APPENDIX A

Analysis for South Africa

Other than the member countries of the East Asia Summit (EAS), there are countries with a high ratio of coal-fired power generation in their electric power supply. The following uses South Africa for analysis using the same method discussed in Chapter 4.

Table A.1: Assumption of Average Efficiency of Coal-fired Power Plants

BAU scenario	39.3%*
Efficiency down scenario	34.3% (BAU -5%)

BAU = business as usual, CPP = coal-fired power plant.

* The Institute of Energy Economics, Japan, *Asia/World Energy Outlook 2013,* Reference scenario.

Source: Authors.

Table A-2. Assumption of Fuel Share in Power Generation

BAU scenario	Coal	87.3%*
	Gas	0%*
15% Gas conversion scenario	Coal	-13.1% (-15% of 87.3%)
	Gas	+13.1%
30% Gas conversion scenario	Coal	-26.2% (-30% of 87.3%)
	Gas	+26.2%

BAU = business as usual.

* The Institute of Energy Economics, Japan, *Asia/World Energy Outlook 2013,* Reference scenario.

Source: Authors.

Table A.3: Assumption of Fuel Cost for Power Generation

Coal price	Domestic	$25/tonne*
	Export	$110/tonne**
Gas price	Import	$12.7/MMBtu**

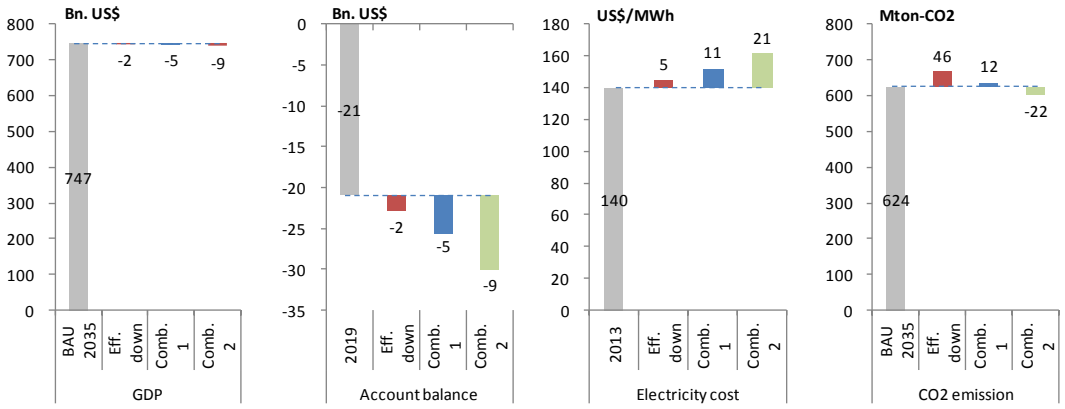
MMBtu = million British thermal unit.
*South African Coal Report.
**International Energy Agency, *World Energy Outlook 2013,* New Policy Scenario.
Source: Authors.

The calculation result indicates that delayed improvement of coal-fired power generation efficiency and a shift to gas-fired power generation will influence South Africa's macroeconomy.

The degree of influence increases in the order of efficiency downgrade, combination 1, and combination 2 scenarios, corresponding to a 1.2 percent increase of GDP (2035), 44 percent increase of current account balance (2019), and 15 percent increase of electric charge (2013) at maximum.

On the other hand, CO_2 emissions are reduced more as a shift volume to gas-fired power generation becomes larger. In the combination 2 scenario, CO_2 emissions are expected to be four percent lower than in the BAU scenario. However, in the combination 1 scenario, for instance, CO_2 emissions become higher than in BAU because increased CO_2 emissions due to lower efficiency cannot be offset by a reduction effect brought about by a shift to gas-fired power generation.

Figure A.1: Calculated Result (South Africa)



bn = billion, CO_2 = carbon dioxide, Comb. = Combination, Eff. = Efficiency, Mton = megaton, MWh = megawatt-hour.

Electricity price in 2013: Simple average of sector-wise tariff effective during FY2013.

