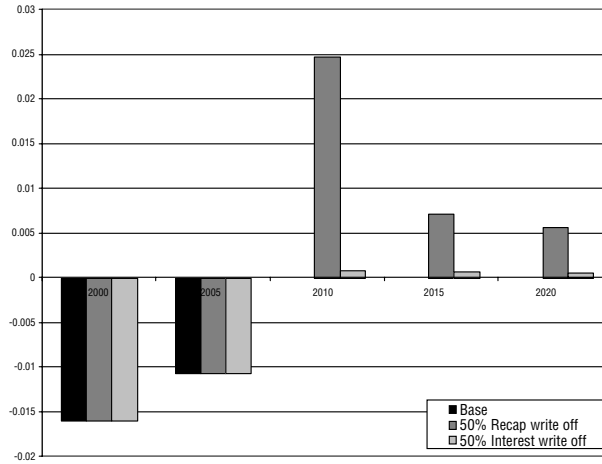


SOURCE: Results of model simulation.



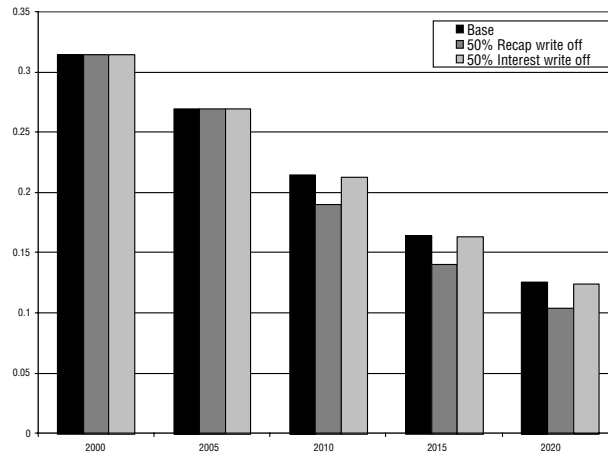


FIGURE 12  
Overall Fiscal Balance Under Partial Write-off



SOURCE: Results of model simulation.

FIGURE 13  
Government Debt to GDP Ratio Under Partial Write-off



SOURCE: Results of model simulation.





risk of destabilizing the entire banking system is thus negligible. If anything, a reduction in government's equity participation that may accompany the policy is consistent with the efforts to privatize these banks. Even if no change in the equity participation is made, the effect on their net worth is not significant, especially considering the economy-wide benefits of the policy. It is also important to emphasize that the CAR of these banks is unnecessarily high, much higher than the BIS standard.<sup>13</sup>

The next important policy question is, what should the saved money be used for?

#### **IV. Pro-poor and Pro-growth Budget Expenditures**

Following the massive cut in oil subsidies in March and October 2005, the Indonesian Government attempted to mitigate the adverse impact by using part of the saved money (a very small part) to compensate the poor households by implementing three programmes: direct cash allocation, school funds, and cash for work. By far the most controversial one is the direct cash transfer to the poor. A set of questions arises: why use a direct transfer? Such a system is likely to be unproductive and ineffective given the weaknesses in the government's institutional and administrative capacity. It also has a negative long-term effect on the poor. If the intention is to help the poor and reduce the poverty rate (that has surged significantly) why is it that only a tiny part of the saved money was spent on the compensation scheme? If the primary goal is to reduce the fiscal pressure, why put millions of people in a more vulnerable situation by cutting the fuel subsidies drastically without even considering a reduction in other subsidies such as the one for the banking sector?

The argument of cutting oil subsidies to reduce the fiscal burden must always be put in a context of a country's development goals. It should not be for the sake of reducing fiscal deficit per se, especially since the estimated deficit would have reached a mere 1.7 per cent of GDP had

the subsidies not been slashed. Conventional macroeconomics tends to relate fiscal deficits with the question of how such deficits are financed. Development economics, on the other hand, is also concerned with how the deficits are used, and how the extra expenditures are tied to a pro-poor growth policy.

In this section, I explore the consequences of a pro-growth and pro-poor fiscal policy through government expenditures in agricultural-related infrastructure, using the saved money from cutting the subsidies given to the banking sector (BLBI and recap bonds).<sup>14</sup> In particular, I analyse the perceived trade-offs between growth, income distribution, poverty and macroeconomic stability under such a policy by simulating the financial general equilibrium model. The results are to be compared with those under the baseline (the scenario of maintaining the subsidies, as actually taken place).

