

INEQUALITY AND OIL SUBSIDY IN INDONESIA

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Abstract

This paper is intended to give some alternative positive suggestion on how to cope with the must of the cutting off the oil subsidy domestically. The problem that faced by the government is that the compensation fund will hardly enjoyed by the poor, and moreover it is hard to watch out the whole process. The other conditions that faced by the government is the economical inequality that shall be overcome to prepare the world market era. This paper suggests on making such a preparation by the rising up the progressive tax on luxurious goods indirectly. This will make the culture that decreasing the consumption on luxurious goods for the rich, and higher the economical equality for the poor. This will be far from spoiling the poor (as by the coupon distribution for the poor), and even more balancing the government revenue for the sake of economical resurrection in Indonesia.

Keywords: Oil Price, Indonesia, subsidy, progressive tax, indirect tax, Lorentz curve, equality, Cobb-Douglas.

1. Introduction

There are many analysis for the macroeconomic impacts on oil-price shocks or the rice of oil price (Jones & Leiby:1996). But here, we will analyze the conditions that faced by Indonesia for the rising of the oil price nationally, as the oil price in Indonesia is most subsidized. Thus the issue of the hike of oil price in Indonesia become more specific as the rise of oil-price will be concerned with the withdrawal of the oil subsidy.

Everyone that understands the conditions of international oil price can easily say that the Indonesia's domestic oil price is low. This is caused by the subsidy that paid by the government of Indonesia concerning the economical conditions of the citizens. But unfortunately, the demand for the facing of the global market and the bonding with the treatment of economical restructuring by the International Monetary Fund (IMF) has force the government to raise the domestic oil price to be equal with the international oil price¹. But truly this reason will not be said to be the main reason by the government as it touched the national sentiment and dignity. The reason used by the government that sounded by the press is that the subsidy is not healthy for the citizen economically. The subsidy is not benefited the poor but much benefited the rich as they get the same oil price while the financial conditions are very much different. By this logic, the hike of oil price will simultaneously be made with the compensation fund for the poor. This paper will try to describe that the logic becoming the background

¹ KOMPAS, the paper, January 8th 2003.

of the policy is absurd and the economical equity of the citizens can be gained better in other way.

The facts that focused by this paper is:

- The big gap between the poor and the rich in Indonesia.
- The oil subsidy is still needed by the people until such economical conditions of national equity.
- The cases of low participation on employment in Indonesia.
- The corrupt system of governance that should be reduced step by step.

By concerning the conditions above, we will analyze the hike of domestic oil price (withdrawal of oil subsidy) and the economical impacts that may be risen by offering alternative solutions that lower the social gap between the rich and the poor. This will help to make the people ready for the competition era in the market global. By the time, the people will be much ready for the same oil price with the international one.

2. Macroeconomic impacts of the national hike of oil price

Here we use the modified Cobb-Douglas-production function to analyze the macroeconomic impact of the rise of oil price (Dullien:2000).

$$Y = Af(K, L, E) = AK^\alpha L^\beta E^{1-\alpha-\beta}, \quad (1)$$

while K = capital, L = labor, E = energy, and A = technological process. Assume the technological progress A=1, we can derive the oil price and real wages as:

$$P_{oil} = \frac{\partial f}{\partial E} = (1-\alpha-\beta)K^\alpha L^\beta E^{-\alpha-\beta} \quad (2)$$

$$w = \frac{\partial f}{\partial L} = \beta K^\alpha L^{\beta-1} E^{1-\alpha-\beta} \quad (3)$$

By this, we can consequently see the impacts of the oil price to the real wages (of the employment) as:

$$\frac{\partial w}{\partial E} = (1-\alpha-\beta)\beta K^\alpha L^{\beta-1} E^{-\alpha-\beta}. \quad (4)$$

By the equation above we can see that the rise of the oil price domestically will fall the real wage, as this will make the unemployment become restless. In Indonesia the restless unemployment has a great probability on turning out to be crime (Hariadi:2003). It will be described later that the rise of the oil price will also rise the price of house-hold goods since the rising of the production-cost of industries while the demand for energy does not fall as much as the energy price increases. Moreover the rising of the oil price domestically must calculated beyond the ability of the citizens to cope with. The second-round impact of rising oil price is very dangerous to the sustainability of some primer economical sectors such as the fishermen², etc. For rural populations, oil price will be boomed as the hike oil price simultaneously will rise the price of distribution.