Sources: The Institute of Energy Economics, Japan, *Asia/World Energy Outlook 2013,* Oct 2013; Reference scenario: International Monetary Fund, *World Economic Outlook* April 2014; ESKOM.

APPENDIX B

Effects of Reduction in Capital Cost

Chapter 4 analyses the economic impact of change of fuel cost of power generation. Generally, ratio of fuel cost in total cost is very high in thermal power generation.

Initial investment affects power-generation cost. In the efficiency downgrade scenario, the initial investment is reduced by switching from initially planned high-efficiency power-generation facilities to low-efficiency power-generation facilities. Switching to low-generation efficiency increases fuel cost, but the lower initial investment offsets part of the increased cost. In the gas-conversion scenario, switching from high-efficiency coal-fired power generation to natural-gas CCGT decreases the initial investment. Also, the decreased initial investment can offset part of increased fuel cost associated with a shift to gas-fired power generation. Accordingly, an analysis was made on the degree of influence of the decreased initial investment.

The construction cost assumption of coal-fired power plants (CPPs) and natural-gas CCGT employed the values in the 'Updated Capital Cost Estimates for Utility Scale Electricity Generating Plants' issued by the US Energy Information Administration (EIA) in April 2013 because the report evaluates various electric power costs under constant conditions and was more recently employed in several analyses of power-generation costs.

It has to be noted that construction costs of power plants naturally differ depending on each power plant and each country. The EIA's cost data in this study are also estimated values of construction costs in the US under certain supposition. Accordingly, the construction cost in the target country of this study is not shown. Furthermore, although it is considered apt to analyse based on the construction costs of subcritical pressure CPPs, ultra supercritical (USC) pressure CPPs, and natural gas CCGT, this study utilised the construction costs of supercritical pressure CPPs, IGCC, and natural gas CCGT for convenience because no distinctions are found in the EIA report.

These analytical results show the direction of influence by different construction costs, but do not allow measurement of the volume of influence.

Table B.1: Assumption of Initial Investment Cost

	Plant Description			Levelised Capital Cost [2012 US$/MWh]
	Plant type	Thermal efficiency (HHV)	Capacity factor	
Conventional coal	650MW SC	38.8%	85%	60.0
IGCC	600MW F class	39.2%	85%	76.1
Advanced combined cycle	400MW H class	53.1%	87%	15.7

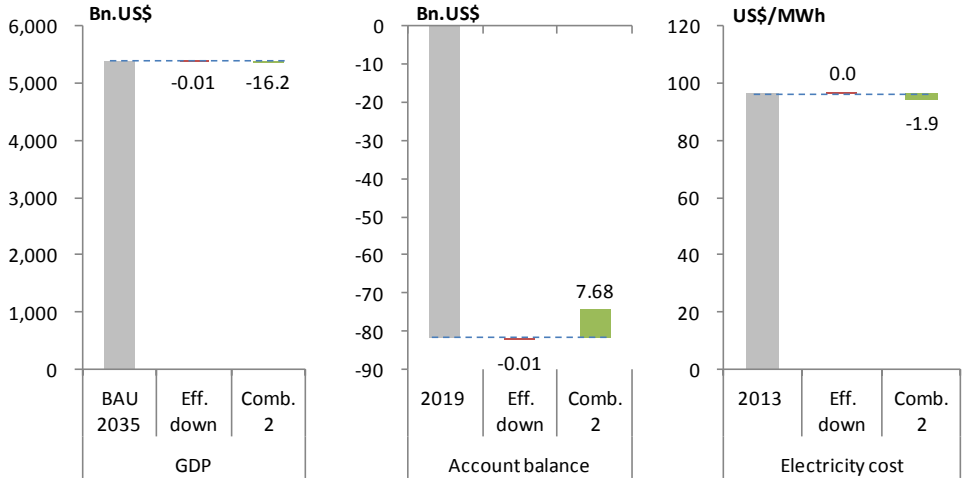
IGCC = integrated coal gasification combined cycle, HHV = higher heat value, MW = megawatt, MWh = megawatt-hour.
Source: US Energy Information Administration, *Updated Capital Cost Estimates for Utility Scale Electricity Generating Plants,* April 2013.