Since BLBI and recap bonds subsidies were issued at the early stage of the crisis, the starting year of the simulations is 1998. Unlike in the earlier section, however, my main intention here is simply to emphasize the importance of directing the saved money (gained from slashing the domestic debt payments) to agricultural-related infrastructure so as to ensure that the policy would also improve the employment, poverty, and income distribution. For this purpose, it is sufficient to show the impact within three or four years of such a policy. Thus, the simulation period used in this exercise is 1998–2002. While the effect of the recent fuel subsidies cut is not incorporated, the general argument remains that directing any saved money towards agricultural sector-related infrastructures would have been preferable.

The transmission mechanisms of targeting expenditures to certain sectors are traceable since the model is capable of capturing the inter-linkages between real sector, monetary, trade, financial sector and household incomes, with all prices being endogenous. The agricultural activities will be affected directly through investment in infrastructure and indirectly through



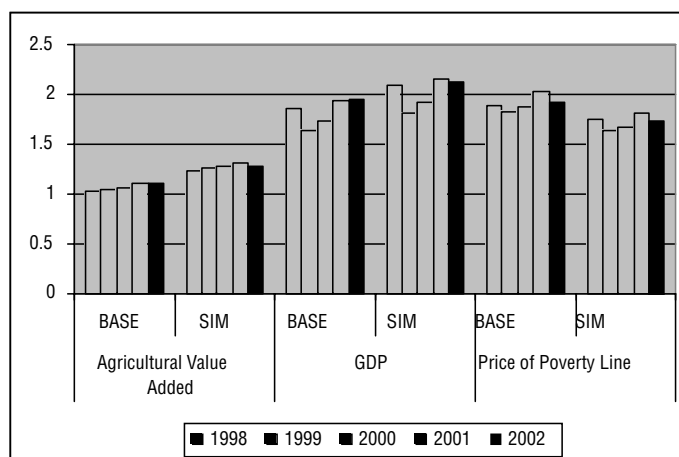
improvements in the sector's productivity. Such public investment would attract (crowd-in) private investment, causing an increase in the demand for bank loans. Since the extra money is taken from some of the BLBI, the commercial bank's liability is subtracted by exactly the same magnitude as that reduction.

As predicted, the simulations show that this leads to an increase in bank loans and thus total credit. Assuming that the ratio of non-performing loans (NPLs) to total credit is fixed, this implies that NPLs increase.<sup>15</sup> The increased lending reduces SBI holding. As a result, the ratio of credit to SBI increases, higher than compared to the baseline, all the way up to 2002. The GDP and investment would also be higher than in the baseline, and so would the value added of the agricultural sector compared to the baseline (Figure 14). This is particularly important since the policy shock occurred only in 1998 (a one-time shock) and yet the favourable impact seems to last for several years. The resulting agricultural/

GDP ratio is generally higher throughout the simulation period. Most importantly, the unemployment rate would have been lower than in the baseline.<sup>16</sup> Employment creation occurs not only in agricultural activities but also in the off-farm sector.

The deteriorating bank wealth raises the risk premium on interest rates. But lower-than-benchmark wealth occurs only in the shock year (1998), and the risk premium is higher only in the short run. Yet, the loan rate is higher all the way until 2002, implying that factors other than risk tend to influence the rate as well. A higher loan rate should have reduced investment. But since private investment is specified as determined by not only the loan rate but also the level of economic activity (higher GDP), the resulting total private investment remains higher than in the baseline. In general, therefore, there is a crowding-in process. After 1998, higher bank wealth puts banks in a better position to extend credit. This is the reason why despite the decrease in the liability

FIGURE 14  
Agricultural VA, GDP, and Price of Poverty Line: Budget Stimulus with Less BLBI



NOTES: "agHH" and "allHH" refer to incomes of agricultural and total households; AGVA is the agricultural sector value added; SIM and BASE denote the simulation and benchmark, respectively

SOURCE: Results of model simulation.

associated with the BLBI, bank credit tends to rise, lowering the SBI/credit ratio. Meanwhile, the reserve money will surge.

