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Abstract

We numerically examine the impact of the actually implemented reduction policy of the subsidy to the petroleum sector by using a static CGE model with the latest input-output table of Indonesia of year 2008. Our simulation results indicate that the Indonesian economy suffered from the actually implemented policy with a welfare loss of 28,417.78 billion rupiah even with the conversion policy. Furthermore, the proposed future reduction policy by the Ministry of Finance would unavoidably result in a welfare loss even when the government continues the current conversion policy. However, our simulation results also suggest that a new future conversion policy with a slightly additional subsidy to the LPG sector would eventuate in completely offsetting the negative effect of the proposed plan on the future welfare with an expanding government expenditure.

Keywords: Indonesia, Computable General Equilibrium (CGE) Model, Petroleum, Subsidy, Welfare, Simulation

JEL Classification: C68, D57, D58, D60, E17, and H53

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1 Introduction

We numerically examine the impact of the reduced subsidy to the petroleum refinery sector on the Indonesian economy by using a static CGE model with the latest Input-Output table of Indonesia of year 2008.

While the Indonesian government had substantially been subsidizing the petroleum refinery sector in order to fulfil the price gap between the world and domestic ones, it recently reduced the subsidy drastically. The total amount of the subsidy to the petroleum refinery sector was 139,106.7 billion rupiah in year 2008, but it was reduced down to 88,890.8 billion rupiah in year 2010. Its reduction rate reaches 36.1% based on our calculation. However, the Indonesian government has still subsidized the petroleum refinery sector substantially, and the petroleum refinery sector is only the sector of which imports the Indonesian government subsidizes. In fact, the Ministry of Finance of Indonesia is further going to substantially reduce the subsidy to the petroleum refinery sector based on its future plan, and it tries to reduce the amount of the subsidy to 44,300 billion rupiah in year 2014, which corresponds to the 68.154% reduction from the level of year 2008. Since the Indonesian economy has been relying on the large amount of the subsidy to the petroleum refinery sector, the impact of the reduction policy seems substantial. Furthermore, there is another fact that the Indonesian government also introduced a conversion policy to shift demand for petroleum to for LPG when it implemented the reduction policy, and it has indeed been providing the LPG sector (the electricity, gas and water supplies sector) with additional 14,100 billion rupiah since 2007 until 2011. While the impact of the reduction of the subsidy to the petroleum refinery sector seems negative, an expansion of the subsidy to the LPG sector is expected to have a positive effect on the Indonesian economy.

Our main purpose is to numerically explore the impact of such actual subsidy policies on the welfare of Indonesia within a CGE framework[1]. We try to numerically measure the impact of the actual reduction of the subsidy to the petroleum refinery sector (the reduction policy) as well as of the actual increase in the subsidy to the LPG sector (the

[1]Our simulation results have been obtained by executing our own FORTRAN programmes.

conversion policy). Then, we further investigate the effect of further reduction of the subsidy to the petroleum refinery sector on economic efficiency of Indonesia. Based on the actual future plan proposed by the Ministry of Finance of Indonesia, we conduct realistic simulations in order to explore the numerical effect of the future reduction policy. Since we employ a CGE model, all possible channels of the reduction policy can be taken into account, and the overall effect on the Indonesian economy can be captured numerically.

By using the estimated parameter values, we have successfully re-produced the actual Indonesian economy within our CGE model. In comparison with our successful benchmark model, we have simulated the impact of the actual reduction of the subsidy to the petroleum refinery sector from 139,106.7 billion rupiah to 88,890.8 billion rupiah, and we have obtained the following results: First, we have estimated the pure effect of the reduction policy to be a welfare loss of 295,631.95 billion rupiah to the Indonesian economy in two years between 2008 and 2010. Second, when we also take into account more realistic aspects such as an actual expansion of government expenditure in the two years, then the magnitude of a welfare loss shrinks to 68,064.43 billion rupiah. Third, when we further consider the effect of the actual ongoing conversion policy as well, then our simulation result suggests that the actually implemented reduction policy still has a negative effect on welfare with a welfare loss of 28,417.78 billion rupiah. Fourth, we have also explored the effect of the proposed future reduction plan by the Ministry of Finance of Indonesia, and we have estimated a welfare loss of the plan in different years. While we have estimated the welfare loss to decrease over time, the range of the welfare loss in the next 3 years is between approximately 40,000 billion and 79,000 billion rupiah based on our different assumption on the future conversion policy to the LPG sector. Finally we have also estimated the additional amount of the subsidy to the LPG sector in the future conversion policy to neutralize the negative effect of the proposed future reduction plan on the Indonesian economy. Our estimated additional amount of the subsidy to the LPG sector are between approximately 114 billion and 149 billion rupiah in different years. In our effect-neutral future conversion policy, we have further obtained the result that such a further increase in the subsidy to the LPG sector stimulates the economy, thus resulting in an expansion of government expenditure with no negative effect on welfare.

We organize our paper as follows. We briefly present the background and review the literature in the next two sections. Then we explain our numerical model, where we also present our social accounting matrix (SAM) and our calibration method. In section 5, we explore the impact of the actually implemented reduction policy by using our CGE model. In section 6, we also simulate the effect of the proposed future reduction plan by the Ministry of Finance of Indonesia. We conclude our paper in section 7.

2 The Background

Figure 1 shows the increasing trend of fuel consumption in Indonesia. While fuel consumption in year 2000 was only 980 bb/day, it increased up to 1,200 bb/day in year 2010. The increasing trend of fuel consumption can mainly attribute to the expanding Indonesian economy, and the Ministry of Finance of Indonesia forecasts a further increase in fuel consumption in the future in accordance with its expectation of future economic growth. The Indonesian government has tried to keep the domestic fuel price lower than the world level in order to maintain its stable economic growth. The subsidy has been used to pay the price gap between domestic and world levels. The increasing trend of fuel consumption associated with high economic growth as well as an increase in the world oil price resulted in the expanding subsidy to fuel consumption (the petroleum refinery sector). While the ratio of the subsidy given to the petroleum refinery sector to the total government expenditure was only 10.065% in year 2006, it increased to 14.17% in year 2008. The expanding subsidy to the petroleum refinery sector obviously induced further financial burdens on the Indonesian government, and its deficits increased. While the Indonesian government recognizes an important role of the subsidy to the petroleum refinery sector to maintain stable economic growth, it started to decrease the subsidy to the petroleum refinery sector in order to reduce government deficits. The Indonesian government also implemented a policy called the conversion policy, in which the government has subsidized the LPG sector in order to reduce high dependency of the Indonesian economy on petroleum consumption. In the conversion policy the government has subsidized LPG consumption to shift demand for petroleum to for LPG. While the government plans to end the conversion policy in year 2011, it also tries to further reduce the subsidy to the petroleum refinery sector down to 44,300 billion rupiah in year 2014, which is nearly 1/7 of the amount of year 2008.

3 Literature Review

We employ the conventional static CGE model developed by Ballard, Fullerton, Shoven, and Whalley (1985), and Shoven and Whalley (1992). We basically use the framework of Kato (2011) and Kato (forthcoming) in order to explore the effect of subsidy reduction in Indonesia. While there has been many studies on the effect of energy policies in Indonesia, the following studies are in particular related to us: Hartono and Resosudarmo (2006) investigated the effect of pricing and subsidy policies for fuel oil, gas and electricity in Indonesia. Hartono and Resosudarmo (2008) evaluated a subsidy cut in fuel oil consumption in Indonesia as an energy policy within a social accounting matrix framework, and investigated the effect on income of different income groups. Clements, Jung, and Gupta (2007) explored the effect of higher petroleum prices on the Indonesian economy within a multi-sector CGE model, and concluded that subsidy reduction would result in the increasing price and the decreasing output. Clements, Jung, and Gupta (2007) also predicted that the urban household group would mostly be affected by subsidy reduction[2].

While these studies used a multi-sector CGE model or a social accounting matrix framework, we explicitly specify utility and production functions in our model, in order to take into account the optimal behavior of each agent with our own SAM constructed by using the latest input-output table of Indonesia of year 2008. We also consider the budget constraint of the government explicitly in our framework, and evaluate the effect of the currently ongoing reduction policy on welfare rather than on prices and quantity.

[2] Saad (2009) estimated demand for petroleum in Indonesia based on a cointegration approach, while its main concern was not directly related to the effect of the subsidy policy.

This is because our main concern is to numerically evaluate the effect of the actually implemented reduction policy on economic efficiency of the whole Indonesian economy. While the above mentioned studies tried to evaluate the effect of subsidy reduction as an energy policy, our main concern is also to provide alternatives based on the welfare concern.

4 Numerical Analysis

We use the conventional static CGE model in which there are following agents; a representative consumer, 66 different production sectors, the government, and an investment industry[3]. The 66 production sectors are the same as those in the Indonesian Input-Output Table of year 2008. A representative consumer maximizes his/her utility defined over 66 different consumption goods, which are produced by 66 different production sectors respectively. Each of 66 different production sectors maximizes its own profits. Each production sector uses its own good and other goods produced by other production sectors in its intermediate production processes. Each production sector uses imported goods to produce its final domestic consumption good, and it also determines its optimal amount of exports. The government imposes an individual income tax on the representative consumer, and a production tax as well as an import tariff on 66 different production sectors. The government also subsidizes 66 different production sectors, and subsidies are divided into two types; a general subsidy and an import subsidy. All markets are assumed to be fully competitive, so that all prices are determined in equilibrium in the corresponding fully competitive market. The detailed explanation about the model is given in Appendix.

[3]It is conventional in a static CGE model to introduce an investment industry to the model. The investment industry is introduced only for making a CGE model consistent with the actual SAM. See, for instance, Hosoe, Ogawa, and Hashimoto (2004).

4.1 Social Accounting Matrix (SAM)

We have used the latest Input-Output table of Indonesia of year 2008 in order to construct our social accounting matrix (SAM). Table 8 shows our SAM[4]. The 41st sector ($i = 41$) among the 66 different production sectors corresponds to the petroleum refinery sector, which we explore in our analysis. We also consider the LPG sector, which is categorized in the 51st sector ($i = 51$) called the "electricity, gas and water supplies" sector in our SAM. Note that the only petroleum finery sector ($i = 41$) obtains the import subsidy among all 66 different production sectors, and also that the total amount of the subsidy to the petroleum sector ($i = 41$) reaches 16.445% of the total amount of the subsidy in year 2008. By utilizing our SAM, we calibrated our model in order to produce a benchmark model as follows.

4.2 Calibration

Table 1-1 to 1-4 show the calculated values of relevant endogenous variables obtained within our benchmark model. Table 6 and 7 also show the parameter values which resulted in the benchmark values of endogenous variables. Table 6 shows the general subsidy rates and the import subsidy rates of sector $i = 41$ (the petroleum finery sector) and $i = 51$ (the LPG sector), which have been calculated from our SAM. These rates are proportional, since they have been obtained by dividing the total amount of the subsidy by the total amount of production and imports. As Table 1-1 to 1-4 show, our benchmark model has successfully reproduced the actual Indonesian economy within our CGE model. We can now use our benchmark model to simulate the impact of the actually implemented policies related to the petroleum as well as the LPG sectors.

5 The Impact of the Actually Implemented Policies

In practice, the government usually implements several mixed policies at the same time. When the government reduces the subsidy, the government expects to have a surplus if

[4] The figures in our SAM are measured in million rupiah.

expenditure remains unchanged. This implies that it is relatively easy for the government to increase its expenditure when it reduces the subsidy. In fact, while the Indonesian government reduced the amount of the subsidy to the petroleum refinery sector, it increased its expenditure. As Budget Statistics 2006-2012 of the Ministry of Finance shows, the Indonesian government substantially expanded expenditure of some items in its general government expenditure such as defense, communities amenities, and education. Furthermore, the Indonesian government also implemented the so-called conversion policy in which the government increased the subsidy to the LPG sector in order to shift demand for petroleum to for LPG. This implies that in practice the reduction of the subsidy to the petroleum refinery sector was followed by other two policies; an expanding expenditure policy and the conversion policy. While the effect of the reduction of the subsidy to the petroleum refinery sector on the Indonesian economy seems negative, other two policies can be expected to stimulate the economy. Thus, when we examine the impact of the actually implemented policies, we first separate the pure effect of the reduction of the subsidy to the petroleum refinery sector from other two policies, and then add other effects of two policies in order to comprehensively explore the overall effect of the actually implemented policies.

5.1 The Pure Effect of the Reduction of the subsidy to the Petroleum Refinery Sector

The Indonesian government reduced the subsidy to the petroleum refinery sector by 50,215.9 billion rupiah from 139,106.7 billion rupiah in year 2008 to 88,890.8 billion rupiah in year 2010. The reduction corresponds to 36.1% in the rate from the year 2008 level. In this section, we only reduce the amount of the subsidy to the petroleum refinery sector by 36.1% in our simulation so that we try to capture the pure effect of the reduction. Since the amount of the subsidy to the petroleum sector is only changed and all other government instruments remain unchanged, the government surplus is expected in this simulation. It is obviously unrealistic, but this simulation can numerically present the pure effect of the reduction of the subsidy. Table 2 shows the result, where we use the equivalent variation to measure the welfare effect. The table also includes the effect on income of several sectors which are affected by the reduction policy. The reduction itself resulted in a welfare loss of 295,631.946 billion rupiah to the Indonesian economy, and it also generated a new government surplus by 4936.285 billion rupiah. The petroleum refinery sector has been most damaged, and its damage by the pure effect is measured to be the 21.6085% reduction in its income from the year 2008 level. The table also shows that other transportation sectors have also been damaged by the pure effect.

However, note that in this simulation the temporary budget constraint of the government is not satisfied, since the amount of the subsidy to the petroleum sector is only changed. In fact, while the government reduced the subsidy to the petroleum refinery sector, it also expanded its expenditure. In the next section, we also incorporate an expansion of government expenditure where we explicitly consider the budget constraint, so that the government surplus generated by the subsidy reduction is used to expand government expenditure in the next simulation. An expansion of government expenditure is expected to have stimulated the Indonesian economy.

5.2 The Reduction with expanding expenditure

As Budget Statistics 2006-2012 of the Ministry of Finance shows, the Indonesian government substantially expanded expenditure of some items in its general government expenditure such as defense, communities amenities, and education, when it drastically reduced the subsidy to the petroleum refinery sector between 2008 and 2010. The expanded items in the general government expenditure appear in the Input-Output table as $i = 63$ (public administration and defense) and $i = 64$ (social and community services). For instance, expenditure on defense appears in $i = 63$ (public administration and defense), and communities amenities as well as education appear in $i = 64$ (social and community services). Thus, in this section, we simulate the case where all the government surplus generated by the reduction of the subsidy to the petroleum refinery sector is used to expand the government consumption of $i = 63$ (public administration and defense) and $i = 64$ (social and community services). Note that in this simulation the budget constraint is satisfied, and also that we assume the ratio of expenditure between $i = 63$ and $i = 64$ remains unchanged in the simulation. The second row in Table 2 shows the result. As expected, expanding government expenditure results in stimulating the Indonesian economy, and thus the negative pure effect of the reduction of the subsidy to the petroleum refinery sector is substantially reduced. However, as the table shows, the effect on welfare is still negative, and an estimated welfare loss is still 68064.432 billion rupiah.

5.3 The Overall Effect with the Conversion Policy

The government also implemented the so-called conversion policy in order to shift demand for petroleum to for LPG, when it reduced the subsidy to the petroleum refinery sector between 2008 and 2010. Indeed, the Indonesian government has been subsidizing the LPG sector ($i = 51$) with additional 14,100 billion (14.1 trillion) rupiah in the conversion policy for 5 years since 2007 until 2011. This implies that on average the Indonesian government has provided the LPG sector with 2,820,000 million (2,820 billion) rupiah annually through the conversion policy. We now explicitly consider the effect of an expansion of the subsidy to the LPG sector as well, and we add the conversion policy to our simulation. This simulation corresponds to the most realistic case where all actually implemented policy changes are taken into account. In the simulation here, we assume that the government not only reduces the subsidy to the petroleum finery sector by 36.1%, but also increases the subsidy to the LPG sector by 3.36088%[5] in two years from the year 2008 level. Furthermore, the government surplus is used to expand government

[5]Note that the conversion policy started in year 2007, and the total amount of the subsidy to the LPG sector in year 2008, which is 83,906,513 million rupiah, already includes the subsidy through the conversion policy. Since the annually additional amount through the conversion policy is 2,820,000 million rupiah on average, we assume that the government subsidized the LPG sector with 5,640,000 million rupiah in two years. This implies that the total amount of the subsidy to the LPG sector increased from 83,906,513 million to 86,726,513 (= 83,906,513 + 2,820,000) million rupiah in two years. We can only obtain each value of the total amount of the subsidy to the petroleum refinery sector in year 2008 and 2010, and we have calculated the reduction rate from the year 2008 level to that of year 2010 to be 36.1%. Thus, we also calculate the increasing rate of the subsidy to the LPG sector, as if it increased from the year 2008 level to that of 2010. This consistent assumption gives us the increasing rate to be 3.36088%. Since the total amount of the subsidy to the LPG sector of year 2008 already includes the subsidy through the conversion policy, we assume that the figure of 83,906,513 million rupiah remains unchanged every year from 2007 to 2011.

expenditure in this simulation. Note that the budget constraint of the government is satisfied so that government deficits are not generated by such a mixed policy. The last row in Table 2 shows the overall effect of the actually implemented policies between 2008 and 2010. As Table 2 shows, the overall effect on the Indonesian economy is still negative, and a welfare loss is measured to be 28,417.78 billion rupiah[6]. Note that a 3.36088% increase in the subsidy to the LPG sector strongly induces a welfare gain by stimulating the Indonesian economy. However, the conversion policy by the 3.36088% increase in the subsidy to the LPG sector cannot offset the negative effect of the 36.1% reduction of the subsidy to the petroleum refinery sector. While the reduction itself decreased welfare by 295,631.946 billion rupiah, we estimate the actual effect followed by an expansion of government expenditure *and* the conversion policy to have reduced welfare by 28,417.78 billion rupiah. Note that these results of the effect on welfare are measured in two years from 2008 to 2010, so that we roughly interpret a half of the effect per year to obtain an annual welfare loss of 14,208.89 billion rupiah provided that the reduction of the subsidy to the petroleum refinery sector was proportional in two years.