The following shows the calculation results of influence based on these assumptions. To check the direction of influence, calculation was made only on the efficiency downgrade and combination 2 (Efficiency downgrade + Gas conversion 30 percent).

Based on the calculation results, a decreased initial investment softens the influence on the macroeconomy of each country and case. The degrees of softening differ depending on the country and case, an increment of fuel cost may be considerably offset depending on the combined conditions.

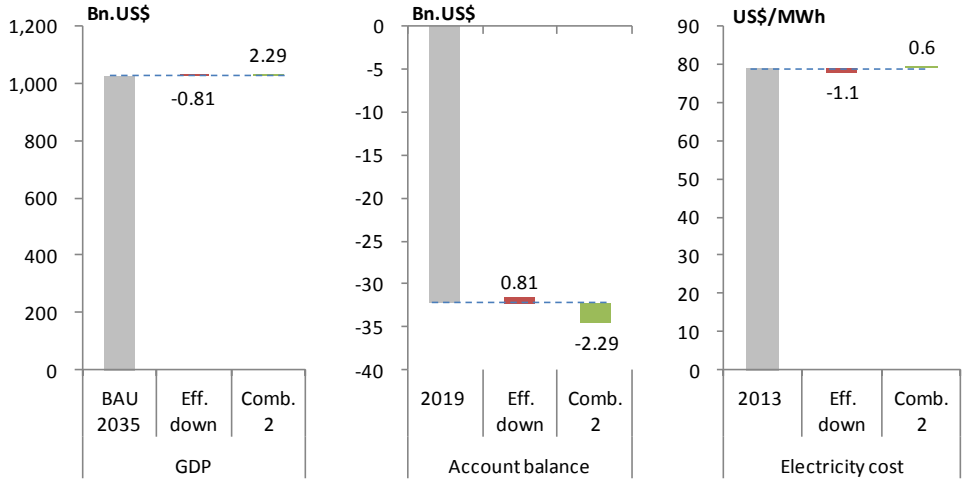
As mentioned, sufficient information on the assumed initial investment has not been obtained. These analytical results show the direction of influence on the macroeconomy of the reduced initial investment, but do not allow measurement of the degree of influence. It was confirmed that reduced initial investment was effective in softening the influence on the macroeconomy, but whether it can fully offset the negative effect in comparison with the benchmark remains uncertain.

Figure B.1: Combined Effect of Fuel Cost and Capital Cost of Coal-fired Power Plants (India)



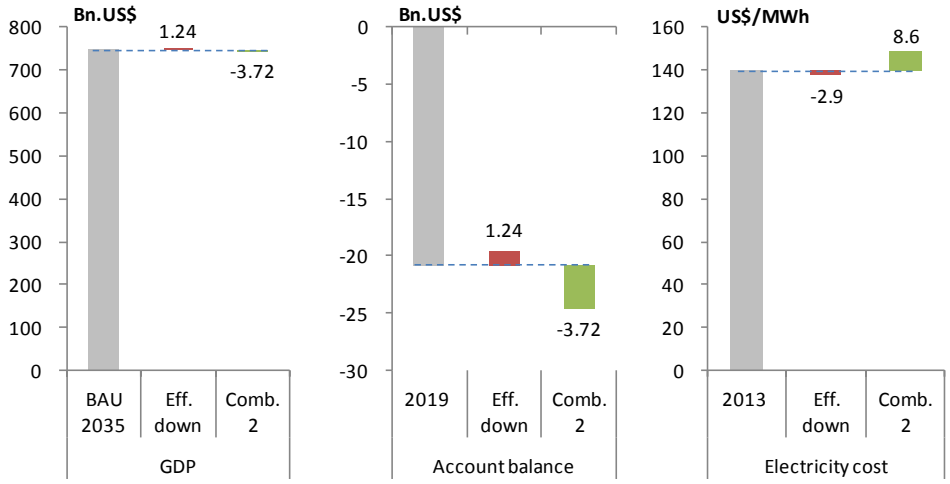
BAU = business as usual, bn = billion, Comb. = Combination, CPP = coal-fired power plant, Eff. = Efficiency, GDP = gross domestic product, MWh = megawatt-hour.
Source: Economic Research Institute for ASEAN and East Asia, *Analysis on Energy Saving Potential in East Asia,* June 2013; BAU scenario: International Monetary Fund, *World Economic Outlook April 2014:* CEA.