What is the cost of this counterfactual policy? Theoretically, government deficits would rise. The simulation results indicate that the size of the deficit fluctuates. As a share of GDP, the deficit reaches 2.5 per cent, which is slightly lower than in the baseline (2.6 per cent). Hence, it is noteworthy that the expansionary budget would have raised the deficit/GDP ratio only in the initial year. The incremental deficit would mostly be financed by foreign borrowing. Since the risk premium is assumed to depend on foreign borrowing, it is higher than in the baseline in 1998 but lower for the rest of the simulation period.

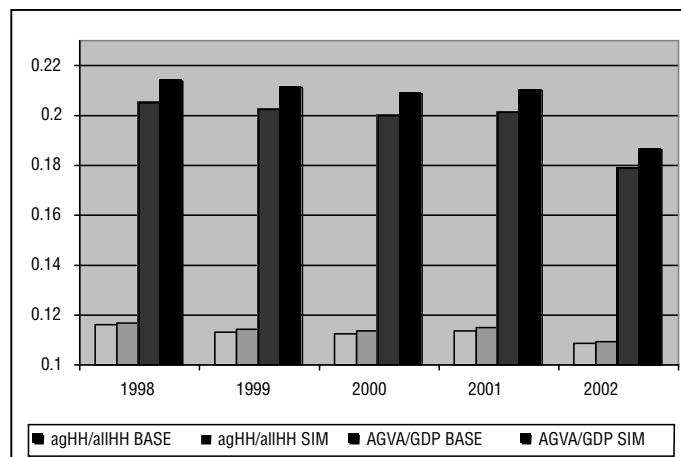
In the shock year, prices tend to be higher compared to the baseline and lower thereafter. Increased demand for intermediate inputs due to increased public investment leads to higher prices of intermediate inputs in almost all sectors compared to the benchmark. The only exception is prices in the non-food sector. These higher prices

prompt higher output prices (PQ) in most sectors except in the agricultural-related activities, i.e., food, non-food and the food processing industries. The average price level measured by the weighted price of output and the consumer price index or GDP deflator is higher only in 1998. This is consistent with the trend of the base money. However, since the share of food and non-food in the price of poverty line is relatively large, the declining price of output in these sectors contributes to a lower-than-baseline poverty line price (Figure 15).

Incomes of all poor households decline in 1999 then increase towards 2002. The poverty line price fluctuates in a similar manner. However, comparing the numbers in 1998 and 2002, the incomes of the poorest four socioeconomic groups decrease by 1.6 per cent while the poverty line price decreases by 1.1 per cent.<sup>17</sup> The income disparity is in general more favourable than in the benchmark.<sup>18</sup>

What if the source of financing comes from not issuing the recap bonds as much as had been

FIGURE 15  
Relative Income Position of Poor Agricultural Household and Agricultural VA/GDP:  
Budget Stimulus with Less BLBI



SOURCE: Results of model simulation.

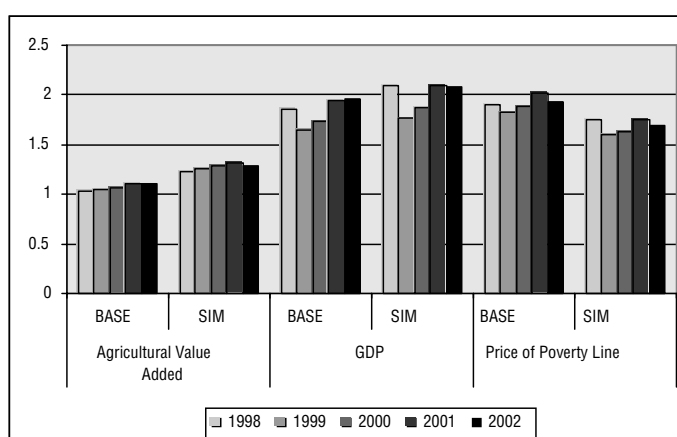
issued in 1998? Assuming the extra spending is allocated to the same five sectors,<sup>19</sup> the policy simulation shows mixed effects on the risk premia. The reduction in bank wealth due to the fall in recap bonds increases risk and loan rates in the subsequent year. On the other hand, since risk is also affected by public and private borrowing from abroad, the decline of the latter tends to reduce risk. On balance, except in 1998, the risk premium is always lower than in the baseline.