6 The Impact of the Proposed Further Reduction Plan

The Ministry of Finance of Indonesia has already announced its future plan to further reduce the subsidy to the petroleum refinery sector. Figure 2 shows the future plan proposed by the Ministry of Finance of Indonesia. In this last section, we simulate the effect of the future reduction plan on the Indonesian economy. As the previous section

[6] In our separate simulation, we have estimated the magnitude of the ”pure” positive effect of an increase in the subsidy to the LPG sector by 3.36088% to be 32,309.91 billion rupiah in a welfare gain. Furthermore, since such a policy strongly stimulates the economy, it ends up reducing the government deficits, and the estimated government ”surplus” is 378.04 billion rupiah, although the subsidy to the LPG sector increases. Since the generated government surplus can be used to expand government expenditure, it further results in a more welfare gain. If the government only increases the subsidy to the LPG sector by 3.36088% and it uses all the surplus for expanding government expenditure, then we estimate a welfare gain of 60,445.52 billion rupiah. Since the actually implemented policy is a mixed policy of such a policy with expanding government expenditure as well as the reduction of the subsidy to the petroleum finery sector, the overall effect on welfare is reduced to eventuate in a welfare loss of 28,417.78 billion rupiah.

suggests, the overall effect substantially depends on the assumption of the future amount of the subsidy to the LPG sector. This implies that the overall effect of the proposed reduction policy depends on the future conversion policy. Then as shown in Table 3, we simulate two cases depending on different scenarios on the future conversion policies. In Scenario I, we assume that the conversion policy ends in year 2011 as actually planned. On the other hand, in Scenario II we assume that the government continues to subsidize the LPG sector through the conversion policy even after year 2011. In Scenario II, we assume that the government keeps providing the LPG sector with additional 2,820,000 million rupiah every year until 2014. In both scenarios, we keep our assumption that the budget constraint of the government is satisfied, so that the government surplus is fully used to expand government expenditure. Note also that both scenarios are the same until 2011. Table 4 shows the effect of the proposed future reduction plan on the Indonesian economy. Due to the successive provision of the subsidy to the LPG sector even after year 2011, a welfare loss is smaller in Scenario II[7]. However, the table indicates that a welfare loss cannot be avoidable even though the government continues to provide the LPG sector with the same amout of the subsidy through the conversion policy. Note also that the magnitude of the negative effect on welfare keeps decreasing in both scenarios over time, since the reduction of the subsidy to the petroleum sector enables the government to expand its expenditure, thus resulting in the economy being more stimulated by expanded government expenditure.

Table 4 shows that the Indonesian economy will suffer from the proposed future reduction plan. Even when the government continues to provide the LPG sector with the same amount of the subsidy through the conversion policy, we estimate a welfare loss of 46,547.69605 billion rupiah in year 2013 and 39,707.50901 billion rupiah in year 2014, respectively. Then, we guess to the extent how much the government should provide the LPG sector with an additional subsidy, in order to completely offset the negative effect of the reduction policy on the future welfare. Table 5 shows our simulation result of the effect-neutral conversion policy, where we have assumed that the government can increase

[7] Note that all welfare gains are measured in comparison with the welfare level of year 2008.

the subsidy to the LPG sector up to the level at which the proposed future reduction of the subsidy to the petroleum refinery sector has no effect on welfare. Note that the rate shown in Table 5 has endogenously been calculated, and it is the increasing rate of the subsidy to the LPG sector from the year 2008 level. The budget constraint is satisfied so that the government expands its expenditure if a further increase in the subsidy to the LPG sector generates the government surplus. In comparison with Scenario II in Table 4, we suggest that the government could further expand its expenditure with the effect-neutral conversion policy. While the government has to increase the subsidy to the LPG sector through the effect-neutral conversion policy by approximately 4 to 5% from the year 2008 level, the effect-neutral policy induces the more government surplus by stimulating the economy, thus resulting in more government expenditure with no effect on welfare. If we assume the average annual amount of the subsidy to the LPG sector through the current conversion policy to be 2,820 billion rupiah, then we estimate the additional amount of the subsidy to the LPG sector to be 148.89 billion in year 2011, 137.07 billion in year 2012, 128.535 billion in year 2013, and 113.966 billion in year 2014, respectively, under the proposed future reduction plan.

7 Concluding Remarks

We have numerically examined the impact of the reduced subsidy to the petroleum refinery sector on the Indonesian economy by using a static CGE model with the latest Input-Output table of Indonesia of year 2008.

We have also explored the effect of the proposed future reduction policy by the Ministry of Finance of Indonesia by taking into account several possibilities over the conversion policy with the subsidy to the LPG sector.

By comparing several simulation results with our successful benchmark model, we have obtained the following results. First, we have estimated the pure effect of the reduction policy to be a welfare loss of 295,631.95 billion rupiah to the Indonesian economy in two years between 2008 and 2010. Second, when we also take into account more realistic aspects such as an actual expansion of government expenditure in the two years, then the magnitude of a welfare loss shrinks to 68,064.43 billion rupiah. Third, when we further consider the effect of the actual ongoing conversion policy as well, then our simulation result suggests that the actually implemented reduction policy still has a negative effect on welfare with a welfare loss of 28,417.78 billion rupiah. Fourth, we have also explored the effect of the proposed future reduction plan by the Ministry of Finance of Indonesia, and we have estimated a welfare loss of the plan in different years. While we have estimated the welfare loss to decrease over time, the range of the welfare loss in the next 3 years is between approximately 40,000 billion and 79,000 billion rupiah based on our different assumption on the future conversion policy to the LPG sector. Finally we have also estimated the additional amount of the subsidy to the LPG sector in the future conversion policy to neutralize the negative effect of the proposed future reduction plan on the Indonesian economy. Our estimated additional amount of the subsidy to the LPG sector are between approximately 114 billion and 149 billion rupiah in different years. In our effect-neutral future conversion policy, we have further obtained the result that such a further increase in the subsidy to the LPG sector stimulates the economy, thus resulting in an expansion of government expenditure with no negative effect on welfare. Our simulation results suggest that the Indonesian government could offset the negative effect of the proposed future reduction policy for the petroleum refinery sector on the Indonesian economy, by providing the LPG sector with a slightly more subsidy in the future conversion policy. This also implies that a huge amount of welfare loss cannot be avoidable if the proposed future reduction policy is only implemented. Since a further increase in the subsidy to the LPG sector can be expected to stimulate the economy, the increase in the subsidy to the LPG sector eventuates in an increase in tax revenue, thus resulting in more government expenditure.

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Appendix: Model

We employ the conventional static CGE model[8]. We assume that the Indonesian economy consists of 66 different production sectors, a representative consumer, the government, and the investment firm sector. We allow all 66 production sectors to have intermediate production processes, and we assume that they maximize their profit. We assume that households maximize their utility over 66 different consumption goods. We assume that the government determines its tax revenue, the amount of the subsidy, and its consumption in order to satisfy its budget constraint. We also assume that the economy is fully competitive, so that all prices are determined in the relevant markets in order to equate the amount of demand to the amount of supply at its fully competitive price level in equilibrium. Note that the model is static and thus we only investigate the short-run effect. For simplicity we then assume that factor inputs are not mobile among different sectors in the short-run. All parameter values are presented in Table 6 and 7.

<**Consumer**>

Utility of a representative consumer is given by:

$$U\left(X_1, X_2, \cdots, X_{66}\right) = \prod_{i=1}^{66} X_i^{\alpha_i}, \tag{1}$$

where X_i denotes consumption of good i. $\sum_{i=1}^{66} \alpha_i = 1$ is assumed. i denotes each sector. We determine the parameter value of each α_i by using the actual social accounting matrix.

We assume that a representative consumer maximizes (1) with respect to her/his consumption goods subject to her/his budget constraint such that:

$$\sum_{i=1}^{66} p_i X_i = I\left(1 - \tau^I\right) - S^I,$$

where p_i and I denote the price of good i and income, respectively. τ^I is the propor-

[8] In terms of the conventional static model, see Ballard, Fullerton, Shoven, and Whalley (1985), Shoven and Whalley (1992), and Scarf and Shoven (2008). In particular, the model used in this paper is similar to Hosoe, Ogawa, and Hashimoto (2004). Regarding the dynamic model, it is conventional to employ an overlapping generations model In terms of computable overlapping generations model within a general equilibrium framework, see Auerbach and Kotlikoff (1987), Kato (2002)and Ihori, Kato, Kawade, and Bessho (2011).

tional income tax rate, and it is calculated by using the actual social accounting matrix. S^I denotes savings, and we assume that a representative consumer saves the constant amount relative to her/his disposal income. Savings are assumed to be given by

$$S^I = s^I \left(1 - \tau^I\right) I,$$

where the constant ratio, s^I, is given exogenously[9]. The value of s^I has been calculated by using the actual SAM. Then income is given by

$$I = \sum_{i=1}^{66} r_i \overline{K_i} + \sum_{i=1}^{66} w_i \overline{L}_i,$$

where r and w denote the rental cost and the wage rate, respectively. $\overline{K}$ and $\overline{L}$ are endowments of capital and labor, respectively. The factor payments change as r or w changes. Note that the amounts of $r_i\overline{K}_i$ and $w_i\overline{L_i}$ are both obtained from the actual social accounting matrix.

The first order conditions yield the demand functions such that:

$$X_i = X_i \left(p_i, Y; \alpha_i\right) = \frac{\alpha_i I \left(1 - \tau^I\right) \left(1 - s^I\right)}{p_i}, \quad i = 1, 2, \cdots, 66. \tag{2}$$

Note that α_i can be calculated by using (2) and the actual social accounting matrix so that:

$$\alpha_i = \frac{p_i X_i}{I \left(1 - \tau^I\right) \left(1 - s^I\right)} = \frac{p_i X_i}{\left(1 - s^I\right) \left(1 - \tau^I\right) \left(\sum_{j=1}^{66} r_j \overline{K_j} + \sum_{j=1}^{66} w_j \overline{L}_j\right)}, \quad i = 1, 2, \cdots, 66,$$

where both the values of the denominator and the numerator can be obtained from the actual social accounting matrix.

<Production Sector>

Following the conventional assumption, we describe the multiple decisions by each

[9] The assumption that the ratio is exogenously given is made only for the model to be consistent to the actual social accounting matrix, and this assumption is very common in the literature.

firm by the tree structure, where each firm is assumed to make a decision over several different items. In the tree structure, the optimal behavior of each firm which makes a decision over different items is described as if the firm always makes a decision over two different items at different steps. Each firm makes a decision over different items; exports of its own product, the amount of imported goods and intermediate goods used for its production, and labor and capital. This assumption simplifies a complicated decision over several items by each firm. The detailed tree structure is given by Figure 3.

At step 1, a firm, i, is assumed to use labor and capital to produce its composite goods, Y_i. Then, the firm is assumed to produce its domestic goods, Z_i, by using its own Y_i and $X_{i,j}$ at the second step. $X_{i,j}$ denotes the final consumption goods produced by firm j used by firm i for its production. Thus, $X_{i,j}$ is the amount of the final consumption goods produced by firm j for the intermediate production process of firm i. At the third step, the firm is assumed to decompose its domestic goods, Z_i, into exported goods, E_i, and final domestic goods, D_i. This step is concerned about its optimal decision over the amount of its product to be exported. At the final step (the fourth step), the firm is assumed to produce its final consumption goods, Q_i, by using its final domestic goods, D_i, and imported goods, M_i. This step corresponds to its optimal decision over how much it uses imported goods, M_i, and its own goods, D_i, to produce its final consumption goods, Q_i, which are consumed by domestic households. The assumption of this tree structure in terms of different decisions can incorporate firm's complicated decisions over exports of its own product, the amount of imported goods and intermediate goods which the firm uses in its production process, and the amount of factor inputs into the model in a tractable way.

Note that all market clearing conditions are used to determine all prices endogenously in their corresponding markets, and also that at each step the firm is assumed to determine the amount of relevant variables in order to maximize its profit.

By the assumption of the above tree structure, all decision making processes can be simplified, and the optimal behavior about all different decisions can be incorporated as follows:

Step 1: The production of composite goods

Each firm is assumed to produce its composite goods by using capital and labor. Each firm is assumed to maximize its profit given by:

$$\pi_i = p_i^Y Y_i\left(K_i, L_i\right) - r_i K_i - w_i L_i, \tag{3}$$

where Y_i and p_i^Y denote the composite goods produced by firm i and its price, respectively. K_i and L_i denote capital and labor used by firm i in order to produce its composite goods, respectively. The production technology is given by:

$$Y_i\left(K_i, L_i\right) = K_i^{\beta_{K,i}} L_i^{\beta_{L,i}},\ \ i = 1, 2, \cdots, 66, \tag{4}$$

where $\beta_{K,i} + \beta_{L,i} = 1$ is assumed for all $i = 1, 2, \cdots, 66$. Each firm is assumed to maximize (3) with respect to labor and capital subject to (4), and the first order conditions yield the demand functions such that:

$$K_i = K_i\left(p_i^Y, r_i, w_i; \beta_{K,i}, \beta_{L,i}\right) = \frac{\beta_{K,i}}{r_i} p_i^Y Y_i, \tag{5a}$$

$$L_i = L_i\left(p_i^Y, r_i, w_i; \beta_{K,i}, \beta_{L,i}\right) = \frac{\beta_{L,i}}{w_i} p_i^Y Y_i,\ \ i = 1, 2, \cdots, 66. \tag{5b}$$

Note that $\beta_{K,i}$ and $\beta_{L,i}$ can be calculated by using (5a), (5b), and the actual social accounting matrix so that:

$$\beta_{K,i} = \frac{r_i K_i}{p_i^Y Y_i},$$
$$\beta_{L,i} = \frac{w_i L_i}{p_i^Y Y_i},\ \ i = 1, 2, \cdots, 66,$$

where $r_i K_i, w_i L_i$, and $p_i^Y Y_i$ can be obtained from the actual social accounting matrix. The estimated values of $\beta_{K,i}$ and $\beta_{L,i}$ are given in Table 7.