Figure B.2: Combined Effect of Fuel Cost and Capital Cost of Coal-fired Power Plants (Indonesia)



BAU = business as usual, bn = billion, Comb. = Combination, CPP = coal-fired power plant, Eff. = Efficiency, GDP = gross domestic product, MWh = megawatt-hour.
Source: Economic Research Institute for ASEAN and East Asia, *Analysis on Energy Saving Potential in East Asia,* June 2013; BAU scenario: International Monetary Fund, *World Economic Outlook,* April 2014; PLN.

Figure B.3: Combined Effect of Fuel Cost and Capital Cost of Coal-fired Power Plants (South Africa)



BAU = business as usual, bn = billion, Comb. = Combination, CPP = coal-fired power plant, Eff. = Efficiency, GDP = gross domestic product, MWh = megawatt-hour.

Source: The Institute of Energy Economics, Japan, *Asia/World Energy Outlook 2013*, Oct 2013; Reference scenario: International Monetary Fund, *World Economic Outlook*, April 2014; ESKOM.

APPENDIX C

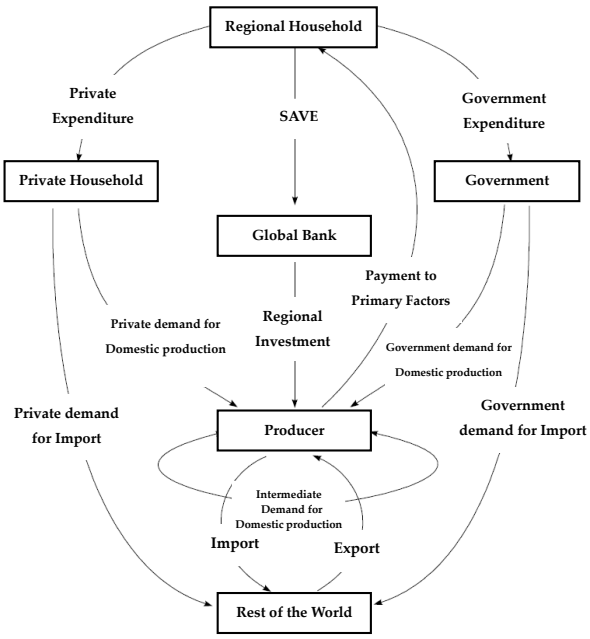
Effects of Electricity Price Increase

C.1. Methodology of Analysis

This chapter quantitatively analyses how the macroeconomy is influenced by lower coal-fired power-generation efficiency and a shift from coal-fired to natural-gas-power generation. Such changes in power generation influence producers and consumers not only through higher electricity charge but through increased import of fossil fuels as well. In evaluating these effects on the macroeconomy, a global trade analysis project (GTAP) model is utilised, one of the typical multi-area, multisectoral computable general equilibrium models.

In the GTAP model, there is a producer, a private household, and a government as economic agents in a country/region. The private household and the government are treated as a regional household since they spend the same way in response to price and income changes. The private household receives factor income by providing labour, capital, and land to the producer. The difference between factor income and expenditure becomes saving, which flows to the investment of the producer. The model identifies changes of economic indicators resulting from the behaviour of these economic agents in response to changes in prices of goods and services.