Dullien (2000) has shown that the only positive fiscal policy to cope with the rising oil price is to give more subsidy while in the other hand to rise the taxation of goods, i.e.: VAT³, etc. Perhaps, this is good for Indonesia, but this

² KOMPAS, the paper, January 19th 2003.

³ Value Added Taxation

papers will describe some more plausible solution concerning the economical inequality trends of the population in Indonesia.

3. The problem of inequality in Indonesia

There is a unique problem of poverty in Indonesia: the gap between the rich and the poor is very big unproportionally⁴. A mechanism that we can use to measure the inequality condition in a country is Lorentz curve (Samuelson and Nordhaus:1995, Arya and Lardner:1999, Berndt:1991, Wynne:2002). We will modify the Lorentz curve hence we can get how the economical equality has been approached by Indonesia theoretically.

We assume that there is no person in the country that does not use the oil for the needs, at least the household needs that industrialized by using oil. Henceforth, in an x-y cartesian graph we can say that the function $y=x$ is the ideal (perfect) equality of the population's usage on oil, while 10% of the poorest uses 10% of the oil-resources, 20% of the poorest uses 20% of the oil-resources, and so forth. The deviation of the actual oil distribution from perfect equality is measured by the amount by which the actual Lorentz curve departs from the straight line $y=x$. This will be graphed as function of $y=f(x)$ that placed under the ideal graph. We assume that $y=f(x)$ as standard quadratic-equation $y=f(x)=ax^2+(1-a)x$, while a is constant (See figure 1). If the Lorentz curve is close to the straight line, energy will be distributed approximately uniformly, while a large departure from the line indicates considerable inequality of distribution.

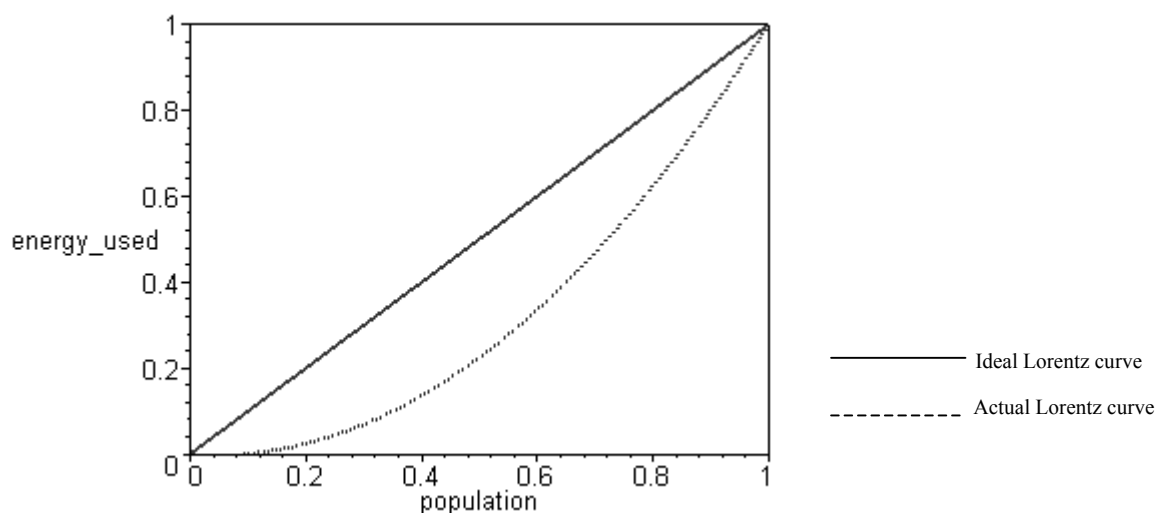


Figure 1

The Lorentz curve that shows the equity of the percentage usage of energy used by the population. The $y=x$ is ideal condition of equity while the $y=f(x)$ below the ideal line is the actual condition of the percentage usage of energy by the population.