Step 2: The production of domestic goods

Each firm is assumed to produce domestic goods, Z_i, by using intermediate goods and its own composite goods, which production has been described at step 1. The optimal behavior of each firm in terms of the production of domestic goods can be described such that:

$$\begin{aligned} \underset{Y_i, X_{i,j}}{Max}\ \pi_i &= p_i^Z Z_i - \left(p_i^Y Y_i - \sum_j^{66} p_j^X X_{i,j} \right), \\ st \quad Z_i &= \min \left(\frac{X_{i,j}}{ax_{i,j}}, \frac{Y_i}{ay_i} \right),\ i = 1, 2, \cdots, 66, \end{aligned}$$

where $X_{i,j}$ and p_j^X denote intermediate good j used by firm i and its price, respectively. p_i^Z is the price of Z_i. $ax_{i,j}$ denotes the amount of intermediate good j used for producing one unit of a domestic good of firm i , and ay_i denotes the amount of its own composite good for producing one unit of its domestic good. The estimated values of ay_i are given in Table 7[10]. Note that the production function at this step is assumed to be the Leontief type. Using $ax_{i,j}$ and ay_i, and assuming that the market is fully competitive, the zero-profit condition can be written by:

$$p_i^Z = p_i^Y ay_i + \sum_j^{66} p_j^X ax_{i,j},\ i = 1, 2, \cdots, 66.$$

Step 3: Decomposition of Domestic Goods into Exported Goods and Final Domestic Goods

The optimal decision made by firm i in terms of the amount of exports of its own goods is described as the decomposition of Z_i $(i = 1, 2, \cdots, 66)$ into exported goods, E_i, and final domestic goods, D_i. Each firm is assumed to maximize its profit such that:

$$\pi_i = p_i^e E_i + p_i^d D_i - (1 + \tau_i^p - \tau_i^s)\, p_i^Z Z_i, \tag{6}$$

where p_i^e and p_i^d denote the price when the domestic goods are sold abroad, and the price when the domestic goods are sold domestically, respectively. Note that p_i^e is

[10] The estimated values of $ax_{i,j}$ are not presented in Table 7, since the number of the estimated values reach 4,356. The estimated values are given upon request.

measured in the domestic currency. τ_i^p and τ_i^s are the tax rates of a production tax imposed on the production of Z_i and the subsidy rate, respectively. The values of τ_i^p and τ_i^s are calculated by using the actual social accounting matrix, and the calculated values are given in Table 6. The decomposition is assumed to follow the Cobb-Douglas technology such that:

$$Z_i = E_i^{\kappa_i^e} D_i^{\kappa_{ii}^d}, \; i = 1, 2, \cdots, 66, \tag{7}$$

where $\kappa_i^d + \kappa_i^e = 1$ ($i = 1, 2, \cdots, 66$) is assumed. Each firm is assumed to maximize (6) with respect to E_i and D_i subject to (7), and the first order conditions yield

$$E_i = E_i \left(p_i^e, p_i^d, p_i^Z; \tau_i^p, \tau_i^s, \kappa_i^d, \kappa_i^e\right) = \frac{\kappa_i^e \left(1 + \tau_i^p - \tau_i^s\right) p_i^Z Z_i}{p_i^e}, \tag{8a}$$

$$D_i = D_i \left(p_i^e, p_i^d, p_i^Z; \tau_i^p, \tau_i^s, \kappa_i^d, \kappa_i^e\right) = \frac{\kappa_i^d \left(1 + \tau_i^p - \tau_i^s\right) p_i^Z Z_i}{p_i^d}, \; i = 1, 2, \cdots, 66. \tag{8b}$$

Note that κ_i^e and κ_i^d can be calculated by using (8a), (8b), and the actual social accounting matrix so that:

$$\begin{aligned} \kappa_i^e &= \frac{p_i^e E_i}{\left(1 + \tau_i^p - \tau_i^s\right) p_i^Z Z_i}, \\ \kappa_i^d &= \frac{p_i^d D_i}{\left(1 + \tau_i^p - \tau_i^s\right) p_i^Z Z_i}, \; i = 1, 2, \cdots, 66, \end{aligned}$$

where $p_i^e E_i$, $p_i^d D_i$, $p_i^Z Z_i$, $\tau_i^s p_i^Z Z_i$, and $\tau_i^p p_i^Z Z_i$ can be obtained from the actual social accounting matrix. The estimated values of κ_i^e and κ_i^d are given in Table 7.

Step 4: The Production of the final goods

Denote the final consumption goods by Q_i ($i = 1, 2, \cdots, 66$). The final consumption goods are assumed to be produced by using the final domestic goods, D_i, and the imported goods, M_i. This step corresponds to the optimal decision making behavior of each firm in terms of the amount of imported goods which are used in its production process. The production technology at this final step is given by the following Cobb-Douglas function:

$$Q_i = M_i^{\gamma_i^m} D_i^{\gamma_i^d}, \ i = 1, 2, \cdots, 66, \tag{9}$$

where $\gamma_i^m + \gamma_i^d = 1$ ($i = 1, 2, \cdots, 66$) is assumed. Each firm is assumed to maximize its profit with respect to M_i and D_i subject to (9). Its profit is given by:

$$\pi_i = p_i^Q Q_i - (1 + \tau_i^m - \tau_i^{ms}) \, p_i^m M_i - p_i^d D_i, \ i = 1, 2, \cdots, 66,$$

where p_i^Q, τ_i^m and τ_i^{ms} denote the price of its final consumption goods, Q_i, the import tariff rate, and import subsidy rate, respectively. The import tariff rate and the import subsidy rate are both calculated by using the actual social accounting matrix, and they are given in Table 6. Then, the first order conditions yield

$$M_i = M_i \left(p_i^m, p_i^d, p_i^Q; \tau_i^m, \tau_i^{ms}, \gamma_i^m, \gamma_i^d \right) = \frac{\gamma_i^m p_i^Q Q_i}{(1 + \tau_i^m - \tau_i^{ms}) \, p_i^m{}_i}, \tag{10a}$$

$$D_i = D_i \left(p_i^m, p_i^d, p_i^Q; \tau_i^m, \tau_i^{ms}, \gamma_i^m, \gamma_i^d \right) = \frac{\gamma_i^d p_i^Q Q_i}{p_i^d}, \ i = 1, 2, \cdots, 66. \tag{10b}$$

Note that γ_i^m and γ_i^d can be calculated by using (10a), (10b), and the actual social accounting matrix so that:

$$\gamma_i^m = \frac{(1 + \tau_i^m - \tau_i^{ms}) \, p_i^m M_i}{p_i^Q Q_i},$$
$$\gamma_i^d = \frac{p_i^d D_i}{p_i^Q Q_i}, \ i = 1, 2, \cdots, 66,$$

where $p_i^m M_i$, $p_i^d D_i$, $p_i^Q Q_i$, $\tau_i^m p_i^m M_i$ and $\tau_i^{ms} p_i^m M_i$ can be obtained from the actual social accounting matrix. The estimated values of γ_i^m and γ_i^d are given in Table 7.

<**The Government**>

The government is assumed to impose several taxes to satisfy its budget constraint. Its budget constraint is given by:

$$\sum_{i=1}^{66} p_i^Q X_i^g + S^g + Sub = T^I + T^p + T^m,$$

where the left hand side is the total government expenditure, and the right hand side is the total government revenue. X_i^g and S^g denote government consumption of final consumption good i, and government savings, respectively. Sub denotes the total amount of the subsidy such that:

$$Sub = \sum_{i=1}^{66} \left(\tau_i^s \left(p_i^Z Z_i \right) + \tau_i^{ms} \left(p_i^m M_i \right) \right).$$

The total tax revenue is given by:

$$T^I = \tau^I I = \tau^I \left(\sum_{i=1}^{66} r_i \overline{K_i} + \sum_{i=1}^{66} w_i \overline{L}_i \right),$$
$$T^p = \sum_{i=1}^{66} \tau_i^p \left(p_i^Z Z_i \right),$$
$$T^m = \sum_{i=1}^{66} \tau_i^m \left(p_i^m M_i \right),$$

where T^I, T^p, and T^m denote the total income tax revenue, the total production tax revenue, and the total import tariff revenue, respectively. The government is assumed to save the constant amount relative to the total amount of tax revenue, and the government savings are assumed to be given by

$$S^g = s^g \left(T^I + T^p + T^m \right),$$

where the constant ratio, s^g, is given exogenously, and .its value has been calculated by using the actual SAM.

<Equilibrium Conditions>

There are two factor inputs, labor and capital. Since the model is static and thus the short-run effect is explored, it is assumed that each factor cannot move among different sectors (industries) in the short-run. This implies the equilibrium conditions of factor markets such that

$$\overline{K}_i = K_i, \tag{11a}$$

$$\overline{L}_i = L_{i,}\ i = 1, 2, \cdots, 66, \tag{11b}$$

where the total amount of endowments is given by:

$$\overline{K} = \sum_{i=1}^{66} \overline{K}_i,$$
$$\overline{L} = \sum_{i=1}^{66} \overline{L}_i.$$

Note that r_i and w_i $(i = 1, 2, \cdots, 66)$ are determined in order to satisfy (11a) and (11b), respectively.

In terms of the market clearing condition of good i $(i = 1, 2, \cdots, 66)$, a private investment sector is introduced in order to close the economy in this paper[11]. Denoting the amount of good i consumed by the private investment sector by X_i^s, the market clearing condition of good i is given by:

$$Q_i = X_i + X_i^g + X_i^s + \sum_j^{66} X_{i,j},\ \ i = 1, 2, \cdots, 66, \tag{12}$$

where the left hand side is the total supply, and the right hand side is the total demand for good i. p_i^Q $(i = 1, 2, \cdots, 66)$ is determined in order to satisfy (12). Note that the budget constraint of the private investment sector is given by:

$$\sum_{i=1}^{66} p_i^Q X_i^s = S^g + S^I + S^f,$$

where the left hand side is the total amount of its consumption, and the right hand side is the total amount of its income. S^f denotes the total amount of savings by the

[11] This is also a conventional assumption in the literature.

foreign sector, or the deficits in the current account, and it is given by subtracting exports from imports[12]. Since both the amount of exports and the amount of imports can be obtained from the actual social accounting matrix, S^f can be calculated from the actual social accounting matrix, and thus it is exogenously given in the model. Furthermore, the foreign trade balance is given by

$$\sum_{i=1}^{66} p_i^{w,e} E_i + S^f = \sum_{i=1}^{66} p_i^{w,m} M_i,$$

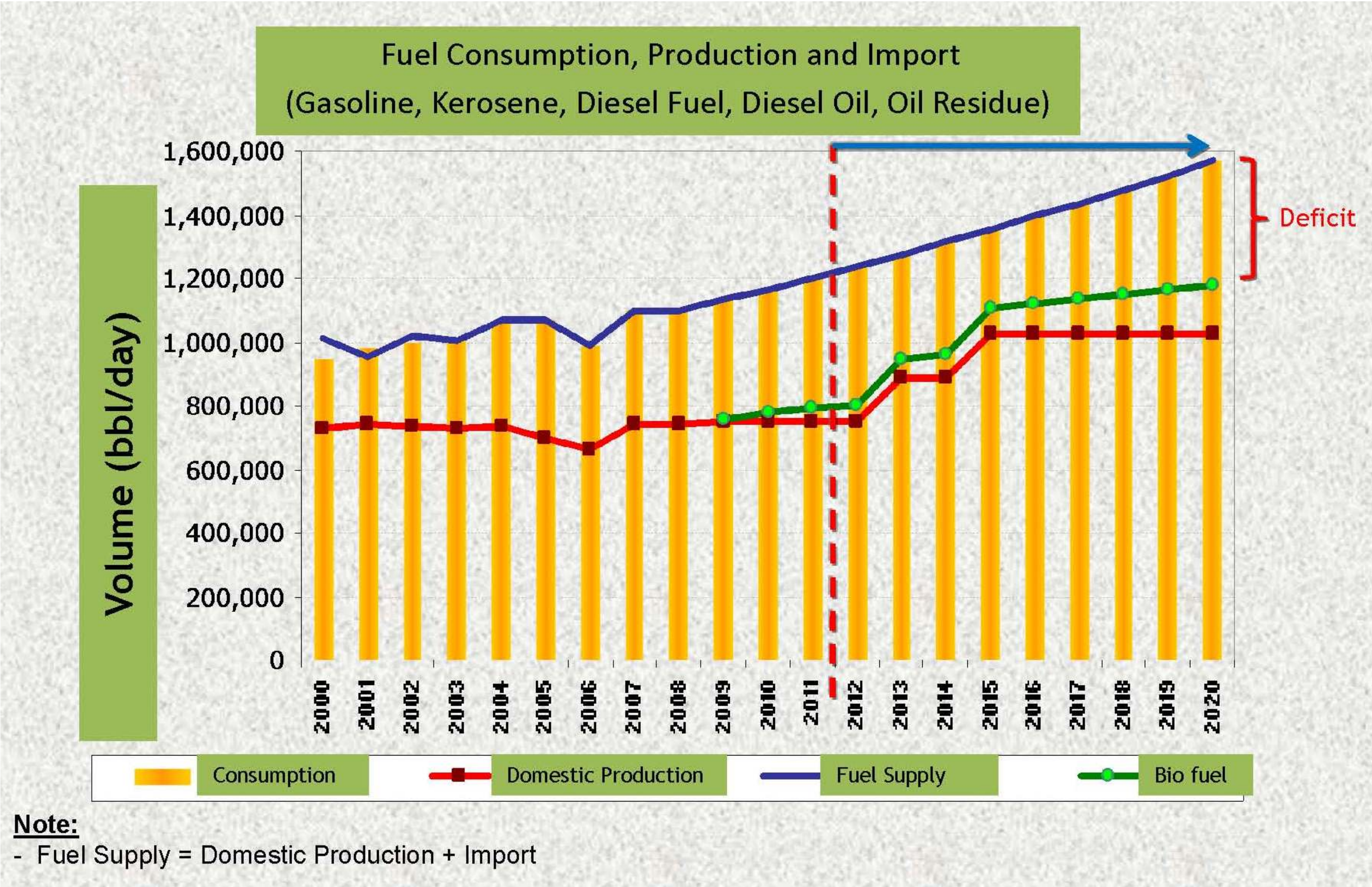
where $p_i^{w,e}$ and $p_i^{w,m}$ denote the world price of export goods, and import goods of good i, respectively, and both of them are assumed to be given exogenously. Since p_i^e and p_i^m are both measured in the domestic currency, they are also expressed such that:

$$\begin{aligned} p_i^e &= \varepsilon p_i^{w,e}, \\ p_i^m &= \varepsilon p_i^{w,m}, \ i = 1, 2, \cdots, 66, \end{aligned}$$

where ε denotes the exchange rate. Note that the exogeneity assumption on the world prices implies that the exchange rate is endogenously determined within the model.

[12]The FDI is assumed to be negligible in this paper.

Figure 1:



✓ Source: Ministry of Finance of Indonesia

Table 1-1: Economic Values in the Benchmark Model
Final Domestic Consumption Goods, $i = 1, 2, \cdots, 66$

Unit: One billion Rupiah

i	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
MODEL	169856.9	23181.81	75495.27	29301.85	189820.6	25279.42	36070.84	10443.7	18600.61	77515.99	3955.219	4243.885	1006.108	2715.314	13050.98
ACTUAL	169856.9	23181.81	75495.27	29301.85	189820.6	25279.42	36070.84	10443.7	18600.61	77515.99	3955.219	4243.885	1006.108	2715.314	13050.98

i	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
MODEL	9771.237	22001.78	79725.82	83587.52	108594.5	44390.47	9871.421	181119	160574	364236.1	90318.76	133900.3	78531.7	239444.1	107780.1
ACTUAL	9771.237	22001.78	79725.82	83587.52	108594.5	44390.47	9871.421	181119	160574	364236.1	90318.76	133900.3	78531.7	239444.1	107780.1

i	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
MODEL	30401.32	178185.2	18814.84	118232	28943.11	186671.7	140991	131360.6	76517.59	384244.5	395612.8	174784.4	54077.64	36649.28	126795.8
ACTUAL	30401.32	178185.2	18814.84	118232	28943.11	186671.7	140991	131360.6	76517.59	384244.5	395612.8	174784.4	54077.64	36649.28	126795.8

i	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
MODEL	33293.46	252853.9	626266.3	338365.1	30740.02	124490.7	1243976	848385.8	322565	5991.71	248607.6	78203.15	79225.28	53862.56	181714.1
ACTUAL	33293.46	252853.9	626266.3	338365.1	30740.02	124490.7	1243976	848385.8	322565	5991.71	248607.6	78203.15	79225.28	53862.56	181714.1

i	61	62	63	64	65	66
MODEL	276761.1	332828.7	272982.4	329246.5	296310.3	3874.718
ACTUAL	276761.1	332828.7	272982.4	329246.5	296310.3	3874.718

i=41: Petroleum Refinery Sector
i=51: LPG Sector

Table 1-2: Economic Values in the Benchmark Model (Continued)

Capital Income, $rK_i; i = 1,2,\cdots,66$

Unit: One billion Rupiah

i	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
MODEL	103400.3	9819.214	48916.11	22196.86	126930.6	1305.485	11298.29	4634.259	10980.19	29072.6	1062.658	4911.48	542.414	1884.862	511.516
ACTUAL	103400.3	9819.214	48916.11	22196.86	126930.6	1305.485	11298.29	4634.259	10980.19	29072.6	1062.658	4911.48	542.414	1884.862	511.516

i	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
MODEL	11165.67	11255.03	35889.1	23481.75	26496.16	25336.67	5940.84	107352.8	156097.8	271783.3	39359.71	28595.5	43943.57	42033.31	19991.9
ACTUAL	11165.67	11255.03	35889.1	23481.75	26496.16	25336.67	5940.84	107352.8	156097.8	271783.3	39359.71	28595.5	43943.57	42033.31	19991.91

i	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
MODEL	3710.997	37197.21	2843.623	20231.15	8992.068	64396.24	51210.22	36322.03	22650.06	50778.16	272167.6	37799.26	15200.47	9719.815	10785.44
ACTUAL	3710.997	37197.21	2843.623	20231.15	8992.068	64396.25	51210.22	36322.03	22650.06	50778.16	272167.6	37799.26	15200.47	9719.815	10785.44

i	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
MODEL	10461.97	68074	92411.76	66354.29	5328.204	112506.8	267444.9	362486.6	91603.03	911.209	63488.62	15088.45	10682.73	16938.73	117766.9
ACTUAL	10461.97	68074	92411.76	66354.29	5328.204	112506.8	267444.9	362486.6	91603.03	911.209	63488.62	15088.45	10682.73	16938.73	117766.9

i	61	62	63	64	65	66
MODEL	124091.1	167405.5	18744.51	43665.88	83937.39	1527.993
ACTUAL	124091.1	167405.5	18744.51	43665.88	83937.39	1527.993

i=41: Petroleum Refinery Sector
i=51: LPG Sector

Table 1-3: Economic Values in the Benchmark Model (Continued)
Labor Income, wL_i; $i = 1,2,\cdots,66$