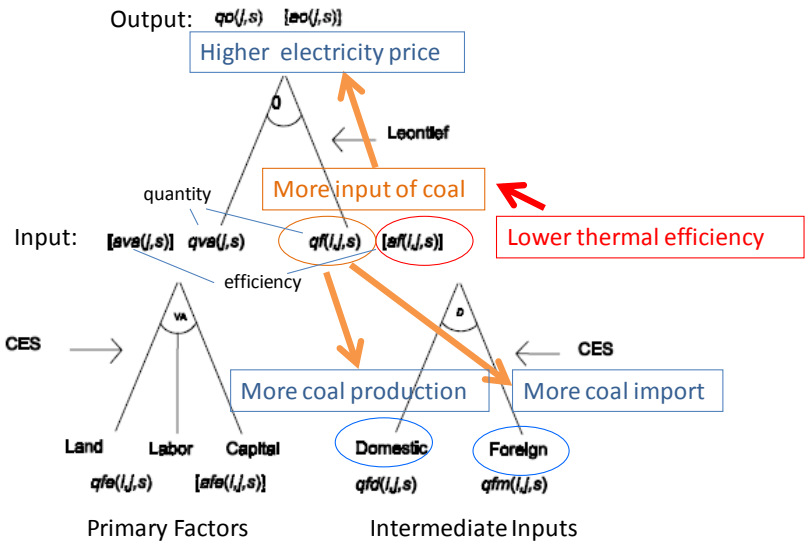
Figure C.1: Model Framework of GTAP



Source: Global Trade Analysis Project.

An increase in electricity charge by lower coal-fired power-generation efficiency and a shift from coal-fired to natural-gas-fired power generation is expressed by changing the input efficiency of coal and natural gas in the production function of the electric power sector.

Figure C.2: Impact of Lower Thermal Efficiency of Coal-fired Power Generation Production Function



Source: Global Trade Analysis Project.

C-2. Precondition of Analysis

With India and Indonesia as study target countries, this chapter sets the following cases.

Table C.1: Case Setting

	Eff. downgrade	Gas conversion
Efficiency downgrade case	-5% than BAU	-
Gas conversion case; Combination scenario 1	-5% than BAU	15% of CPPs will be converted
Gas conversion case; Combination scenario 2	-5% than BAU	30% of CPPs will be converted

BAU = business as usual, CPP = coal-fired power plant, Eff. = Efficiency.
Source: Authors.

The efficiency downgrade case assumes a five-percent drop of coal-fired power generation efficiency. It drops from 37.6 percent to 32.6 percent in India and from 38.7 percent to 33.7 percent in Indonesia. Increased coal input boosts the electricity charge by 6.0 percent and 3.2 percent in both countries, respectively.

The combination 1 case assumes partial replacement of a coal-fired power plant construction project by a natural-gas-fired power plant in addition to a five-percent drop of

coal-fired power generation efficiency. In India, 15 percent of coal-fired power generation is replaced by natural- gas-fired power generation, decreasing the share of coal-fired power generation in electric power generation from 67.7 percent to 57.5 percent. In Indonesia, 15 percent of coal-fired power generation is replaced by natural-gas-fired power generation, decreasing the share of coal-fired power generation in electric power generation from 42.0 percent to 35.7 percent. The share of natural-gas-fired power generation increases by 10.2 percent and 6.3 percent points in both countries, respectively, and the electricity charge in India and Indonesia increases by 9.7 percent and 9.1 percent, respectively, due to lower coal-fired power-generation efficiency and increased natural-gas-fired power generation whose fuel cost is relatively high.

The combination 2 case assumes a further shift from coal-fired power generation to natural-gas-fired power generation. In India and Indonesia, 30 percent or coal-fired power generation is replaced by natural-gas-fired power generation, replacing the shares of coal-fired and natural-gas-fired power generation in electric power generation by 20.3 percent and 12.6 percent points, respectively. The electricity charge in India and Indonesia rises by 13.4 percent and 15.6 percent, respectively.

Table C.2: Electricity Price Change, by Case

	India	**Indonesia**
Average retail power price	US$96/MWh	US$79/MWh
Efficiency downgrade	+US$5.8/MWh（+6.0%）	+US$2.5/MWh（+3.2%）
Combination 1	+US$9.4/MWh（+9.7%）	+US$7.2/MWh（+9.1%）
Combination 2	+US$12.9/MWh（+13.4%）	+US$12.3/MWh（+15.6%）

MWh = megawatt-hour.
Source: Authors.