The composition of banks' balance sheet also changes. On the asset side, less SBI and recap bonds are held and more loans issued. On the liability side, the banks have less capital and less foreign borrowing. The deviations of the loan/SBI ratio from the baseline are smaller — hence the growth of lending would not have been as high — compared to the preceding scenario. Indeed, the direct effect on bank balance sheets of reducing recap bonds is more severe than in the case of cutting the BLBI. In contrast to the latter, writing off recap bonds causes bank wealth to be persistently lower than in the baseline, affecting bank's capacity to lend. Hence, although lending increases and SBI holdings decline, the lending/

SBI ratio would not have been higher than in the preceding scenario. This also explains why the resulting reserve money and price level are not as high.

GDP, investment, and agricultural value added are all higher than in the baseline. The unemployment rate is lower, and the share of agricultural value added in total GDP is higher. The price level is higher in the shock year, lower thereafter. The price of poverty line (PQPL) is lower throughout the period for much the same reason discussed earlier (Figure 16). The percentage decrease of total incomes of the four poorest socio-economic groups between 1998 and 2002 is 4.1 per cent, while the percentage decline of PQPL is 3.6 per cent. The poverty incidence thus cannot be conclusively determined. The income distribution improves compared with the benchmark. As in the preceding scenario, poor agricultural households seem to benefit relatively more than non-agricultural households. This is seen by the higher-than-baseline ratio of incomes of the two poorest groups over incomes of all households (Figure 17).

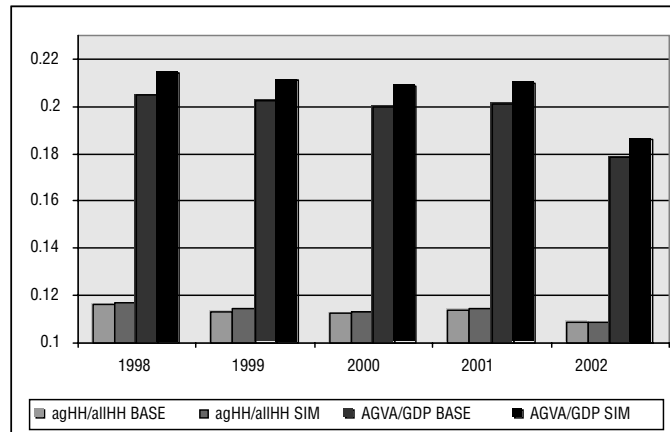
FIGURE 16  
Agricultural VA, GDP and Price of Poverty Line:  
Budget Stimulus and Smaller Recap Bonds



SOURCE: Results of model simulation.



FIGURE 17  
Relative Position of Poor AgHH and Agricultural VA/GDP:  
Budget Stimulus and Smaller Recap Bonds



SOURCE: Results of model simulation.

The fluctuations in the government deficit are similar to those in the preceding scenario. Again, much of the increase is financed by government borrowing from abroad. The deficit/GDP ratio increases from less than 1 per cent in 1997 to 4.8 per cent in 1998, then decreases to 2.7 per cent and 1.6 per cent in 1999 and 2000, and increases again to 2.6 per cent in 2001 and 2002. This suggests that expanding budget, providing that it is targeted to the right sectors, combined with reducing the amount of recap bonds would be effective in stimulating the economy without causing a large budget deficit.

A rising government borrowing from abroad could raise the risk premium, causing private capital inflows to decline and the expected exchange rate (EXPEXR) to increase, both of which would depreciate the currency. But as discussed earlier, banks end up borrowing less from abroad, more than offsetting the effect of government borrowing on risk. Consequently, the exchange rate tends to appreciate.

In sum, the counterfactual policy simulations reveal that compared with the scenario of maintaining the subsidies to the banking sector, cutting them off partially would have resulted in a

more favourable socio-economic outcome as long as the saved money is spent on agricultural-related infrastructures.

## V. Conclusions

The misguided policy of maintaining subsidies for banks through recap bonds, and the sharp increase of fuel subsidies following the recent surge of world oil prices have put a heavy strain on the government budget. Cutting subsidies is inevitable, but the question is which subsidies to cut, by how much, and, more importantly, how the saved money is going to be spent?