Then we can define the coefficient of inequality distribution of energy of the Lorentz curve as the ratio of the area between the curve $y=f(x)$ and the line $y=x$ with the area under the line $y=x$. Mathematically, we can say that the coefficient of inequality is given by $L = 2 \cdot \text{area between Lorentz curve and the line } y=x$, or

⁴ While this fact cannot be measured well by using formal Gini Index, as described by Abuzar Asra on his paper in the Journal of the Asia Pacific Economy, *Poverty and Inequality in Indonesia*. He found that the aggregate method cannot be trusted scientifically thus scientific approach must use the disaggregate method in order to gain empirical conditions that reflects actual reality. As a matter of fact, he used the data from the National Socioeconomic Survey (SUSENAS) and Statistics Bureau (BPS). This fact shall be a reflection on our statistical measurement on Indonesia's conditions that still need to be reformed.

$$L = 2 \int_0^1 [x - f(x)] dx, \quad (5)$$

where $y=f(x)$ is the equation of the Lorentz curve.

By using the standard quadratic equation of $f(x)= ax^2 +(1-a)x$, we can picture some value of a to some conditions of inequality in the country as figure 2. In 2003 the number of the poor is calculated approximately 60 percent (about 120 million people)⁵, while the conditions of inequality coefficient is estimated⁶ very close to 1. This is probably why the supermarket and sales of many luxurious and expensive goods into Indonesia is still high in the monetary crisis in Indonesia (1998-2000). By this conditions, we have an argument that we cannot believe any further on the calculations of GNP and GDP since the calculations of the statistical data for Indonesia must be in the aggregate perspectives.

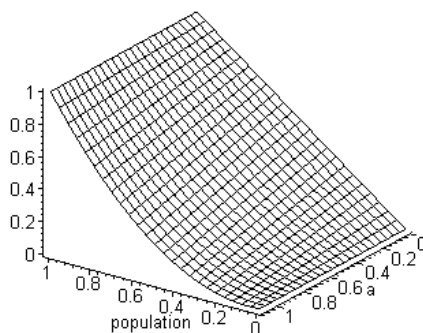


Figure 2

Some values of a - the general quadratic equation of Lorentz curve that reflects the actual condition $y=f(x)=ax^2+(1-a)x$. It is obvious that the smaller “ a ” the more equal the distribution of energy usage in a country.

On the rising price of oil in Indonesia, some of economists comment that subsidizing energy for all income groups is very ineffective. They argue that the government could accomplish its welfare objectives more effectively if it does not rely on subsidized energy but rather provides a direct payment to poor households (The World Bank:2000). As this cannot be accepted according to some facts on the corruption mental of the government as IMF itself doubting the ability for the effective distribution of compensation fund for the oil subsidy⁷. By looking at the estimated inequality coefficient of the population in Indonesia, it is obvious that the subsidy will help protecting the poor, as by the equation (3) and (4) the low wage will make the population cannot cope the inflation caused by the raising oil price.

By using the standard quadratic equation of the inequality thus the coefficient of the national inequality will depend upon the value of “ a ”. As described in the figure 2, while there’s no possibility of not using the oil by each population, we can say that the worst inequality will be gained when $a=1$. For example, about 20% of the poorest population can only get about 10% of the energy used. This is a very unequal condition when about 20% of the richest can gain about 28% of the energy reserved.

⁵ This is from many sources of the newspaper and talks show on television as stated by Amin Rais, the chief of MPR RI (House of Representatives of the Republic of Indonesia). The author must admit on the lack of data, as the data exists does not reflect the actual conditions.

⁶ See footnote no.2.

⁷ See KOMPAS, the papers, June 24th 2002 and KOMPAS, July 27th 2001.

3. On inequality and the subsidy: luxurious goods taxation

To model the conditions faced by Indonesia, on some limitation or the lack of plausible statistical data, we will assume that the inequality coefficient on standard quadratic Lorentz equation: $a=1$. Taking this assumption we can say that economical inequality represents the big gap between the rich and the poor. This is plausible as the high rates of the sales of luxurious goods in Indonesia.