Since India’s domestic natural gas resources are limited and spare production capacity is low, it is assumed that the country’s natural gas production volume remains unchanged in each case.

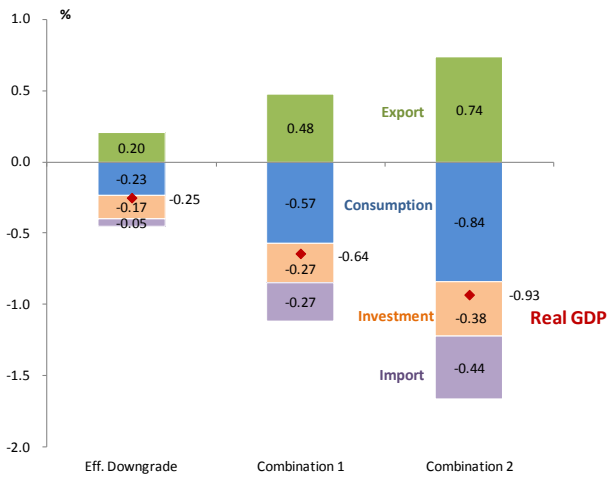
C-3. Result of Analysis

C-3-1 Influence on the Macroeconomy of India

(1) Influence on the Real GDP

For India, a net importer of coal and natural gas, lower coal-fired power-generation efficiency and electric power shift from coal to natural gas help increase fossil fuel import and expand an energy trade deficit. In addition, the higher electricity price due to increased fuel cost lowers real consumption and leads to higher production costs and prices in many manufacturing businesses, thereby deteriorating economic activities. On the other hand, in some industries, relaxation of domestic supply and demand, etc. decreases the cost of primary factors such as capital, and lowers the prices, resulting in enhanced international competitiveness and increased export. Consequently, however, the negative effects of increased fuel import and higher electricity price are bigger and the real GDP drops by 0.25 percent in the efficiency downgrade case, 0.64 percent in the combination 1 case, and 0.93 percent in the combination 2 case.

Figure C.3: Real GDP Change in India



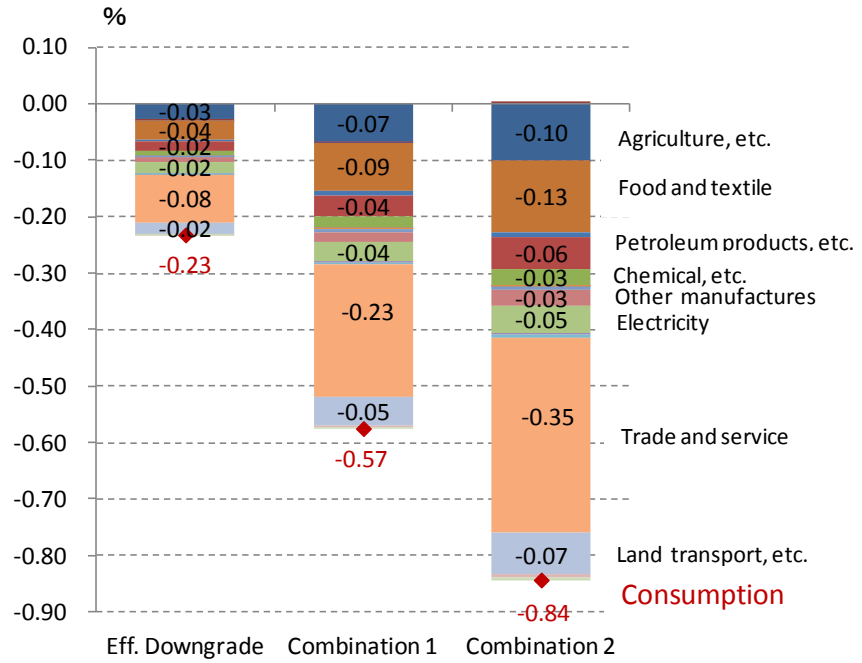
Eff. = Efficiency, GDP = gross domestic product.
Source: Authors.