The Indonesian Government has opted to slash drastically the subsidies for fuel, leaving those for the banking sector intact. Yet, the latter has not only put pressures on the fiscal burden but has also caused a serious disintermediation with its repercussions on slow economic recovery, surging unemployment, and rising poverty. While the costs of subsidizing banks through recap bonds are enormous, the intended benefits are hardly met.

I argue in this paper that in order to reduce the mounting pressure on government budget, a partial cut, not a huge cut, of fuel subsidies should



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have been complemented with a fractional cut of subsidies for the banking sector. By running a set of counterfactual simulations on a general equilibrium model, it is shown that slicing subsidies for banks, providing that the saved money are spent on agricultural-related infrastructure, could produce a favourable outcome in terms of income distribution and poverty conditions, without jeopardizing growth and macroeconomic stability. Compared with the effect of cutting fuel subsidies, the number of population affected by such a policy will also be much smaller. Ignoring this policy option, and concentrating instead on the removal of fuel subsidies that has been proven to cause a lot of hardships to most people just for the sake of maintaining the country's fiscal health, i.e., to reduce budget deficits, is ill-advised; it palpably confuses means and ends.

Is the alternative policy viable? Given the original *raison d'être* of the recap bonds, the risk of disintermediation, and the fact that the bonds provided wrong incentives that led to a higher-than necessary CAR, the answer is an affirmative yes.

Ex-post, what would be the correction to the ill-advised policy? While the damage has been done, two immediate steps are worth considering: cut the subsidies for the banking sector and allocate a much larger portion (not just a small portion) of the already saved money from the drastic cut of fuel subsidy for a more aggressive and expansionary fiscal policy targeted towards agricultural-related infrastructure. This also implies a policy shift from direct cash payments to a system that would ensure more productive and sustainable activities for the low-income households.





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## APPENDIX

In the FCGE model, the level of economic activity, interest rates, returns on different assets, and agents' behaviour in allocating wealth, all determine the allocation of incomes (earnings) and the money demand of households and other institutions, as well as prices. The household portfolio allocation is specified under the assumption of no perfect substitutability. Households' wealth is allocated between liquid and less liquid assets. The latter is further allocated between time deposit and other assets, the specific allocation of which is determined by household's preferences/tastes, i.e., influenced by the expected returns on those assets; see Tobin (1970), Brunner and Meltzer (1972), Bouguignon, Branson and de Melo (1989), Thorbecke et al. (1992), and Azis (2005). The production sectors' demand deposit is specified as a function of total output.

In the model simulations, some of the parameters and coefficients are calibrated, others are estimated econometrically. In the sequential projection, some of the coefficients are fixed, while others are adjusted according to the actual trend.

### *Financial Block*

The money supply is modelled through money multiplier and high powered money (reserve money), the size of which is determined by the difference between the central bank's loan plus reserves (NDA plus NFA), wealth plus non-interest bearing government deposits, and the central bank's certificate (SBI). The money multiplier is influenced among others by government's policy, for example, reserve requirement (see Harberger 2000). Given the total liabilities, including foreign debt, bank's assets other than credit are determined endogenously.

Public investment when raised and directed specifically to a particular sector (for example, agricultural-related infrastructure) will attract (crowd-in) private investment. This causes an increase in the demand for bank loans. If the increase of public spending is funded partly by the unspent liquidity support (BLBI), bank loans and thus total credit increases on the asset side. Given the ratio of NPLs to total credit, however, this may imply that the size of NPL increases. It is possible, however, that the ratio of non-performing loans to total credit would fall when the BLBI is reduced, since most of the BLBI ended up as NPLs. A credit expansion leads to an increase in money supply, causing the general price to increase. Since credit on the asset side increases while the liability side shrinks, another component on the asset side, i.e., the holding of the SBI, will decline.

Under the scenario of reducing the amount of recap bonds, the bank wealth declines and this will increase the risk factor and raise the loan interest rates. However, the risk factor is assumed to be affected, not only by bank wealth but also by public and private borrowing from abroad. Thus, the decrease in recap bonds that will reduce foreign borrowing will put a downward pressure on the risk factor. While the net effects depend on the empirical evidence, what is obvious is that the composition of bank balance sheets changes. On the asset side banks hold less SBI and recap bonds and issue more loans, on the liability side they have less capital and a smaller amount of foreign borrowing.