In general, we can say that in the high oil price, the needed oil by the poor will only for the domestic usage, i.e.: cooking, electricity, and in some rural areas for the fuel of their works (boat fuel for the fishermen, etc.). In other words, we can say that the poor will use the oil only for the standard of living expenses. This is very different with the rich, while beside to cope their basic necessities or household expenses, they use the oil also to turn on some luxurious goods, such as electrical generator, cars, luxurious electricity goods, i.e.: air-conditioning, warm-bathing, etc. Looking at the conditions, we can say apparently that the usage of the basic necessities by the poor are also cope well by the rich.

Henceforth, the poor needs for oil and energy are the subset of the rich needs. Mathematically, we can say that,

$$N_p \subset N_R \quad (6)$$

where, N_p is the expenses of the poor for basic necessities and N_R is the expenses for the usage of energy by the rich. In advanced, we can say then,

$$N_R - N_p = \Delta P \quad (7)$$

where ΔP is the expenses for the luxurious goods.

While we give notation t_{oil} for the subsidy that given by the government ($t_{oil} < 0$), then,

$$N_p = n_p + t_{oil} \text{ and } N_R = n_R + t_{oil}, \quad (8)$$

where n_p and n_R are the expenses basic goods by the poor and the expenses by the rich, respectively.

Simultaneously, by the equation (7),

$$\Delta P = n_R + n_p \quad (9)$$

We will use the standard quadratic Lorentz equation in advanced, with the assumption that $y=f(x)=ax^2+(1-a)x$, within $x \approx n_p/N$, where $N=N_p+N_R \approx 2n_p+n_{LG}+3t_{oil}$. By now, we can derive

$$N_p = a \left(\frac{n_p}{N} \right)^2 + (1-a) \frac{n_p}{N} \quad (10)$$

$$\text{then, we can submit } N_R \approx \left(1 - \frac{n_p}{N} \right) \quad (11)$$

By assuming that $\Delta P = n_{LG} \cdot t_{LG}$, where n_{LG} is the price of of the untaxed luxurious goods and t_{LG} as the luxurious-goods taxation that placed as indirect-progressive taxation, we can get the equation for the subsidy that must be beared by the government concerning the value of luxurious tax collected,

$$\text{oil_subsidy_revenue} := np - \frac{a np^2}{\left(2 np + \frac{nr - np}{tLG} \right)^2} - \frac{(1-a) np}{2 np + \frac{nr - np}{tLG}}$$

and change of the oil subsidy concerning the taxation on luxurious goods will be

$$\text{change_on_oil_subsidy} := \frac{np (nr - np) (-2 np tLG - nr + np + a nr - a np)}{(2 np tLG + nr - np)^3}$$

Henceforth, we can measure the suitable energy subsidy for the people concerning the inequality level of the people as every change in the subsidy will

be backed-up by the taxes revenue for the rich as a taxation on luxurious goods. An example of the simulation results are presented by figure 3. In figure 3 the trends to higher or lower the percentage of the taxation of the luxurious goods are showed by the field regarding the trends of higher or lower the level of subsidy. While the progressive taxation is in zero point, we can see the fact that it needs subsidy (in negative point). This happens on the condition of the bad inequality while there is no any progressive tax that encouraging the rich becoming more and more consumptive, as they are exploited the poor one.

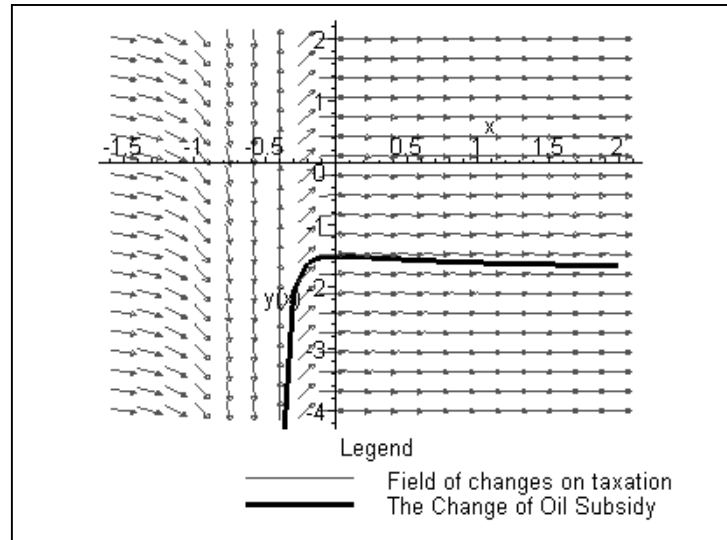


Figure 4

One example of some estimated actual data, of the relation between the subsidy changes with the progressive taxation that can balance the domestic revenue. The change of oil subsidy is the solid line and the trends to higher or lower the taxation are represented by the field among the oil-subsidy line.