Unit: One billion Rupiah

i	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
MODEL	21865.56	1810.716	7731.414	2928.34	30037.99	176.585	12173.4	2441.192	2683.275	13456.63	744.498	1679.83	304.662	518.754	88.568
ACTUAL	21865.56	1810.716	7731.414	2928.34	30037.99	176.585	12173.4	2441.192	2683.275	13456.63	744.498	1679.83	304.662	518.754	88.568

i	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
MODEL	2158.134	5214.59	12432.01	9840.712	21128.79	7110.591	1745.677	26451.27	32741.56	27333.3	23424.21	10541.11	23538.74	10564.29	9417.451
ACTUAL	2158.134	5214.59	12432.01	9840.712	21128.79	7110.591	1745.677	26451.27	32741.56	27333.3	23424.21	10541.11	23538.74	10564.29	9417.451

i	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
MODEL	1957.179	17141.02	2024.185	8758.06	2526.806	33403.95	20355.39	15752.33	8684.796	26487.03	61257.55	21394.87	8692.499	4127.232	2225.738
ACTUAL	1957.179	17141.02	2024.185	8758.06	2526.806	33403.95	20355.39	15752.33	8684.796	26487.03	61257.55	21394.87	8692.499	4127.232	2225.738

i	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
MODEL	5089.327	39618.42	38499.42	33995.72	3746.667	14863.2	167855.9	151338.6	53632.13	1582.698	45471.62	8620.54	10036.11	11542.38	29923.87
ACTUAL	5089.327	39618.42	38499.42	33995.72	3746.667	14863.2	167855.9	151338.6	53632.13	1582.698	45471.62	8620.54	10036.11	11542.38	29923.87

i	61	62	63	64	65	66
MODEL	51739.65	33569.51	138982.3	133851.3	54672.48	528.986
ACTUAL	51739.65	33569.51	138982.3	133851.3	54672.48	528.986

i=41: Petroleum Refinery Sector
i=51: LPG Sector

Table 1-4: Economic Values in the Benchmark Model (Continued)

Unit: One billion Rupiah

savings					
private sector		government sector		foreign sector	
model	actual	Model	actual	model	actual
1,751,059.00000000	1,751,059.00000000	-102,746.43746847	-102,746.43750000	-139,481.93200000	-139,481.93750000

tax and subsidy									
individual wage income tax		production tax		import tariff		(general) subsidy		import subsidy	
model	actual	model	actual	model	actual	model	actual	model	actual
250,484.9999036100	250,485.0000000000	196,685.3799999990	196,685.3800000000	107,841.3260000000	107,841.3260000000	199,701.9749999990	199,701.9750000000	41,189.4959999998	41,189.4960000000

✓ The above figures indicate the total amount.

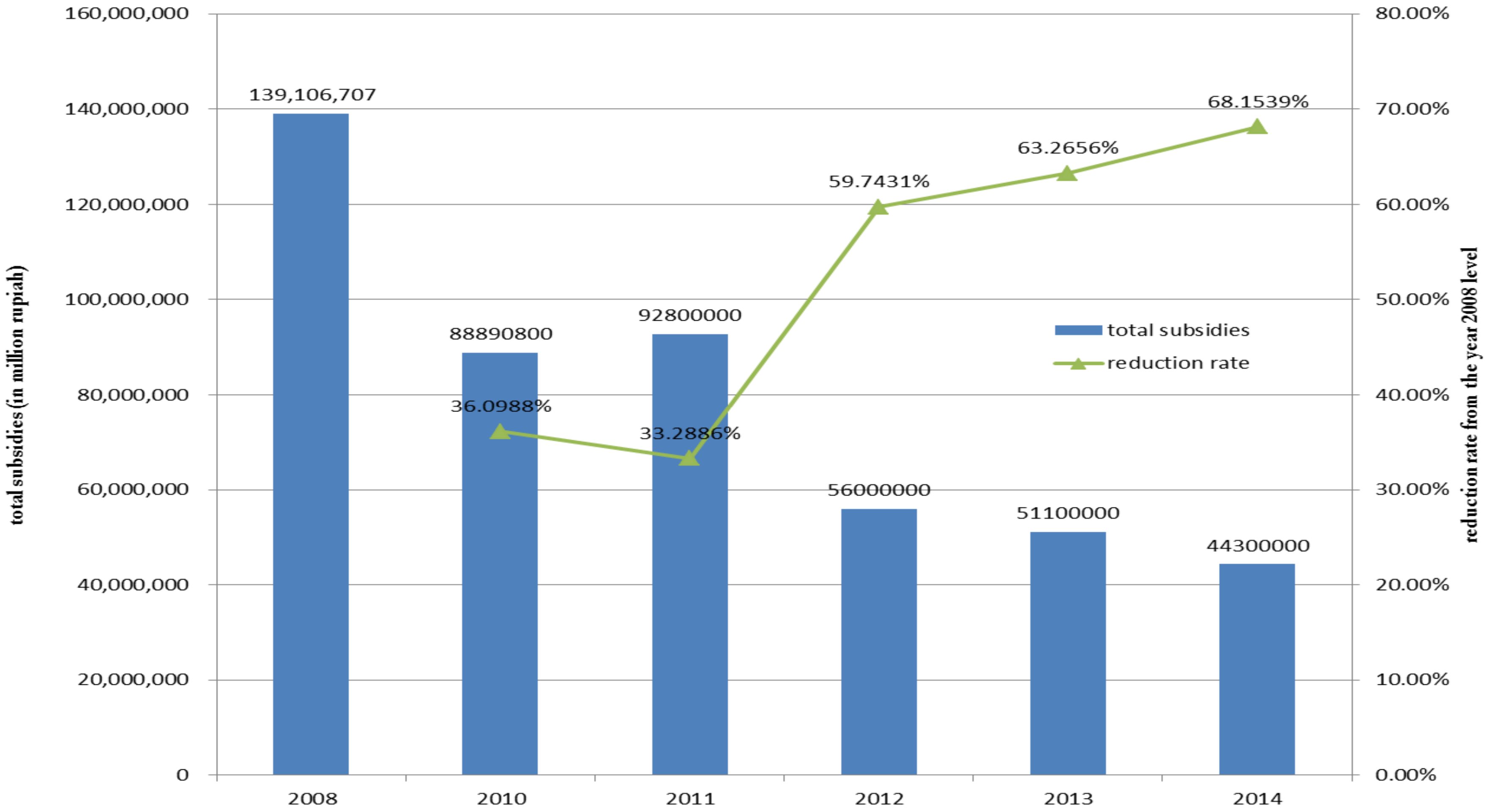
Table 2: The Effect of the Actual Reduction of the Subsidy to the Petroleum Refinery Sector by 36.1%

Unit: One billion Rupiah

	welfare gain	government deficits	Income							
			i=41 (petroleum refinery)	i=55 (railways)	i=56 (road transport)	i=57 (water transport)	i=58 (air transport)	i=51 (LPG)	i=63 (Defense)	i=64 (gov. services)
Pure Effect:	-295631.946	-4936.2846	261,376.7804	2,133.2563	92,907.0165	20,247.2900	17,902.1377	108,832.4997	155,553.0351	164,936.8792
			(-21.6085%)	(-14.4613%)	(-14.7331%)	(-14.6008%)	(-13.5949%)	(-14.554%)	(-1.378%)	(-0.7087%)
with expanding expenditure:	-68064.4315	0	297,060.9650	2,420.5381	105,567.8876	23,006.7408	20,279.0224	123,606.2550	172,100.5031	184,354.7350
			(-10.9062%)	(-2.9419%)	(-3.1133%)	(-2.9620%)	(-2.1228%)	(-2.9549%)	(9.1130%)	(3.8518%)
overall effect:	-28417.78	0	303,677.0476	2,469.4332	107,730.8944	23,473.8239	20,668.5565	129,369.9807	173,236.0623	186,592.3226
			(-8.922%)	(-0.9813%)	(-1.128%)	(-0.9919%)	(-0.2427%)	(1.570%)	(9.833%)	(5.112%)

✓ The figures in the parentheses indicate the relative change from the benchmark (year 2008) level.

Figure 2: The Proposed Future Reduction Plan of the Subsidy to the Petroleum Refinery Sector



✓ Based on the data from the Ministry of Finance of Indonesia, we have calculated above figures.

Table 3: Scenarios on the Future Subsidies to the Petroleum Refinery (*i* = 41) and LPG (*i* = 51) Sectors

Unit: One million rupiah

		year 2008		year 2011		year 2012		year 2013		year 2014	
	unit: million	i=41	i=51	i=41	i=51	i=41	i=51	i=41	i=51	i=41	i=51
Scenario I:	total subsidies	139,106,707	83,906,513	92,800,000	83,906,513	56,000,000	81,086,513	51,100,000	81,086,513	44,300,000	81,086,513
	reduction rate (from the 2008 level)			33.2886%	0.0000%	59.7431%	3.3609%	63.2656%	3.3609%	68.1539%	3.3609%
Scenario II:	total subsidies	139106707	83906513	92800000	83906513	56000000	83906513	51100000	83906513	44300000	83906513
	reduction rate (from the 2008 level)			33.2886%	0.0000%	59.7431%	0.0000%	63.2656%	0.0000%	68.1539%	0.0000%

- ✓ The figures of future subsidies to the petroleum refinery sectors are all given based on the proposed plan by the Ministry of Finance of Indonesia.
- ✓ The figures of future subsidies to the LPG sector depend on a different assumption in each scenario. In Scenario I, the conversion policy is assumed to end in year 2011, but in Scenario II it is assumed to continue until year 2014. Note that the figure of the subsidies to the LPG sector (i =51) in year 2008 already includes the subsidies through the conversion policy. The annual amount of additional subsidies to the LPG sector through the conversion policy is assumed to be 2,820,000 billion rupiah in both scenarios.

Table 4: The Effect of the Proposed Future Reduction Plan of the Subsidy to the Petroleum Refinery Sector (i=41)

Unit: One billion Rupiah

		year 2011	year 2012	year 2013	year 2014
Scenario I:	welfare gain		-78761.7063	-73844.41233	-66457.64969
	government expenditure		493702.4169	499085.6219	506610.4479
			(18.432%)	(19.723%)	(21.528%)
Scenario II:	welfare gain	-68100.96806	-51026.1681	-46547.69605	-39707.50901
	government expenditure	456224.2628	494750.122	500097.372	507579.2459
		(9.441%)	(18.683%)	(19.966%)	(21.761%)

✓ The figures in the parentheses indicate the relative change from the benchmark (year 2008) level.

Table 5: The Effect-Neutral Conversion Policy for the Proposed Future Reduction Plan

Unit: One billion Rupiah

	year 2011	year 2012	year 2013	year 2014
welfare gain	0	0	0	0
increasing rate of subsidies to LPG	5.2798%	4.8607%	4.5580%	4.0413%
corresponding additional amount of subsidies to LPG	148.8901	137.0704	128.5353	113.9658
government expenditure	460807.7875	497793.3672	502811.9318	509815.8312
	(10.541%)	(19.413%)	(20.617%)	(22.297%)

- ✓ Increasing rate indicates the endogenously calculated increasing rate of subsidies to the LPG sector from the year 2008 level, in order to neutralize the negative effect of the proposed future reduction plan on welfare.
- ✓ The figures in the parentheses indicate the relative change from the benchmark (year 2008) level.

Table 6: Calculated Rates

$$TAUP(i) = \tau_i^p;\ i = 1,2,\cdots,66$$ (Production Tax Rate)

TAUP(1)	TAUP(2)	TAUP(3)	TAUP(4)	TAUP(5)	TAUP(6)	TAUP(7)	TAUP(8)	TAUP(9)	TAUP(10)	TAUP(11)	TAUP(12)	TAUP(13)	TAUP(14)	TAUP(15)
0.011021	0.010784	0.008108	0.008323	0.011684	0.011577	0.007399	0.014230	0.012070	0.009332	0.006918	0.020258	0.015348	0.006912	0.129031

TAUP(16)	TAUP(17)	TAUP(18)	TAUP(19)	TAUP(20)	TAUP(21)	TAUP(22)	TAUP(23)	TAUP(24)	TAUP(25)	TAUP(26)	TAUP(27)	TAUP(28)	TAUP(29)	TAUP(30)
0.008315	0.016682	0.010863	0.012855	0.008818	0.036395	0.022894	0.009006	0.032097	0.036702	0.029738	0.024430	0.009768	0.004160	0.012806

TAUP(31)	TAUP(32)	TAUP(33)	TAUP(34)	TAUP(35)	TAUP(36)	TAUP(37)	TAUP(38)	TAUP(39)	TAUP(40)	TAUP(41)	TAUP(42)	TAUP(43)	TAUP(44)	TAUP(45)
0.022411	0.013819	0.117723	0.600629	0.013845	0.010144	0.012600	0.009781	0.002809	0.020054	0.004323	0.015524	0.031658	0.030596	0.014832

TAUP(46)	TAUP(47)	TAUP(48)	TAUP(49)	TAUP(50)	TAUP(51)	TAUP(52)	TAUP(53)	TAUP(54)	TAUP(55)	TAUP(56)	TAUP(57)	TAUP(58)	TAUP(59)	TAUP(60)
0.013741	0.017939	0.013836	0.012393	0.024859	0.012493	0.013311	0.020136	0.020672	0.009257	0.008237	0.008882	0.011283	0.011286	0.006861

TAUP(61)	TAUP(62)	TAUP(63)	TAUP(64)	TAUP(65)	TAUP(66)
0.006072	0.022627	0.000000	0.005360	0.017774	0.015636

$$SUBR(i) = \tau_i^s;\ i = 1,2,\cdots,66$$ ((General) Subsidy Rate)

SUBR(1)	SUBR(2)	SUBR(3)	SUBR(4)	SUBR(5)	SUBR(6)	SUBR(7)	SUBR(8)	SUBR(9)	SUBR(10)	SUBR(11)	SUBR(12)	SUBR(13)	SUBR(14)	SUBR(15)
0.00361474	0.00384571	0.00298029	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000

SUBR(16)	SUBR(17)	SUBR(18)	SUBR(19)	SUBR(20)	SUBR(21)	SUBR(22)	SUBR(23)	SUBR(24)	SUBR(25)	SUBR(26)	SUBR(27)	SUBR(28)	SUBR(29)	SUBR(30)
0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00053629	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000

SUBR(31)	SUBR(32)	SUBR(33)	SUBR(34)	SUBR(35)	SUBR(36)	SUBR(37)	SUBR(38)	SUBR(39)	SUBR(40)	SUBR(41)	SUBR(42)	SUBR(43)	SUBR(44)	SUBR(45)
0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.23614366	0.00000000	0.19434097	0.00000000	0.00000000	0.00000000	0.00000000

SUBR(46)	SUBR(47)	SUBR(48)	SUBR(49)	SUBR(50)	SUBR(51)	SUBR(52)	SUBR(53)	SUBR(54)	SUBR(55)	SUBR(56)	SUBR(57)	SUBR(58)	SUBR(59)	SUBR(60)
0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.40765791	0.00000000	0.00000000	0.00000000	0.10056601	0.00000000	0.01136293	0.00000000	0.00000000	0.00079159

SUBR(61)	SUBR(62)	SUBR(63)	SUBR(64)	SUBR(65)	SUBR(66)
0.00000000	0.00000000	0.00000000	0.00000000	0.00014256	0.00000000

i=41: Petroleum Refinery Sector
i=51: LPG Sector

$$SUBIMP(i) = \tau_i^{ms};\ i = 1,2,\cdots,66$$ (Import Subsidy Rate)

SUBIMP(1)	SUBIMP(2)	SUBIMP(3)	SUBIMP(4)	SUBIMP(5)	SUBIMP(6)	SUBIMP(7)	SUBIMP(8)	SUBIMP(9)	SUBIMP(10)	SUBIMP(11)	SUBIMP(12)	SUBIMP(13)	SUBIMP(14)	SUBIMP(15)
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

SUBIMP(16)	SUBIMP(17)	SUBIMP(18)	SUBIMP(19)	SUBIMP(20)	SUBIMP(21)	SUBIMP(22)	SUBIMP(23)	SUBIMP(24)	SUBIMP(25)	SUBIMP(26)	SUBIMP(27)	SUBIMP(28)	SUBIMP(29)	SUBIMP(30)
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

SUBIMP(31)	SUBIMP(32)	SUBIMP(33)	SUBIMP(34)	SUBIMP(35)	SUBIMP(36)	SUBIMP(37)	SUBIMP(38)	SUBIMP(39)	SUBIMP(40)	SUBIMP(41)	SUBIMP(42)	SUBIMP(43)	SUBIMP(44)	SUBIMP(45)
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.205184	0.000000	0.000000	0.000000	0.000000