When the government borrows more from abroad, this will augment the risk premium. In turn, this can cause private capital inflows to decline and the expected exchange rate to increase, both of which will depreciate the currency. But as discussed earlier, banks may end up borrowing less from abroad, and this can offset the effect of government borrowing on risk, preventing the exchange rate from depreciating.

The benefits of conducting the alternative policies are largely in the form of stimulating the economy and providing more jobs along with improving income distribution. The drawback occurs in the form of raising government deficits, but it turns out that this occurs only in the short run.

### *Production, Prices, and Incomes*

The production structure is modelled as a set of nested CES function. In the first stage, the production function (expressed as the value-added) is determined, with primary inputs being the right-hand-side variables in the equation. Like many other East Asian economies, Indonesia's structure of production and trade is such that a considerable proportion of intermediate inputs continue to be imported. Therefore, the composite intermediate inputs are of necessity modelled as a CES function of domestic and imported inputs. In the second stage, domestic output is specified as a CES function of value-added and composite intermediate inputs.

On the supply side, exports are assumed to be differentiated from domestically sold products in each sector. Domestic output is allocated between exports and domestic sales using a constant elasticity of transformation (CET). This suggests that substituting exports with domestic goods is not costless; a lower elasticity implies greater cost (more obstacles). Furthermore, the domestic market price is different from the export price (determined by the world price and the exchange rate). Thus, in an optimal condition the producers' behaviour is captured through equations that express the ratio of exports to domestic sales as a function of relative prices.



Following Armington (1969), aggregate demand is specified as a CES composite of imports and domestically produced products. Minimizing the cost of acquiring composite goods gives the first-order condition where the ratio of imports to domestic sales is determined by their price ratio. The demand for imports is assumed to be infinitely elastic with fixed world prices (the small country assumption). Along with the exchange rate, import taxes and trade and transport margins, along with the world price, are assumed to determine the domestic price of imports.

Some industrial sectors display at least one of the following characteristics: product differentiation, strategic behaviour, and economies of scale or increasing returns, be it internal (cost per unit depend on the size of the individual firm but not necessarily on the industry) or external (cost per unit depend on the size of the industry but not on the size of any one firm). The product markets of these sectors are therefore featured by monopolistic competition, where the average cost depends on the size of the market and the number of firm in the industry, based upon which the following holds:

$$\left(\frac{1}{N}\right) + c + P_\theta = 2P_i$$

where  $N$  is the number of firms in the industry,  $c$  is the firm's marginal cost,  $P_i$  is the price charged by the firm, and  $P_\theta$  is the average price charged by the firm's competitors. Under symmetry assumption, where  $P_i = P_\theta$  (all firms in the industry are assumed symmetric, i.e. the demand function and cost function are identical for all firms):

$$P_i = c + \left(\frac{1}{N}\right)$$

that is, the mark-up over marginal cost decreases as  $N$  increases. The larger the number of firms, the lower is the price. It is specified in the model that the mark up component is set exogenously, treated like an additional tax, leaving the output price  $PX$  net of taxes unchanged but the domestic price  $PD$  higher:

$$PD_i = \frac{(PX_i X_i - PE_i E_i)}{(1 - id_i - ttd_i - \sigma_i) D_i}$$

where  $id$  is the indirect domestic tax,  $ttd$  is the trade and transport margin rates.  $X$ ,  $D$ , and  $E$  are total supply, domestic output, and exports, respectively, and  $PX$ ,  $PD$ , and  $PE$  are the corresponding prices. Although parameter  $\sigma_i$  denotes the degree of market imperfection in sector  $i$ , not exactly the measure of mark up, it has the same role as the mark up. From this, the domestic output is derived:

$$D_i = \frac{E_i}{\left\{ \left[ \frac{PE_i}{(1 - id_i - ttd_i - \sigma_i) PD_i} \right] \frac{\beta_i}{(1 - \beta_i)} \right\}^{\frac{1}{(\rho_i - 1)}}$$

where  $0 < \beta_s < 1$  and  $\rho_s > 1$ . As the firm enjoys some monopoly power, the higher  $\sigma$ , the more likely that it will produce less output (lower  $D$ ). Thus, the production level of industries that enjoy monopolistic competition tends to be lower. However, with the mark-up price, incomes of the firms operating in those industries can still increase:

$$Y_{corp} = \sum_f \varphi_{corp,j} YF_f + \sum_{in} TRF_{corp,in} + \sum_i \sigma_i PD_i D_i$$

where  $\varphi$  is the distribution parameter,  $YF$  is the factor income, and  $TRF$  is the institution transfer.