However, while the consumption luxurious goods decreased it will be the normal condition to decrease subsidy, step by step as presented by the figure 4. In this condition, the subsidy changes into the positive value (adding some energy taxes) will be relevant as occasionally in the established economically countries.

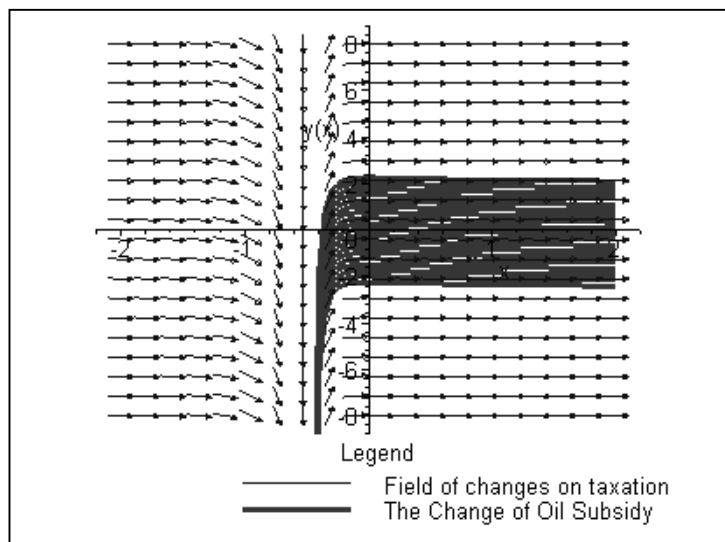


Figure 5

The factors of the decreasing the consumptive behavior of the rich that stabilize the domestic financial conditions as the equality increasing. By this situation, it is possible to withdraw the subsidy, even further give some taxation on energy usage.

In this conditions, the people are ready for the competitive arena for the free-trade market as the equality is high enough while the rich can protect the poor indirectly.

In reality, it is very awful that recently the government of Indonesia on the contrary lowering the luxurious taxes, and moreover, the taxes for the luxurious goods are collected as direct taxes. It will become more efficient and effective to work as progressive taxation if the progressive taxes for the luxurious goods labeled as VAT, in other words, as indirect taxes. As it is not secret anymore that the collusion between the tax-collectors with the tax-payers are usual. By using the indirect taxes for this will eventually makes the works become efficient, and decreasing the possibility to corrupt.

Comparing to the solution for the protecting the poor that nowadays become the public policy by the government, the policy to concerning the progressive taxes is much better. The distribution of coupons for inexpensive kerosene will on the contrary spoiling the poor and even more the rich. This solution in advance, makes no preparation into the future agenda to cutting off the whole subsidy or even make the energy taxes.

4. Conclusion

The domestic oil price in Indonesia is very low compared to the international one. But this is to be made in order to preserve the citizens, especially the poor. But the challenge of the global market has given consequences on the same market price. The subsidy must be cut off. But macro-economy is very labile. The government shall think on some strategies on how to cope with the impacts on the withdrawn subsidy.

The hike oil price will give effect to the inflation rate and even to the probability on social restless, especially unemployment restless. These restless can even more fatal on the impacts, as the crime rate will eventually rise, and the economical stability will be bothered.

Indonesia is a kind of country with the gap between the poor and rich very is big. The economical inequality factors are often not caused rationally; this is because the corruption and the weak law-enforcement. One strategy to gain two goals: higher the equality coefficient simultaneously the preparation into the same market level with the international is by applying the progressive taxes for the luxurious goods. The progressive taxes will balance the government's revenue on the lateness of subsidy but further decrease the consumptive trends on the rich population in order to higher the equality coefficient.

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