SUBIMP(46)	SUBIMP(47)	SUBIMP(48)	SUBIMP(49)	SUBIMP(50)	SUBIMP(51)	SUBIMP(52)	SUBIMP(53)	SUBIMP(54)	SUBIMP(55)	SUBIMP(56)	SUBIMP(57)	SUBIMP(58)	SUBIMP(59)	SUBIMP(60)
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

SUBIMP(61)	SUBIMP(62)	SUBIMP(63)	SUBIMP(64)	SUBIMP(65)	SUBIMP(66)
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

$$TAUM(i) = \tau_i^{m};\ i = 1,2,\cdots,66$$ (Import Tariff Rate)

TAUM(1)	TAUM(2)	TAUM(3)	TAUM(4)	TAUM(5)	TAUM(6)	TAUM(7)	TAUM(8)	TAUM(9)	TAUM(10)	TAUM(11)	TAUM(12)	TAUM(13)	TAUM(14)	TAUM(15)
0.001001502	0.064806604	0.022767977	0.136129097	0.188315989	0.077949645	0.004024959	0.038780589	0.105289421	0.084536739	0.00000000	0.014066679	0.000238152	202.2352941	0.23779266

TAUM(16)	TAUM(17)	TAUM(18)	TAUM(19)	TAUM(20)	TAUM(21)	TAUM(22)	TAUM(23)	TAUM(24)	TAUM(25)	TAUM(26)	TAUM(27)	TAUM(28)	TAUM(29)	TAUM(30)
0.031335942	1.237528604	0.066217692	0.050406143	0.400227491	0.040853659	0.15507155	0.071879262	0.100831514	1.76181E-06	0.133977544	0.140881474	0.034979082	0.0947284	0.083094075

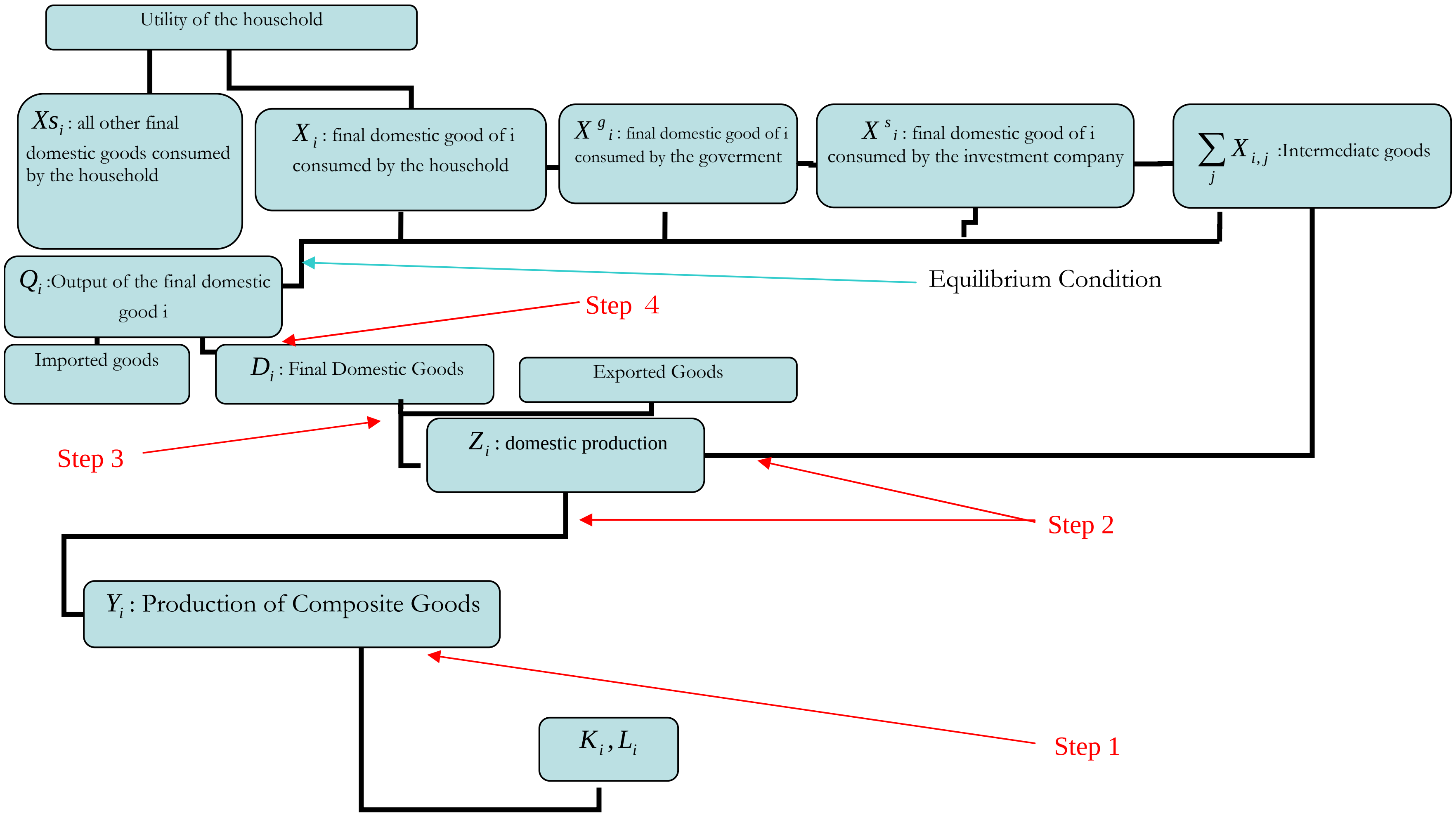
TAUM(31)	TAUM(32)	TAUM(33)	TAUM(34)	TAUM(35)	TAUM(36)	TAUM(37)	TAUM(38)	TAUM(39)	TAUM(40)	TAUM(41)	TAUM(42)	TAUM(43)	TAUM(44)	TAUM(45)
0.693249241	0.095420655	0.093905594	0.125198695	0.52234314	0.248673096	0.068734239	0.136514661	0.048403154	0.142778424	0.007848744	0.166511185	0.157586974	0.094824076	0.098742183

TAUM(46)	TAUM(47)	TAUM(48)	TAUM(49)	TAUM(50)	TAUM(51)	TAUM(52)	TAUM(53)	TAUM(54)	TAUM(55)	TAUM(56)	TAUM(57)	TAUM(58)	TAUM(59)	TAUM(60)
0.096590866	0.095403675	0.122658645	0.140203097	0.145207066	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000

TAUM(61)	TAUM(62)	TAUM(63)	TAUM(64)	TAUM(65)	TAUM(66)
0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00004418

i=41: Petroleum Refinery Sector
i=51: LPG Sector

Figure 3:



Utility of the household
Xs_i : all other final domestic goods consumed by the household
X_i : final domestic good of i consumed by the household
$X^g{}_i$: final domestic good of i consumed by the goverment
$X^s{}_i$: final domestic good of i consumed by the investment company
$\sum_j X_{i,j}$:Intermediate goods
Q_i :Output of the final domestic good i
Equilibrium Condition
Step 4
Imported goods
D_i : Final Domestic Goods
Exported Goods
Step 3
Z_i : domestic production
Step 2
Y_i : Production of Composite Goods
K_i, L_i
Step 1

Table 7: Parameter Values

$$ALPHA(i) = \alpha_i ;\ i = 1,2,\cdots,66$$

ALPHA(1)	ALPHA(2)	ALPHA(3)	ALPHA(4)	ALPHA(5)	ALPHA(6)	ALPHA(7)	ALPHA(8)	ALPHA(9)	ALPHA(10)	ALPHA(11)	ALPHA(12)	ALPHA(13)	ALPHA(14)	ALPHA(15)
0.000000	0.002684	0.012634	0.006316	0.044487	0.000231	0.000000	0.000020	0.002460	0.000000	0.000226	0.000206	0.000042	0.000001	0.000000

ALPHA(16)	ALPHA(17)	ALPHA(18)	ALPHA(19)	ALPHA(20)	ALPHA(21)	ALPHA(22)	ALPHA(23)	ALPHA(24)	ALPHA(25)	ALPHA(26)	ALPHA(27)	ALPHA(28)	ALPHA(29)	ALPHA(30)
0.000382	0.000734	0.007215	0.016520	0.019510	0.000639	0.001025	0.035299	0.000000	0.000000	0.000336	0.030979	0.009601	0.062265	0.020709

ALPHA(31)	ALPHA(32)	ALPHA(33)	ALPHA(34)	ALPHA(35)	ALPHA(36)	ALPHA(37)	ALPHA(38)	ALPHA(39)	ALPHA(40)	ALPHA(41)	ALPHA(42)	ALPHA(43)	ALPHA(44)	ALPHA(45)
0.004995	0.029126	0.004754	0.032312	0.000137	0.030998	0.010541	0.006598	0.002021	0.025885	0.030358	0.020897	0.002181	0.000000	0.000000

ALPHA(46)	ALPHA(47)	ALPHA(48)	ALPHA(49)	ALPHA(50)	ALPHA(51)	ALPHA(52)	ALPHA(53)	ALPHA(54)	ALPHA(55)	ALPHA(56)	ALPHA(57)	ALPHA(58)	ALPHA(59)	ALPHA(60)
0.000000	0.007012	0.043892	0.036600	0.004833	0.012219	0.000000	0.119309	0.078272	0.001213	0.032286	0.006576	0.014732	0.002981	0.030487

ALPHA(61)	ALPHA(62)	ALPHA(63)	ALPHA(64)	ALPHA(65)	ALPHA(66)
0.017364	0.031809	0.004424	0.042217	0.037552	0.000896

$$AY(i) = ay_i ;\ i = 1,2,\cdots,66$$

AY(1)	AY(2)	AY(3)	AY(4)	AY(5)	AY(6)	AY(7)	AY(8)	AY(9)	AY(10)	AY(11)	AY(12)	AY(13)	AY(14)	AY(15)
0.743010702	0.794876264	0.761029755	0.867329998	0.874580965	0.844749067	0.655499284	0.687409701	0.732796118	0.55233487	0.460064994	0.615867825	0.842519654	0.822158031	0.842570829

AY(16)	AY(17)	AY(18)	AY(19)	AY(20)	AY(21)	AY(22)	AY(23)	AY(24)	AY(25)	AY(26)	AY(27)	AY(28)	AY(29)	AY(30)
0.685909037	0.756009981	0.64343273	0.404948605	0.444150728	0.762980597	0.787956557	0.734283986	0.73715708	0.840467413	0.768439218	0.297168189	0.346553563	0.221810728	0.287264165

AY(31)	AY(32)	AY(33)	AY(34)	AY(35)	AY(36)	AY(37)	AY(38)	AY(39)	AY(40)	AY(41)	AY(42)	AY(43)	AY(44)	AY(45)
0.251488062	0.31923395	0.304375559	0.393760879	0.297759687	0.384596887	0.41461869	0.358227603	0.487970358	0.276553982	0.661764872	0.260768515	0.47318076	0.391707058	0.248509247

AY(46)	AY(47)	AY(48)	AY(49)	AY(50)	AY(51)	AY(52)	AY(53)	AY(54)	AY(55)	AY(56)	AY(57)	AY(58)	AY(59)	AY(60)
0.235796061	0.472349803	0.277727591	0.398045478	0.307343355	0.618824462	0.354584965	0.524631684	0.439744138	0.364318454	0.411079537	0.316945392	0.297586583	0.565092001	0.779403968

AY(61)	AY(62)	AY(63)	AY(64)	AY(65)	AY(66)
0.653494634	0.694488569	0.57295418	0.539818641	0.485499558	0.539926772

$$GAMMAM(i) = \gamma_i^M ;\ i = 1,2,\cdots,66$$

GAMMAM(1)	GAMMAM(2)	GAMMAM(3)	GAMMAM(4)	GAMMAM(5)	GAMMAM(6)	GAMMAM(7)	GAMMAM(8)	GAMMAM(9)	GAMMAM(10)	GAMMAM(11)	GAMMAM(12)	GAMMAM(13)	GAMMAM(14)	GAMMAM(15)
9.41499E-05	0.366335976	0.011391693	0.005838675	0.045001098	0.932300498	0.002614078	0.000479619	0.000119082	0.001274047	0	0.011703899	0.008349004	0.001272413	0.942348165
GAMMAM(16)	GAMMAM(17)	GAMMAM(18)	GAMMAM(19)	GAMMAM(20)	GAMMAM(21)	GAMMAM(22)	GAMMAM(23)	GAMMAM(24)	GAMMAM(25)	GAMMAM(26)	GAMMAM(27)	GAMMAM(28)	GAMMAM(29)	GAMMAM(30)
0.093068871	0.000444419	0.053082264	0.002996656	0.003888226	0.009767367	0.018921491	0.001136783	0.038131822	0.353739639	0.078602117	0.133551221	0.167014197	0.006333667	0.066484269
GAMMAM(31)	GAMMAM(32)	GAMMAM(33)	GAMMAM(34)	GAMMAM(35)	GAMMAM(36)	GAMMAM(37)	GAMMAM(38)	GAMMAM(39)	GAMMAM(40)	GAMMAM(41)	GAMMAM(42)	GAMMAM(43)	GAMMAM(44)	GAMMAM(45)
0.250563528	0.082690497	0.064457899	0.036766809	0.232873672	0.083917707	0.029356328	0.191479735	0.394808057	0.405746452	0.407292958	0.109886965	0.13521219	0.025600779	0.684370932
GAMMAM(46)	GAMMAM(47)	GAMMAM(48)	GAMMAM(49)	GAMMAM(50)	GAMMAM(51)	GAMMAM(52)	GAMMAM(53)	GAMMAM(54)	GAMMAM(55)	GAMMAM(56)	GAMMAM(57)	GAMMAM(58)	GAMMAM(59)	GAMMAM(60)
0.647787515	0.166772728	0.385482508	0.363028045	0.463380781	0	0	0	0.076876258	0.011557469	0.00540763	0.485548326	0.213365034	0.218629459	0.056596627
GAMMAM(61)	GAMMAM(62)	GAMMAM(63)	GAMMAM(64)	GAMMAM(65)	GAMMAM(66)									
0.035561073	0.15277899	0.006754489	0.036613488	0.036111329	0.011684463									

$$GAMMAD(i) = \gamma_i^D ;\ i = 1,2,\cdots,66$$

GAMMAD(1)	GAMMAD(2)	GAMMAD(3)	GAMMAD(4)	GAMMAD(5)	GAMMAD(6)	GAMMAD(7)	GAMMAD(8)	GAMMAD(9)	GAMMAD(10)	GAMMAD(11)	GAMMAD(12)	GAMMAD(13)	GAMMAD(14)	GAMMAD(15)
0.9999059	0.633664	0.9886083	0.9941613	0.9549989	0.0676995	0.9973859	0.9995204	0.9998809	0.998726	1	0.9882961	0.991651	0.9987276	0.0576518
GAMMAD(16)	GAMMAD(17)	GAMMAD(18)	GAMMAD(19)	GAMMAD(20)	GAMMAD(21)	GAMMAD(22)	GAMMAD(23)	GAMMAD(24)	GAMMAD(25)	GAMMAD(26)	GAMMAD(27)	GAMMAD(28)	GAMMAD(29)	GAMMAD(30)
0.9069311	0.9995556	0.9469177	0.9970033	0.9961118	0.9902326	0.9810785	0.9988632	0.9618682	0.6462604	0.9213979	0.8664488	0.8329858	0.9936663	0.9335157
GAMMAD(31)	GAMMAD(32)	GAMMAD(33)	GAMMAD(34)	GAMMAD(35)	GAMMAD(36)	GAMMAD(37)	GAMMAD(38)	GAMMAD(39)	GAMMAD(40)	GAMMAD(41)	GAMMAD(42)	GAMMAD(43)	GAMMAD(44)	GAMMAD(45)
0.7494365	0.9173095	0.9355421	0.9632332	0.7671263	0.9160823	0.9706437	0.8085203	0.6051919	0.5942535	0.592707	0.890113	0.8647878	0.9743992	0.3156291
GAMMAD(46)	GAMMAD(47)	GAMMAD(48)	GAMMAD(49)	GAMMAD(50)	GAMMAD(51)	GAMMAD(52)	GAMMAD(53)	GAMMAD(54)	GAMMAD(55)	GAMMAD(56)	GAMMAD(57)	GAMMAD(58)	GAMMAD(59)	GAMMAD(60)
0.3522125	0.8332273	0.6145175	0.636972	0.5366192	1	1	1	0.9231237	0.9884425	0.9945924	0.5144517	0.786635	0.7813705	0.9434034
GAMMAD(61)	GAMMAD(62)	GAMMAD(63)	GAMMAD(64)	GAMMAD(65)	GAMMAD(66)									
0.9644389	0.847221	0.9932455	0.9633865	0.9638887	0.9883155									

$$KAPPAE(i) = \kappa_i^E;\ i = 1,2,\cdots,66$$

KAPPAE(1)	KAPPAE(2)	KAPPAE(3)	KAPPAE(4)	KAPPAE(5)	KAPPAE(6)	KAPPAE(7)	KAPPAE(8)	KAPPAE(9)	KAPPAE(10)	KAPPAE(11)	KAPPAE(12)	KAPPAE(13)	KAPPAE(14)	KAPPAE(15)
0.000000	0.002929	0.002430	0.002697	0.001637	0.035699	0.002654	0.000067	0.014431	0.003864	0.000000	0.615889	0.022659	0.078775	0.064283