Once the whole system is specified, the sequential dynamics of the model are subsequently expressed through the following motion equations for an aggregate capital stock  $K$ :

$$K_t = K_{t-1} (1 - \Delta) + \Psi \delta K_t$$

where  $\Delta$  is the depreciation rate,  $\delta K$  is the change in capital stock, and  $\Psi$  is the scaling factor.

#### Poverty Module

To extend the analysis to include the distribution of income and poverty, the specification of household income  $YHH$  for each category  $ihh$  is essential. There are four components of household incomes: (1) factor incomes, the first term on the right-hand side of equation 8; (2) transfers from ROW, inter-households, and government; (3) corporate dividends; and (4) interest income from time deposit TDH at the initial period:

$$\begin{aligned} YHH_{ihh} &= \sum_f dis_{ihh,f} YF_f + \left( e.TR_{row,ihh} + \sum_{ihh} YHH_{ih} + TR_{gov,ihh} \right) + div_{ihh} Y_{corp} + rt.TDH_{ihh,t-1} \\ TDH_{ihh} &= \mu_{ihh} (WEAL_{ihh} - M l_{ihh} - FASS_{ihh}) \\ HHSAV &= \sum_{ihh} mps_{ihh} YHH_{ihh} (1 - th_{ihh}) \\ WEAL_{ihh} &= mps_{ihh} YHH_{ihh} (1 - th_{ihh}) + WEAL_{ihh,t-1} \end{aligned}$$

If the deposit interest rate  $rt$  increases, the  $YHH$  of household  $ihh$  who hold savings ( $TDH$ ) will also increase. Hence, those holding more time deposit assets will enjoy higher incomes. Household time deposit  $TDH$ , on the other hand, is determined by the size of household wealth  $WEAL$ , which is specified as the sum of current household saving  $HHSAV$  ( $mps$  out of  $YHH$  after tax), and the wealth at the beginning of the period (see the above equations). Hence, the size of time deposit is also influenced by the household income, making the two variables interdependent.

The estimates of poverty can be determined by the outcomes of two transmission mechanisms. The most direct one is through changes in wages and other incomes, and another mechanism is through changes in the price of basic commodities in order to determine the monetary poverty line. To arrive at the prices of basic needs (prices presumably paid by the poor), the consumption pattern in the rural and urban areas has to be taken into account to reflect different prices actually paid by poor households in those two areas. The starting point is to select a basket of Basic Needs (BN) reflecting the consumption pattern of the households around the presumed poverty line and yielding the threshold caloric requirements. Typically, food is by far the most important commodity in the BN basket. Denoting the basket of BN by  $\pi_{com}$ , the poverty line is essentially  $\sum_{com} \pi_{com} \cdot P_{com}$ , where  $P_{com}$  is the endogenously derived poverty line prices.

The remaining information needed to arrive at the poverty estimates is the intra-household distributions. Without such information, we can only approximate the resulting poverty by comparing the trends of the price of poverty line (equation 12) and the estimated incomes of poor households derived from equation 8:

$$P_{com} = \frac{\sum_{bc} P_{bc} Q_{bc}}{\sum_{bc} Q_{bc}},$$

where  $bc$  denotes the basic commodities presumably consumed by the poor.