KAPPAE(16)	KAPPAE(17)	KAPPAE(18)	KAPPAE(19)	KAPPAE(20)	KAPPAE(21)	KAPPAE(22)	KAPPAE(23)	KAPPAE(24)	KAPPAE(25)	KAPPAE(26)	KAPPAE(27)	KAPPAE(28)	KAPPAE(29)	KAPPAE(30)
0.547555	0.007059	0.005545	0.000106	0.000002	0.002673	0.029433	0.015531	0.415832	0.362006	0.010856	0.140073	0.667309	0.000786	0.029647

KAPPAE(31)	KAPPAE(32)	KAPPAE(33)	KAPPAE(34)	KAPPAE(35)	KAPPAE(36)	KAPPAE(37)	KAPPAE(38)	KAPPAE(39)	KAPPAE(40)	KAPPAE(41)	KAPPAE(42)	KAPPAE(43)	KAPPAE(44)	KAPPAE(45)
0.011274	0.052824	0.015296	0.033566	0.433896	0.334274	0.217007	0.276457	0.059380	0.198779	0.425434	0.325108	0.102265	0.019792	0.246794

KAPPAE(46)	KAPPAE(47)	KAPPAE(48)	KAPPAE(49)	KAPPAE(50)	KAPPAE(51)	KAPPAE(52)	KAPPAE(53)	KAPPAE(54)	KAPPAE(55)	KAPPAE(56)	KAPPAE(57)	KAPPAE(58)	KAPPAE(59)	KAPPAE(60)
0.824609	0.092200	0.194681	0.155554	0.454883	0.000000	0.000000	0.150869	0.116677	0.047890	0.074759	0.460838	0.114860	0.174281	0.100777

KAPPAE(61)	KAPPAE(62)	KAPPAE(63)	KAPPAE(64)	KAPPAE(65)	KAPPAE(66)
0.013953	0.047153	0.015069	0.040583	0.016945	0.010302

$$KAPPAD(i) = \kappa_i^D;\ i = 1,2,\cdots,66$$

KAPPAD(1)	KAPPAD(2)	KAPPAD(3)	KAPPAD(4)	KAPPAD(5)	KAPPAD(6)	KAPPAD(7)	KAPPAD(8)	KAPPAD(9)	KAPPAD(10)	KAPPAD(11)	KAPPAD(12)	KAPPAD(13)	KAPPAD(14)	KAPPAD(15)
1.000000	0.997071	0.997570	0.997303	0.998363	0.964301	0.997346	0.999933	0.985569	0.996136	1.000000	0.384111	0.977341	0.921225	0.935717

KAPPAD(16)	KAPPAD(17)	KAPPAD(18)	KAPPAD(19)	KAPPAD(20)	KAPPAD(21)	KAPPAD(22)	KAPPAD(23)	KAPPAD(24)	KAPPAD(25)	KAPPAD(26)	KAPPAD(27)	KAPPAD(28)	KAPPAD(29)	KAPPAD(30)
0.452445	0.992941	0.994455	0.999894	0.999998	0.997327	0.970567	0.984469	0.584168	0.637994	0.989144	0.859927	0.332691	0.999214	0.970353

KAPPAD(31)	KAPPAD(32)	KAPPAD(33)	KAPPAD(34)	KAPPAD(35)	KAPPAD(36)	KAPPAD(37)	KAPPAD(38)	KAPPAD(39)	KAPPAD(40)	KAPPAD(41)	KAPPAD(42)	KAPPAD(43)	KAPPAD(44)	KAPPAD(45)
0.988726	0.947176	0.984704	0.966434	0.566104	0.665726	0.782993	0.723543	0.940620	0.801221	0.574566	0.674892	0.897735	0.980208	0.753206

KAPPAD(46)	KAPPAD(47)	KAPPAD(48)	KAPPAD(49)	KAPPAD(50)	KAPPAD(51)	KAPPAD(52)	KAPPAD(53)	KAPPAD(54)	KAPPAD(55)	KAPPAD(56)	KAPPAD(57)	KAPPAD(58)	KAPPAD(59)	KAPPAD(60)
0.175391	0.907800	0.805319	0.844446	0.545117	1.000000	1.000000	0.849131	0.883323	0.952110	0.925241	0.539162	0.885140	0.825719	0.899223

KAPPAD(61)	KAPPAD(62)	KAPPAD(63)	KAPPAD(64)	KAPPAD(65)	KAPPAD(66)
0.986047	0.952847	0.984931	0.959417	0.983055	0.989698

$$BETA(i, j) = \beta_j^i, i = 1(capital), 2(labour), j = 1,2,\cdots,66$$

BETA(1 1)	BETA(2 1)	BETA(1 2)	BETA(2 2)	BETA(1 3)	BETA(2 3)	BETA(1 4)	BETA(2 4)	BETA(1 5)	BETA(2 5)	BETA(1 6)	BETA(2 6)	BETA(1 7)	BETA(2 7)
0.825446843	0.174553157	0.844305512	0.155694488	0.863517174	0.136482826	0.883450068	0.116549932	0.808636965	0.191363035	0.880852456	0.119147544	0.481358244	0.518641756
BETA(1 8)	BETA(2 8)	BETA(1 9)	BETA(2 9)	BETA(1 10)	BETA(2 10)	BETA(1 11)	BETA(2 11)	BETA(1 12)	BETA(2 12)	BETA(1 13)	BETA(2 13)	BETA(1 14)	BETA(2 14)
0.654977188	0.345022812	0.803616842	0.196383158	0.683591114	0.316408886	0.588027818	0.411972182	0.745144744	0.254855256	0.640336877	0.359663123	0.784177672	0.215822328
BETA(1 15)	BETA(2 15)	BETA(1 16)	BETA(2 16)	BETA(1 17)	BETA(2 17)	BETA(1 18)	BETA(2 18)	BETA(1 19)	BETA(2 19)	BETA(1 20)	BETA(2 20)	BETA(1 21)	BETA(2 21)
0.85240733	0.14759267	0.838024198	0.161975802	0.683381338	0.316618662	0.742720884	0.257279116	0.704682299	0.295317701	0.556350414	0.443649586	0.780856939	0.219143061
BETA(1 22)	BETA(2 22)	BETA(1 23)	BETA(2 23)	BETA(1 24)	BETA(2 24)	BETA(1 25)	BETA(2 25)	BETA(1 26)	BETA(2 26)	BETA(1 27)	BETA(2 27)	BETA(1 28)	BETA(2 28)
0.772891025	0.227108975	0.802313444	0.197686556	0.826616878	0.173383122	0.908619916	0.091380084	0.626907509	0.373092491	0.730658666	0.269341334	0.651186522	0.348813478
BETA(1 29)	BETA(2 29)	BETA(1 30)	BETA(2 30)	BETA(1 31)	BETA(2 31)	BETA(1 32)	BETA(2 32)	BETA(1 33)	BETA(2 33)	BETA(1 34)	BETA(2 34)	BETA(1 35)	BETA(2 35)
0.799148832	0.200851168	0.679780441	0.320219559	0.65470744	0.34529256	0.684549607	0.315450393	0.584169096	0.415830904	0.697885555	0.302114445	0.78063776	0.21936224
BETA(1 36)	BETA(2 36)	BETA(1 37)	BETA(2 37)	BETA(1 38)	BETA(2 38)	BETA(1 39)	BETA(2 39)	BETA(1 40)	BETA(2 40)	BETA(1 41)	BETA(2 41)	BETA(1 42)	BETA(2 42)
0.658447013	0.341552987	0.715570296	0.284429704	0.69750313	0.30249687	0.722839137	0.277160863	0.657193177	0.342806823	0.816277956	0.183722044	0.638564335	0.361435665
BETA(1 43)	BETA(2 43)	BETA(1 44)	BETA(2 44)	BETA(1 45)	BETA(2 45)	BETA(1 46)	BETA(2 46)	BETA(1 47)	BETA(2 47)	BETA(1 48)	BETA(2 48)	BETA(1 49)	BETA(2 49)
0.636190116	0.363809884	0.70194136	0.29805864	0.828936499	0.171063501	0.672739407	0.327260593	0.632115048	0.367884952	0.705911911	0.294088089	0.661228538	0.338771462
BETA(1 50)	BETA(2 50)	BETA(1 51)	BETA(2 51)	BETA(1 52)	BETA(2 52)	BETA(1 53)	BETA(2 53)	BETA(1 54)	BETA(2 54)	BETA(1 55)	BETA(2 55)	BETA(1 56)	BETA(2 56)
0.587138263	0.412861737	0.883306925	0.116693075	0.61439099	0.38560901	0.705466741	0.294533259	0.630722119	0.369277881	0.36537409	0.63462591	0.582676958	0.417323042
BETA(1 57)	BETA(2 57)	BETA(1 58)	BETA(2 58)	BETA(1 59)	BETA(2 59)	BETA(1 60)	BETA(2 60)	BETA(1 61)	BETA(2 61)	BETA(1 62)	BETA(2 62)	BETA(1 63)	BETA(2 63)
0.636402087	0.363597913	0.515604757	0.484395243	0.594735556	0.405264444	0.797388339	0.202611661	0.70574182	0.29425818	0.832966744	0.167033256	0.118841632	0.881158368
BETA(1 64)	BETA(2 64)	BETA(1 65)	BETA(2 65)	BETA(1 66)	BETA(2 66)								
0.24598114	0.75401886	0.605565764	0.394434236	0.742833544	0.257166456								

Table 8

	Sector	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
1	Paddy	5,937,343	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	152,111	1,296,163	0	36,525	0	0	0	0	0	0	0	0	158,903,056	0	0	11,139	0	0	0	0	0	352,355
2	Pea crops	0	917,759	0	0	10,059	0	0	0	0	0	0	0	0	0	0	0	0	199,960	0	23,006	0	0	0	0	0	0	709,587	7,950	0	76,445	0	10,432,780	685	0	0	0	0	0
3	Maize	0	0	4,110,274	0	0	0	0	0	0	0	0	0	0	0	0	0	158,085	1,196,990	0	1,472,471	0	0	593,053	0	0	0	8,191	1,721,893	0	4,853,764	7,151	22,990,913	5,772	181,983	0	0	0	0
4	Root crops	0	0	0	1,310,139	0	0	0	0	0	0	0	0	0	0	0	0	4,839	810,354	0	117,397	0	0	16,212	0	0	0	208,054	0	0	2,071,821	0	2,999,988	267	0	0	0	0	0
5	Vegetables and fruits	0	0	0	0	5,173,186	0	0	0	0	0	0	0	0	0	0	0	0	1,551,790	0	58,381	0	0	3,595	0	0	0	4,810,368	0	0	1,009,378	156	988,681	2,471,064	0	0	0	0	0
6	Other farm food crops	0	0	0	0	0	10,436	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,551	0	0	0	5,423	0	0	22,023,412	0	1,987,353	259,387	0	0	0	0	0
7	Rubber	0	0	0	0	0	0	4,298,109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,214,538	0	0
8	Sugar cane	0	0	0	0	0	0	0	316,018	0	0	0	0	0	0	0	0	0	279,198	0	0	0	0	0	0	0	0	0	0	0	0	9,641,703	6,021	1,889	0	0	0	0	0
9	Coconut	0	0	0	0	23,870	0	0	0	579,452	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	347,572	8,184,056	0	400,423	378,799	34,605	541	0	0	0	6,760	0
10	Palm oil	0	0	0	0	0	0	0	0	0	3,626,045	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	62,806,759	0	0	0	241,221	0	0	0	0	0	0
11	Tobacco	0	0	0	0	0	0	0	0	0	0	9,610	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,374,926	0	0	0	0
12	Coffe	0	0	0	0	0	0	0	0	0	0	0	641,604	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,473,924	1,045	0	0	0	0	0
13	Tea	0	0	0	0	0	0	0	0	0	0	0	0	1,798	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	819,879	39,353	0	0	0	0	0
14	Cloves	0	0	0	0	0	0	0	0	0	0	0	0	0	25,960	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	390	0	136	1,474	2,644,053	0	0	0	0
15	Fiber crop product	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,782	0	0	0	0	0	0	0	0	0	0	0	0	32	0	0	0	426	0	0	5,247,158	5,135,339	1,355,492	0
16	Other estate crops	0	0	0	0	0	0	0	0	0	2,744	0	0	0	0	0	383,469	873	42,728	0	0	0	0	0	0	0	0	40,842	9,308	0	147,577	139,899	3,631,646	256,233	155	29,013	309	35,587	43
17	Other crops	7,934,879	371,810	2,843,694	395,503	269,677	3,967	269,948	20,146	176,900	1,540,234	11,206	29,532	772	4,372	1,485	340,514	50,176	1,222,152	0	566,690	1,880,207	195,468	664,149	0	0	0	4	5	0	96	2,974	8,263	716	314	3	2	6,401	0
18	Livestock	5,723,427	235,236	2,499,995	594,883	3,265,201	11,773	82,189	322	24,003	1,225,270	102,844	15,348	484	7,455	10,537	235,003	2,042,498	986,909	33,401,056	0	0	0	0	0	0	0	5,596,964	0	0	32,380	0	1,338	111,483	0	19,674	151,402	11	0
19	Slaughtering	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,939	93,620	0	0	0	0	0	0	0	1,057,315	0	0	244,238	0	279,448	0	0	3,015	6,530,017	0	0
20	Poultry & products	0	3,906	49,852	13,321	1,802,555	0	0	0	0	0	97,662	0	0	6,550	0	0	220	391,361	8,211,483	2,434,798	0	0	124,586	0	0	0	172,612	0	0	1,869,232	0	266,518	17,338	0	0	0	0	0
21	Timber	3,113	1,154	2,502	487	334	1,030	11,557	1,897	16,264	1,890	1,089	2,555	103	1,033	0	7,293	14,476	48,737	0	0	889,482	692	10,031	16,719	0	110,069	59,200	129,994	0	0	6,657	227,883	0	897	4	22,581	16,061,980	1,736,338
22	Other forest product	0	324	0	0	0	0	1,673	0	0	0	0	0	0	0	0	0	0	160	0	0	88,419	637	119,372	0	0	0	0	0	0	0	0	13,691	0	0	0	60,015	4,981,820	13,397
23	Fisheries	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,864	0	7,054	0	0	0	0	0	19,608,850	0	0	0	41,368,757	1,841	0	49,966	0	590,704	0	0	0	66	0	0
24	Coal & metal ore mining	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29,539,135	847	0	0	0	0	1,494	370,369	64,468	22	5,021	16,968	457,678	108,784	176,542
25	Petroleum & natural gas minin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53,753,966	0	0	0	0	0	3,901	208,452	0	0	90,074	0	0	215,098
26	Other quarrying	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	1,961	0	0	0	0	0	0	0	545,622	39,186	0	0	0	141,476	251,391	0	0	0	44	0	36,587
27	Processing & preserving of foo	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69,271	0	0	515,854	0	0	0	10,890,779	8,387	0	1,088,483	213	8,218,243	330,134	0	0	3,226	0	0
28	Oil & fats	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12,071	1,342,806	0	2,518	0	0	118	0	0	0	2,505,199	41,393,372	0	682,807	34	6,061,973	1,851	0	0	0	12,412	0
29	Rice milling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,164	487,866	0	473,135	0	0	249,086	0	0	0	96	0	13,242,905	3,212,373	0	5,412,159	71,092	0	0	0	0	0
30	All flour industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6,781	0	0	0	0	26	0	0	0	431,451	2,674	0	22,922,178	653,925	6,726,170	54,359	8,854	225,643	994,424	808,322	808,174
31	Sugar refinery	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,700	0	0	0	0	0	0	0	0	2,287,937	0	0	1,776,298	533,011	5,239,262	1,661,791	40,326	0	0	0	0
32	Food products not elsewhere c	0	0	0	0	0	0	0	0	0	0	0	12,384	2,529	0	0	0	376,143	12,463,491	88	45,374,188	0	0	6,723,630	0	0	0	857,360	4,559	0	953,003	22,672	7,759,827	636,555	8,927	2,142	172,518	0	0
33	Beverages industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,804	0	0	181,212	7,390	31,567	400,398	10	0	164	23	28
34	Cigarettes	0	0	0	0	0	0	0	0	0	0	1,542	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10,737,621	0	0	0	0
35	Spinning industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,660	0	0	0	0	4,292	0	0	0	1,371	0	0	3,415,128	22,631,687	55,515	13,315
36	Textile, wearing apparel &leath	31,382	1,147	1,958	16,500	165,936	3,782	45,248	8,902	27,256	25,321	2,821	6,292	273	5,057	2,364	25,420	50,474	7,179	169	0	93,841	13,415	15,742	147,192	7,613	30,402	52,129	0	145,576	11,367	32,171	6,425	394	408	367,785	51,075,015	605,195	241,623
37	Bamboo, wood & rattan indus	0	0	2,421	688	59,210	795	769	0	3,201	0	14,305	1,090	3,707	1,677	1,205	26,900	6,897	287	0	14,086	0	0	151,847	0	0	85,942	45,908	4,734	8,287	14,401	26,108	53,287	38,284	20,804	13,578	119,355	30,840,144	170,068
38	Paper, paper & carton produc	0	0	0	2,640	29,364	368	7,883	2,326	5,702	64,915	1,751	1,996	19	485	1,611	1,274	11,875	9,617	547	23,336	92,917	55,139	39,163	117,150	53,426	48,557	110,226	519	7,208	90,936	3,912	292,388	199,728	5,882,678	84,362	825,433	333,470	41,008,185
39	Fertilizer & pesticides	18,256,348	961,585	6,475,114	938,943	7,826,638	177,959	3,878,429	1,515,274	2,242,185	13,190,232	1,331,915	1,902,403	90,388	351,781	61,268	3,427,179	450,338	0	0	0	26,600	0	273,041	1,757	0	12,269	0	0	0	1,400	76,295	242,577	3,782	2,828	1,274	5,268	97,748	4,865
40	Chemical industry	0	0	0	0	509	55	1,576,210	1,332	2,314	803,001	10,370	121,763	328	238	295	4,259	98,471	476,811	39,715	1,694,662	66,059	25,660	843,370	4,581,456	27,933	2,381,927	702,364	361,967	29,232	257,611	290,056	1,789,157	551,070	1,255,723	7,009,985	17,293,800	7,892,968	13,446,871
41	Petroleum refinery	11,041	208	1,746	2,620	83,521	609	248,643	100,762	164,803	724,465	40,528	49,465	2,176	1,862	2,614	26,753	731,204	148,935	52,870	264,939	1,250,235	201,478	8,067,065	3,066,620	56,767	3,796,568	478,905	345,298	327,280	292,255	722,225	1,339,958	163,448	2,327,892	1,962,025	4,867,698	4,039,449	6,783,106
42	Rubber & plastic products	13,886	0	0	0	12,547	265	4,237	276	18,422	29,196	3,356	583	25	386	823	2,501	58,071	62,495	5,862	56,613	0	376	498,582	0	0	39,575	234,972	5,113	197,722	66,368	97,571	511,371	84,299	1,394,073	21,569	1,979,408	480,102	547,408
43	Non-metalic mineral products	0	0	0	0	0	0	693	0	0	631	4	191	2	22	0	93	146	1,964	0	401	115	71	89	0	0	0	115,905	206	0	731	11,674	14,882	31,810	23	1	6,225	317,456	3,568
44	Cement industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	Iron & steel basic industries	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21,068	5,757	123
46	Non-ferrous basic metal indus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7,219	12,396	0	9	3,007	10,279	0	0	0	24,832	39,108	81,386
47	Prefabricated metal products	104,419	3,468	28,477	9,353	55,316	1,805	54,220	27,482	132,531	259,801	79,376	11,199	100	4,191	3,136	80,982	30,707	22,017	286	1,416	362,787	51,876	44,893	12,430	184	219,011	423,549	2,042	3,359	5,217	135	20,733	71,076	73	296	588,913	802,816	232,070
48	Machinery, apparatus & access	6,779	18,055	1,339	7,763	143,725	4,515	23,653	23,146	13,284	1,069,616	8,990	5,392	285	2,811	801	19,536	64,831	3,926	5,182	10,358	1,759,293	366,964	669,220	8,459,522	1,064,485	1,028,844	310,483	789	248,064	10,307	653,558	8,631	1,743	221,282	41,940	3,301,013	2,439,363	1,272,108
49	Manufacture & repair of transp	0	0	0	0	0	0	0	496	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,215,182	27	2,459	0	0	0	0	0	0	0	0	0	0	0	219	0
50	Other manufactury industry n	0	0	0	0	1,022	23	47	0	513	499	10	15	0	222	16	107	0	842	898	529	68,264	18,091	3,925	9,342	7,214	1,668	150,656	9,813	91,794	12,942	18,299	34,447	7,230	10,773	357	153,649	175,711	26,703
51	Electricity, gas & water suppli	0	0	0	334	253	0	3,741	515	5,315	6,825	1,306	807	414	773	30	1,683	24,116	185,274	10,860	255,144	9,237	37,081	220,263	299,624	10,048	57,003	363,939	76,742	108,239	255,794	172,232	303,444	132,537	255,323	1,421,383	4,157,016	1,479,303	2,378,066
52	Construction	634,663	26,919	318,845	5,342	59,298	1,789	402,936	495,906	588,495	3,163,503	20,112	64,682	12,779	9,978	96	635,929	36,552	110,088	207	12,334	619,719	463,996	550,766	3,655,499	64,244	4,188,960	33,082	19,325	894	39,392	23,400	100,736	5,281	10,714	3,456	703,074	68,865	39,079
53	Trade	1,881,777	287,747	608,196	320,147	2,608,607	38,839	700,490	199,140	244,964	597,515	171,918	540,494	16,805	63,295	5,111	507,822	317,793	1,479,337	5,923,398	5,269,245	585,676	111,641	4,551,051	3,843,977	287,096	902,020	13,522,513	7,203,980	8,507,240	5,984,055	1,213,866	15,304,571	1,634,145	3,498,854	4,367,124	14,854,820	11,437,756	10,446,908
54	Restaurant & hotels	0	3,445	93,998	1,697	26,798	1,292	24,254	1,423	48,903	24,474	760	1,612	281	1,346	1,533	6,029	24,567	9,669	1,810	4,450	45,901	33,407	307,283	70,784	45,058	674,778	129,035	45,016	6,218	39,639	2,803	170,331	159,761	955,933	32,610	1,641,446	809,018	735,245
55	Railways	2,031	199	416	220	2,774	27	1,178	1,639	168	414	215	376	42	251	4	350	636	4,469	4,755	4,052	6,781	134	6,763	52,429	374	80,951	11,146	7,128	6,353	8,884	1,084	22,742	2,554	5,340	8,550	60,529	23,813	55,773
56	Road transport	506,832	84,675	366,083	154,308	486,579	7,365	255,199	143,595	134,212	529,340	25,068	75,554	2,206	8,283	5,232	148,044	97,458	390,768	723,152	771,753	293,097	130,392	609,005	1,964,890	39,847	819,166	1,813,766	1,007,887	1,076,582	802,103	176,645	2,305,039	266,218	1,889,979	983,250	3,541,789	4,105,337	4,115,947
57	Water transport	132,261	13,349	28,333	15,363	127,673	1,764	52,053	8,042	28,579	26,527	7,343	22,430	762	2,602	310	22,612	24,061	187,918	242,818	243,525	371,933	105,613	504,470	1,810,139	41,444	50,564	659,999	441,295	353,593	324,288	77,946	1,246,225	101,882	1,281,102	343,613	2,620,915	3,488,071	1,363,435
58	Air transport	11,455	1,776	3,983	2,062	17,392	253	19,514	3,862	3,840	39,055	3,760	11,457	3,170	873	1,171	4,684	3,430	19,721	33,560	33,953	85,642	877	44,249	891,115	68,418	140,356	92,543	43,569	47,011	45,309	11,810	135,360	19,876	363,053	38,397	252,944	135,610	129,919
59	Services allied to transport	55,713	6,310	18,251	6,799	61,202	735	25,623	4,089	14,982	27,542	5,670	12,910	626	1,491	166	13,331	15,397	55,085	118,728	112,636	90,506	6,849	132,677	161,979	12,169	77,541	326,329	178,251	197,670	137,408	41,716	477,287	82,176	618,399	202,215	1,029,754	1,589,663	447,549
60	Communication	0	0	0	0	19,171	35	7,635	568	1,478	44,424	121	1,288	57	39	154	13,192	155	6,362	17,724	3,155	13,952	8,005	4,867	837,448	2,205	76,142	119,536	101,672	131,427	233,543	29,779	321,497	72,198	90,232	117,667	869,928	252,997	753,279
61	Financial Services	853,915	19,371	88,371	20,897	99,191	2,088	175,991	273,973	285,129	4,958,764	140,550	559,673	17,009	15,264	0	113,862	131,942	663,420	54,929	0	403,103	92,952	885,374	1,655,104	666,704	531,508	854,575	2,305,752	250,313	387,544	528,362	1,345,398	111,612	2,663,486	702,953	4,509,231	2,806,729	2,929,552
62	Real estate & business services	609,003	36,252	128,142	0	67,827	614	4,375	34,329	3,610	488,270	12,124	3,513	79	0	314	2,821	52,441	157,373	12,318	109,082	317,633	31,059	62,687	2,606,931	303,833	1,142,767	79,595	285,997	7,462	46,104	81,812	212,845	31,504	2,482,770	239,839	1,767,359	1,232,850	894,428
63	Public administration & defen	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
64	Social and community services	0	0	0	0	3,679	0	0	6,760	0	0	2,280	1,636	0	832	0	7,252	16	31,410	6,240	6,307	0	0	58,558	80,057	45,027	46,777	73,664	59,384	2,923	31,993	24,429	80,613	18,216	53,875	89,556	266,051	64,482	762,761
65	Other service	616,146	6,495	115,846	23,234	6,926	197	159,159	25,246	215,688	1,999,249	12,283	12,921	1,113	800	5,200	41,021	259,996	405,811	3,385	81,690	658,319	116,611	27,894	3,451,800	215,199	1,830,262	448,039	447,743	630,299	271,443	639,148	542,785	1,006,501	2,260,283	63,491	1,571,392	2,031,786	1,033,211
66	Unspecified & provisional sect	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,312	0	0	0	0	0	0	0	0	0	0	126	0	0	23	0	1,768	4,187	83,164	164	10,604	11,342	37,209
	Capital (202+203)	103,400,326	9,819,214	48,916,109	22,196,857	126,930,626	1,305,485	11,298,291	4,634,259	10,980,193	29,072,601	1,062,658	4,911,480	542,414	1,884,862	511,516	11,165,671	11,255,033	35,889,102	23,481,747	26,496,159	25,336,665	5,940,840	107,352,801	156,097,808	271,783,320	39,359,709	28,595,504	43,943,574	42,033,313	19,991,905	3,710,997	37,197,214	2,843,623	20,231,153	8,992,068	64,396,245	51,210,224	36,322,027
	Labor (201)	21,865,555	1,810,716	7,731,414	2,928,340	30,037,991	176,585	12,173,398	2,441,192	2,683,275	13,456,625	744,498	1,679,830	304,662	518,754	88,568	2,158,134	5,214,590	12,432,014	9,840,712	21,128,788	7,110,591	1,745,677	26,451,265	32,741,559	27,333,302	23,424,208	10,541,107	23,538,741	10,564,290	9,417,451	1,957,179	17,141,016	2,024,185	8,758,060	2,526,806	33,403,948	20,355,385	15,752,330
	Indirect Tax (204)	1,858,029	157,781	603,516	241,107	2,097,112	20,312	264,944	146,470	225,058	718,560	27,174	216,809	15,431	20,208	91,897	161,525	363,410	815,834	1,057,776	945,553	1,547,750	223,328	1,641,146	8,222,417	13,061,941	2,429,686	3,217,359	1,902,070	986,435	1,311,010	505,102	2,352,200	1,882,722	44,219,147	535,603	2,579,567	2,174,816	1,421,778
	Subsidy (205)	-609,417	-56,267	-221,839	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-97,725	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Tariff (402+403)	16	516,863	19,145	20,499	1,353,698	1,704,271	378	187	211	7,698	0	689	2	3,438	2,362,681	27,631	5,408	262,831	12,020	120,689	17,018	25,076	13,807	560,839	227	838,764	2,208,223	443,277	131,230	549,745	3,118,737	1,283,479	104,109	483,684	2,312,645	3,119,695	266,193	3,021,288
	Import Subsidy (405)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Final Cons. HH (301)																																						
	Final Cons. Gov (302)																																						
	Final Cons. Inv. (303+304)																																						
	Foreign Sector	15,976	7,975,468	840,874	150,585	7,188,439	21,863,743	93,914	4,822	2,004	91,061	0	48,981	8,398	17	9,935,887	881,767	4,370	3,969,196	238,463	301,551	416,560	161,706	192,086	5,562,140	128,844,502	6,260,482	15,674,332	12,672,631	1,385,329	6,615,935	4,498,724	13,450,746	1,108,656	3,863,331	4,427,444	12,545,366	3,872,786	22,131,601
	Total	169,856,901	23,224,965	75,677,055	29,380,631	190,117,906	25,342,776	36,166,581	10,444,396	18,872,934	77,816,307	3,955,219	10,968,954	1,029,239	2,947,208	13,102,671	20,495,955	22,158,116	80,146,801	83,596,378	108,594,786	44,508,302	10,165,111	183,973,179	270,517,889	497,799,852	91,232,098	152,798,435	209,742,033	239,631,304	110,854,082	30,661,112	187,300,871	19,088,256	122,187,526	45,960,828	272,537,360	178,919,639	171,941,346