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## NOTES

1. Cash payments to compensate for the fuel price increase amount to Rp300,000 (about US\$30) each to 15.5 million poor households as defined as those who meet at least eight of the fourteen criteria, including daily income and expenditure on healthcare, food and clothing. While the cash handouts may serve the short-term purpose to help alleviate the immediate impact of the steep fuel price hikes on the poor, the cost in a longer term is likely to exceed the net benefits to the poor.
2. According to the report by the Supreme Audit Agency (BPK), as much as 96 per cent of the extended BLBI could potentially become a government loss (unpaid borrowing).
3. The shift of BLBI burden from the central bank to the government was far from easy, especially when the precise amount has not been agreed upon by the two parties. Only after long and arduous negotiations, in late 2003 the government and the central bank had finally reached an agreement on BLBI settlement and the financial relations between the two.
4. In effect, the blanket guarantee made the government pay explicitly to depositors of the closed banks and pay implicitly to banks that remain open (through the recapitalization programme). In addition to the recap bond, the government also issued T-bond with maturity that ranges from seven to ten years and fixed interest rates at around 10 to 14.5 per cent. By the end of 2002, this bond has reached Rp28 trillion. Unlike in the case of recap bond, the main purpose of the T-bond issuance is to help finance the budget deficit.
5. This early redemption scheme was exercised in 2003 in which holders of recap bonds, for example, banks and securities companies, sold some of the bonds at higher prices. To some extent, this move helped reduce price volatility in the secondary market. To conduct the purchase, the government used the proceeds from privatization and asset selling by IBRA (Indonesia's Bank and Restructuring Agency).
6. Note that up to 2004 the government expenditure recorded in the official budget has been classified into routine, development, and regional balance funds. Beginning in 2005 no distinction is made between routine and development expenditure.
7. This standard definition of fiscal sustainability is of course relying on the macroeconomic fundamentals alone. But a fiscal non-sustainability can still arise due to multiple equilibria (for example, self-fulfilling expectation) and some irrational market actions.
8. More detailed explanations of the model structure and mechanisms are in Azis (2001), Azis (2002), and Azis et al. (2004).
9. To the extent that "rescheduling" typically involves some combination of principal write-offs, interest reduction, and extended repayment periods, the proposed non-conventional scheme is essentially the same with debt rescheduling. It does not, however, fall into the category of repudiating odious debt because most of the debt was incurred during a legitimate government and employed for the needs and in the interests of the state. The debt was simply a result of bad policy.
10. To the extent that the timing of sovereign debt default is generally difficult to predict because it results from policy decisions driven as much by political and other non-economic factors as by economic ones (Rieffel 2003), it is implicitly assumed in the simulations that the write-off will take place between 2005 and 2010. Since the forecast period is set using a five-year interval, however, for practical reason the shock is imposed in 2010.
11. A survey of investors' attitudes towards innovation in emerging markets' debt instruments, conducted by the IMF, the Emerging Markets Traders Association (EMTA), and the Emerging Markets Creditors Association (EMCA), reveals that concerns about exchange rate manipulation and an unexpected rise in inflation are among the most important factors that cause investors' reluctance to invest in domestic currency bonds; see Borensztein and Mauro (2002).
12. Note that the debt/GDP path under the baseline scenario is based on the actual debt repayment schedule as depicted in Figure 2.
13. For example, the CAR of Mandiri, the nation's largest bank that also holds the largest share of recap bonds, is higher than 20 per cent (as of 2005).
14. In particular, in the following sectors: food (Rp20 trillion), non-food (Rp10 trillion), transport (Rp8 trillion), construction (Rp1 trillion), and trade (Rp1 trillion).
15. Since most BLBI ended up as NPLs, it is possible that the ratio of NPLs to total credit will fall when BLBI is reduced.
16. It is important to note that a lower level of unemployment rate associated with higher GDP growth in this simulation is to be placed in the context of a comparison with the baseline; it does not necessarily imply that there is always a negative relation between GDP growth and unemployment rate overtime.



17. Only when data on the intra-group distribution of income are available one can be more precise in predicting the resulting trend of poverty.
18. The ratio of total incomes of the four poorest household groups divided by the total incomes of all household groups is higher up to 2001. Furthermore, the ratio of total incomes of the agricultural poor households (small farmers and agricultural employees; hereafter the "poor-2") to total incomes of all the poor households (poor-2 plus the urban and rural non-agricultural poor) is also higher all the way up to 2002.
19. More specifically, Rp20 trillion to the food sector, Rp10 trillion to the non-food sector, Rp8 trillion to the trade sector, and Rp1 trillion to each of the construction and trade sectors.

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