39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	Capital (202-203)	Labor (201)	Indirect Tax (204)	Subsidy (205)	Tariff (402+403)	nport subsidy (40	inal Cons. HH (30	nal Cons. Gov. (30	Cons. Inv. (303+	Foreign Sector	Total
0	32,155	0	0	39,160	0	0	0	0	0	0	0	0	0	12,710	0	0	0	0	0	0	0	0	0	0	18,795	37,492	0							0	0	3,027,871	26	169,856,901
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	449,971	0	0	4,051	0	0	0	0	0	0	142,864	4,010	0							8,577,365	0	1,625,318	43,155	23,224,965
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	405,752	0	0	0	0	0	0	0	0	0	312,995	23,428	0							40,374,358	0	-2,921,799	181,781	75,677,055
33	17	0	0	0	0	0	0	0	0	0	0	0	0	0	2,488,676	0	0	45,813	0	0	0	0	0	0	735,312	59,095	0							20,185,606	0	-1,751,770	78,778	29,380,631
0	390,945	0	0	0	0	0	0	0	0	0	0	0	0	351,592	15,000,465	0	0	0	0	0	0	0	0	0	20,565,608	734,872	0							142,173,042	0	-5,462,489	297,272	190,117,906
0	121,116	0	0	0	0	0	0	0	0	0	1,210	0	0	0	169,215	0	0	0	0	0	0	0	0	0	0	0	0							738,219	0	-37,904	63,358	25,342,776
0	195,204	0	28,309,131	0	0	0	0	0	0	0	14,939	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							0	0	1,038,921	95,739	36,166,581
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22,192	0	0	0	0	0	0	0	0	0	0	0	0							63,878	0	112,802	695	10,444,396
15,002	25,297	0	0	0	0	0	0	0	0	0	154,584	0	0	35,910	848,291	0	0	3,900	0	0	0	0	0	0	50,951	1,142	0							7,862,281	0	-352,826	272,324	18,872,934
23	10,847,194	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							0	0	-5,253	300,318	77,816,307
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							721,856	0	-151,173	0	3,955,219
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,079	0	0	0	0	0	0	0	0	0	0	0	0							657,207	0	-532,974	6,725,069	10,968,954
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	290	0	0	0	0	0	0	0	0	0	0	0	0							134,628	0	10,160	23,131	1,029,239
0	8,737	0	0	0	0	0	0	0	0	0	0	0	0	0	3,644	0	0	0	0	0	0	0	0	0	0	0	0							2,417	0	28,497	231,894	2,947,208
0	76	0	0	0	0	0	0	0	0	0	1,046,954	0	0	0	0	0	0	981	0	0	0	0	0	0	8,173	0	0							0	0	251,568	51,690	13,102,671
31	2,706,070	0	316	248	0	0	0	1,449	348	0	34,320	0	0	0	258,270	0	0	0	0	0	0	0	0	0	64,981	0	586,203							1,219,731	0	178,844	10,724,718	20,495,955
0	272,594	137	0	0	0	0	0	0	0	0	13,177	0	0	956	3,747	0	1,492	0	0	0	0	70	0	45,632	275,769	127,766	23,573							2,345,573	0	79,031	156,340	22,158,116
0	101,296	0	0	0	0	0	0	0	0	0	43,866	0	0	0	492,490	0	70,186	25,542	0	0	0	0	0	0	605,274	37,794	0							23,056,732	0	-1,085,045	420,981	80,146,801
0	1,841	0	1,196	0	0	0	0	256	0	0	141,563	0	0	0	18,110,976	0	0	45,758	0	0	0	0	0	0	3,640,801	223,014	0							52,795,233	0	415,289	8,859	83,596,378
844	218,712	0	0	0	0	0	0	0	0	0	63,225	0	0	0	32,963,847	0	0	20,017	0	0	0	0	1,498	0	4,149,882	0	0							62,350,608	0	-6,636,111	270	108,594,786
0	151,938	0	165	64,126	0	0	0	8,793	702	41,848	151,728	0	20,124,132	24,072	20,677	4,829	0	0	0	0	0	0	15,597	0	18,350	28,597	0							2,041,085	0	2,305,790	117,832	44,508,302
1,171	433,597	0	0	0	0	0	0	15,958	0	0	67,617	15	40,148	0	40,923	0	0	0	0	0	0	0	294	0	0	227,478	0							3,275,594	0	489,118	293,690	10,165,111
0	35,511	0	0	0	0	0	0	0	0	0	605,495	0	0	0	8,191,364	0	0	28,639	0	0	0	0	197,806	0	2,206,681	207	0							112,808,878	0	-4,584,661	2,854,157	183,973,179
17,398	20,126,549	100	308,423	939,768	9,214,882	5,828,774	41,971,087	4,062,474	152,918	77,386	46,089	12,393,805	0	0	15,779	68,151	0	0	0	0	0	0	0	0	0	0	0							0	0	34,609,086	109,943,892	270,517,889
22,648,400	61,195,250	159,867,675	8,677,737	34,049	2,770,951	6,609,217	0	1,444,715	2,623	0	13	9,069,665	9,536	0	0	0	0	0	0	0	0	0	0	0	0	0	0							0	0	37,634,728	133,563,802	497,799,852
1,981,475	1,252,038	403	16,373	4,843,603	2,301,138	0	0	11,686	13,049	0	197,926	0	76,501,167	36,461	74	0	0	0	0	0	0	0	0	0	1,012,664	0	0							1,072,856	0	61,562	913,335	91,232,098
0	21,144	0	0	0	0	0	0	0	0	0	5,483	0	0	0	14,961,179	0	0	476,868	0	0	0	0	0	0	1,459,685	0	0							99,003,365	0	-3,151,966	18,898,087	152,798,435
118	2,583,349	0	0	0	0	0	0	0	0	0	666	0	0	131,300	3,080,317	0	0	32,270	0	0	0	0	0	0	73,964	6,712	0							30,681,468	0	-10,073,630	131,210,338	209,742,033
0	307,970	0	0	2,200	0	0	0	0	0	0	0	0	0	0	18,437,907	0	0	314,450	0	0	0	0	0	0	12,784,487	0	0							198,985,459	0	-14,542,294	187,249	239,631,304
85,561	68,008	0	2,605	0	0	0	0	0	0	0	26,906	0	0	748,473	5,210,215	0	0	715,888	0	18,272	31,954	0	0	0	607,488	41,217	0							66,182,784	0	397,731	3,073,999	110,854,082
101	388,602	0	0	0	0	0	0	0	0	0	0	0	0	0	1,711,604	19,155	0	128,151	0	0	0	0	0	0	393,981	9,355	0							15,962,730	0	245,312	259,796	30,661,112
4	499,485	0	115	5	0	0	0	0	29,393	0	7	0	0	39,639	2,804,841	12,129	21,424	151,514	14,724	2,563	0	10,140	62,563	0	2,081,279	1,806,783	0							93,082,161	0	2,196,442	9,115,644	187,300,871
111	25,457	0	0	0	0	0	0	0	38	0	0	0	0	204,828	1,710,984	36,502	0	193,707	201,499	74,575	0	220,151	744,241	0	59,178	215,871	0							15,194,150	0	-692,049	273,417	19,088,256
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,646,714	0	0	92,036	63,949	0	0	1,081	0	0	0	0	0							103,262,031	0	427,070	3,955,482	122,187,526
1,004	307,992	0	1,555,637	11,182	4,456	0	0	156,022	81,362	171	40,004	0	4,183	0	0	0	0	0	0	0	0	0	60	0	13,506	15,754	0							437,467	0	191,345	17,017,715	45,960,828
11,722	152,840	158	971,186	29,071	0	255	434	501,218	760,173	472,034	550,976	14,697	994,523	8,614,273	1,960,785	27,674	407,316	137,510	33,352	152,100	177,171	56,850	641,117	1,363,219	1,669,880	1,934,341	6,692							99,064,620	0	12,691,739	85,865,660	272,537,360
11,951	126,567	1,297	100,246	60,567	0	0	0	3,065,719	722,112	383,425	1,221,830	0	57,619,877	4,145,514	15,466	0	17,447	0	3,110	24,603	7,531	3,718	13,117	81,724	230,184	127,001	5,121							33,687,398	0	7,585,523	37,928,606	178,919,639
95,597	1,107,428	1,387	614,287	227,958	270,308	21,765	13,669	242,550	2,745,254	175,996	128,429	162,824	2,195,261	24,705,476	102,858	52,995	649,380	80,255	193,653	148,420	1,409,218	2,640,435	1,785,900	5,604,672	15,026,373	233,457	4,691							21,087,049	0	221,929	40,580,766	171,941,346
185,976	260,201	277	85,779	21,585	18,055	0	0	44,424	154,438	0	4,916	0	0	248,059	66,716	0	33,452	10,873	0	1,291	0	1,494	235,578	329,039	200,213	250,866	0							6,457,190	0	4,079,485	2,923,360	79,440,950
5,144,735	62,297,255	375,933	73,441,947	3,932,962	125,302	3,307,555	132,345	26,003,325	31,954,814	1,626,281	1,488,325	1,720,140	13,278,854	6,105,947	939,149	39,742	703,338	234,683	40,479	71,534	35,538	358,504	1,713,773	4,260,341	19,151,367	1,862,991	9,743							82,723,440	0	-22,473,351	56,649,753	440,894,286
396,372	4,779,568	6,287,848	6,161,143	4,353,285	1,150,233	3,159,598	671,660	7,009,440	3,460,038	1,567,395	388,445	28,366,251	77,438,502	35,437,450	555,455	1,053,694	59,785,693	18,959,201	16,146,940	625,436	558,140	1,074,998	2,015,567	7,510,459	2,604,174	391,954	51,092							97,018,908	0	-36,114,181	173,620,864	569,233,658
55,056	629,252	26,292	14,126,905	25,244	1,570	37,370	5,226	1,174,205	12,602,278	4,394,147	1,017,105	369	18,274,766	13,618,554	42,343	3,034	5,961,199	21,515	1,464,284	320,099	67,097	808,239	359,236	699,639	1,330,617	23,355,576	750,078							66,784,280	0	400,815	74,944,702	249,729,145
18,638	365,280	795	116,417	810,251	10,556	326	788	576,359	1,180,066	362,540	514,291	5,696	37,262,771	636,771	11,564	19,768	15,359	1,696	883	657	4,322	3,053	58,118	270,927	90,370	208,308	0							6,970,802	0	4,053,364	5,327,259	59,404,898
0	0	0	0	724,279	41,387	0	0	15,943	4,645	0	26,301	0	35,182,500	0	0	0	0	0	0	0	0	0	0	0	0	0	0							0	0	654,221	721,072	37,370,348
0	0	171	2,116	147,907	0	10,858,984	33,282	30,832,061	6,934,502	8,882,066	420,273	0	65,244,471	0	0	0	0	0	0	0	0	0	0	0	0	513,838	0							0	0	2,899,209	13,113,030	139,908,858
0	2,599	1,073	2,793	18,121	0	89,981	3,364,556	6,946,042	5,663,582	2,441,004	2,769,878	0	6,817,913	0	0	0	0	0	0	0	6,258	0	0	0	0	10,858	0							0	0	4,980,568	55,132,208	88,425,670
22,170	152,988	508,494	1,560,257	591,204	0	117,269	60,553	7,605,112	11,040,102	4,165,020	929,238	43,924	159,869,168	567,637	96,981	12,573	17,002	14,888	1,987	50,105	89,677	1,402,130	513,350	2,485,734	476,214	2,578,195	629							22,408,628	0	31,720,913	21,398,110	274,251,994
32,473	1,277,293	449,272	2,439,357	976,059	0	402,134	136,661	1,640,220	175,210,335	8,998,206	616,124	1,857,117	40,599,706	3,347,716	124,492	17,141	4,236,851	270,398	234,542	574,976	2,150,425	1,229,944	11,418,295	5,284,190	1,983,113	12,788,992	894							140,271,202	0	184,406,526	93,035,629	719,301,879
0	3	3,569	5	0	0	0	0	160,607	0	88,312,463	15	0	0	0	0	585,668	0	4,765,393	8,123,186	43,564	0	0	0	1,867,547	0	53,846,068	0							116,967,089	0	62,471,532	39,702,206	378,067,298
1,704	72,286	11,456	243,363	106,599	422	8,771	986	176,835	4,220,890	918,741	1,773,618	8,250	1,260,443	1,369,815	24,010	5,472	40,468	53,264	10,784	10,648	7,669	130,989	197,971	548,266	2,435,276	177,395	0							15,444,854	0	673,153	13,765,150	44,505,169
113,936	1,669,893	63,142	1,929,948	929,755	2,048,073	2,610,791	321,155	3,168,945	3,706,987	1,607,428	699,176	12,811,114	405,914	24,186,468	623,049	521,795	630,423	588,080	155,966	1,320,699	2,160,998	1,461,025	1,650,040	2,845,477	2,028,864	2,932,392	14,598							39,049,910	0	0	0	124,490,705
6,108	447,146	75,874	96,513	302,193	141,094	29,267	147,996	561,177	796,297	257,611	25,240	1,003,727	1,203,120	28,211,600	82,682	747,328	681,222	448,252	43,037	4,931,681	3,648,056	1,641,876	15,685,193	17,135,068	3,520,116	809,156	0							0	0	1,144,105,970	0	1,243,975,535
674,800	9,308,279	501,378	13,551,785	3,006,877	1,007,082	2,856,368	757,382	8,470,246	37,293,439	13,347,562	2,064,382	6,190,266	87,204,572	9,064,935	38,674,034	269,732	8,786,221	6,467,303	2,698,919	443,799	740,740	1,436,179	3,368,409	3,120,107	18,128,821	15,325,114	202,329							381,289,505	0	42,095,283	150,736,964	999,122,745
101,419	1,370,077	182,611	854,828	146,458	358,707	409,717	211,710	1,046,746	906,954	1,096,499	130,096	82,235	8,684,556	21,770,362	328,405	56,307	859,529	616,536	2,847,860	229,622	281,500	1,443,892	2,252,576	16,897,799	1,364,761	1,708,395	0							250,142,272	0	0	39,331,798	361,896,834
2,928	36,468	15,053	31,182	27,202	20,887	31,417	14,252	35,378	111,597	62,442	16,750	10,490	105,020	584,796	30,359	8,601	19,766	5,282	4,400	37,252	63,449	25,262	44,769	220,448	71,125	43,397	133							3,877,476	0	28,585	297,896	6,289,606
187,105	2,537,866	178,131	2,594,246	995,145	358,763	706,990	326,163	2,331,387	9,406,842	2,565,276	742,004	897,870	13,905,641	45,025,216	4,603,937	44,244	3,255,357	793,057	318,008	225,556	466,138	1,619,739	1,859,765	5,593,185	3,239,884	2,373,964	38,078							103,180,769	0	7,380,631	19,978,779	268,586,381
133,061	1,392,964	87,642	2,266,641	829,590	356,858	484,560	180,341	1,775,906	5,448,940	1,193,839	709,469	281,835	4,485,305	6,566,614	1,571,283	32,984	2,006,968	1,238,477	109,571	647,438	633,194	163,830	525,878	2,749,806	1,271,158	1,722,186	7,769							21,016,528	0	1,937,666	34,387,332	112,590,485
26,287	238,701	42,482	205,638	56,490	19,944	93,696	56,719	167,523	623,707	193,654	91,543	90,363	1,592,552	8,403,417	246,846	28,101	265,456	76,368	3,115,556	364,551	440,104	894,348	3,216,674	7,721,385	603,471	258,494	1,059							47,079,589	0	245,535	8,087,081	87,312,363
62,802	492,445	28,127	866,005	366,379	58,789	411,213	80,049	742,691	2,476,672	455,749	137,707	127,745	1,691,626	2,602,741	789,637	62,974	2,621,420	8,830,503	7,210,533	3,220,004	288,777	194,606	376,613	1,612,676	494,876	410,708	3,711							9,525,246	0	1,252,115	8,883,014	62,745,577
260,014	1,703,479	43,841	775,052	415,233	219,181	66,473	249,529	1,193,297	2,095,406	488,868	148,333	111,326	5,383,474	31,264,735	313,320	82,047	3,438,009	959,990	500,487	2,873,532	13,110,985	4,536,410	3,449,744	2,118,746	2,774,683	1,532,795	24,110							97,429,118	0	0	19,212,355	200,926,504
373,459	3,103,181	771,739	3,303,646	744,184	358,707	324,883	247,690	3,124,058	3,780,607	3,349,599	647,258	1,027,362	12,487,371	63,018,730	900,584	133,653	5,764,577	1,865,173	2,131,663	962,520	4,693,816	54,891,874	9,855,464	6,594,031	2,987,408	1,720,642	0							55,492,586	0	0	3,776,960	280,538,016
134,134	1,443,853	361,220	1,486,651	355,837	369,217	629,549	114,595	4,527,741	11,406,335	2,978,896	335,551	1,979,839	35,992,778	97,241,260	1,272,069	172,295	5,108,618	1,636,381	2,181,655	2,581,005	6,211,354	9,078,035	7,605,989	4,114,966	6,722,398	9,116,489	17,618							101,656,373	0	2,445,994	13,954,037	346,782,694
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	231,816	6,791	229,989	62,277	245,883	23,797	341,291	3,638,649	5,640,982	168,293	940,478	296,841	0							14,139,505	247,015,849	0	4,148,405	277,130,846
28,526	1,019,550	4,293	140,694	50,022	116,343	30,381	694,030	48,750	246,541	521,507	61,476	77,235	3,695,226	2,091,524	122,479	141,864	285,155	120,520	170,702	282,098	1,015,092	1,381,061	2,636,219	688,172	6,306,871	676,907	0							134,917,646	169,850,820	0	13,417,017	342,663,499
47,555	3,797,335	524,601	868,123	412,139	160,565	146,196	593,802	1,388,973	5,202,477	818,984	127,085	121,593	2,770,633	24,571,820	253,008	84,254	50,185,219	558,205	636,452	1,637,328	3,160,113	2,882,963	10,268,212	15,628,610	4,393,438	6,079,090	0							120,010,082	0	17,742,811	4,923,138	301,233,416
12	17,430	709	96,175	4,476	0	72,245	14,365	22,286	17,752	255	10,340	4	8,136	589,218	0	0	0	2	0	0	560	0	8	0	0	2,602	4,637							2,863,604	0	0	39,862	3,914,580
22,650,061	50,778,155	272,167,612	37,799,259	15,200,472	9,719,815	10,785,442	10,461,971	68,073,998	92,411,757	66,354,293	5,328,204	112,506,834	267,444,878	362,486,604	91,603,031	911,209	63,488,620	15,088,452	10,682,734	16,938,727	117,766,889	124,091,146	167,405,498	18,744,514	43,665,884	83,937,387	1,527,993											3,611,115,032
8,684,796	26,487,034	61,257,553	21,394,869	8,692,499	4,127,232	2,225,738	5,089,327	39,618,420	38,499,417	33,995,721	3,746,667	14,863,201	167,855,903	151,338,617	53,603,134	1,582,698	45,471,618	8,620,540	10,036,109	11,542,380	29,923,870	51,739,650	33,569,510	138,982,317	133,851,319	54,672,475	528,986											1,586,233,341
180,404	5,602,870	2,178,219	3,523,859	1,598,558	1,081,581	776,554	906,258	4,089,927	6,521,805	3,124,374	734,018	2,571,426	16,340,909	19,720,935	6,827,266	63,368	2,183,229	664,416	785,551	568,802	1,300,170	1,633,755	6,547,844	0	1,762,633	5,074,497	59,569											196,685,380
-15,163,888	0	-97,917,211	0	0	0	0	0	0	0	0	0	-83,906,513	0	0	0	-688,415	0	-850,000	0	0	-150,000	0	0	0	0	-40,700	0											-199,701,975
1,394,738	19,478,835	1,575,590	2,741,596	995,406	81,263	7,798,363	1,899,691	3,672,701	26,376,315	15,104,318	1,806,117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2											107,841,326
0	0	-41,189,496	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0											-41,189,496
																												3,611,115,032	1,586,233,341									5,197,348,373
																														196,685,380	-199,701,975	107,841,326	-41,189,496	250,485,000				314,120,235
																																		1,751,058,942	-102,746,434		-139,481,932	1,508,830,576
28,815,023	136,427,021	200,744,211	16,464,936	6,316,550	856,987	78,977,016	19,667,398	38,496,431	215,038,370	107,731,700	12,438,217	0	0	0	24,797,593	69,249	1,344,378	37,971,410	16,903,905	11,775,943	10,284,408	9,841,920	50,849,226	1,843,857	12,054,862	10,700,158	45,272											1,347,755,914
79,440,950	440,894,286	569,233,658	249,729,145	59,404,898	37,370,348	139,908,858	88,425,670	274,251,994	719,301,879	378,067,298	44,505,169	124,490,705	1,243,975,535	999,122,745	361,896,834	6,289,606	268,586,381	112,590,485	87,312,363	62,745,577	200,926,504	280,538,016	346,782,694	277,130,846	342,663,499	301,233,416	3,914,580	3,611,115,032	1,586,233,341	196,685,380	-199,701,975	107,841,326	-41,189,496	5,197,348,373	314,120,235	1,508,830,576	1,347,755,914	