The following describes how higher electricity charge, change of fossil fuel import, etc. influence final consumption, production in each industry, export/import, and prices in India.

(2) Influence on Consumption

Higher electricity price increases expenditure for electricity purchase in final consumption and decreases real consumption. Lower final consumption results in lower production, leading to lower income. In the efficiency downgrade case, combination 1 case, and combination 2 case, real final consumption drops 0.33 percent, 0.82 percent, and 1.2 percent, respectively. This contributes to a 0.23 percent, 0.57 percent, and 0.84 percent reduction of the real GDP, respectively. Above all, the demand decrease is relatively high in trade and services, agriculture, and food and textile sectors. Household power consumption also drops by 1.8 percent to 4.5 percent.

Figure C.4: Real Consumption Change in India (Contribution to Real GDP)



Eff. = Efficiency.
Source: Authors.

(3) Influence on Production, Export/Import, and Prices

1) Influence on Energy Production and Price

In the efficiency downgrade case, lower coal-fired power generation efficiency increases coal demand for power generation, boosting domestic coal production by 6.7

percent. Also, due to tight demand and supply, etc., the domestic coal price goes up by 17.1 percent, coal import price goes up by 2.9 percent, causing the average coal price for business use to increase by 10.6 percent.

In the combination 1 case, the demand increase effect due to lower power-generation efficiency is almost offset by the demand decrease effect due to a shift from coal to natural gas; coal demand for power generation declines only slightly; and coal production and price change very little. On the other hand, due to a higher demand for natural gas for power generation, both the domestic production price and import price of natural gas go up, causing the average price for business use to increase by 6.4 percent.

In the combination 2 case, a shift to natural gas is further accelerated, coal demand for power generation drops, decreasing coal production by 5.4 percent. Due to relaxed supply and demand, etc., the domestic coal production price drops by 10.5 percent, causing the average price for business use to drop by 7.6 percent. On the other hand, the average natural gas price for business use goes up by 7.3 percent.

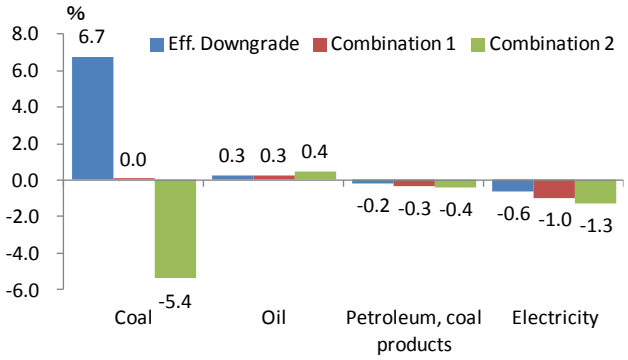
Electric power demand drops due to a price hike, resulting in 0.6 percent, 1.0 percent, and 1.3 percent lower electric power production in the efficiency downgrade, combination 1, and combination 2 cases, respectively.

Table C.3: Energy Price Change in India

		Coal	Oil	Gas	Petroleum products, etc.	Electricity
Eff. Downgrade	Production price	+17.1%	−0.1%	−0.1%	−0.0%	+6.0%
	Import price	+2.9%	−0.0%	+0.0%	+0.0%	+0.1%
	Price to firms	+10.6%	−0.0%	−0.1%	−0.0%	+6.0%
Combination 1	Production price	−1.2%	−0.1%	+13.8%	−0.0%	+9.7%
	Import price	−0.1%	+0.0%	+1.0%	+0.1%	+0.1%
	Price to firms	−0.8%	−0.0%	+6.4%	−0.0%	+9.7%
Combination 2	Production price	−10.5%	−0.2%	+18.7%	−0.1%	+13.4%
	Import price	−1.4%	+0.0%	+1.6%	+0.1%	+0.1%
	Price to firms	−7.6%	−0.0%	+7.3%	−0.1%	+13.4%

Eff. = Efficiency.
Source: Authors.

Figure C.5: Energy Production Change in India



Eff. = Efficiency.
Source: Authors.

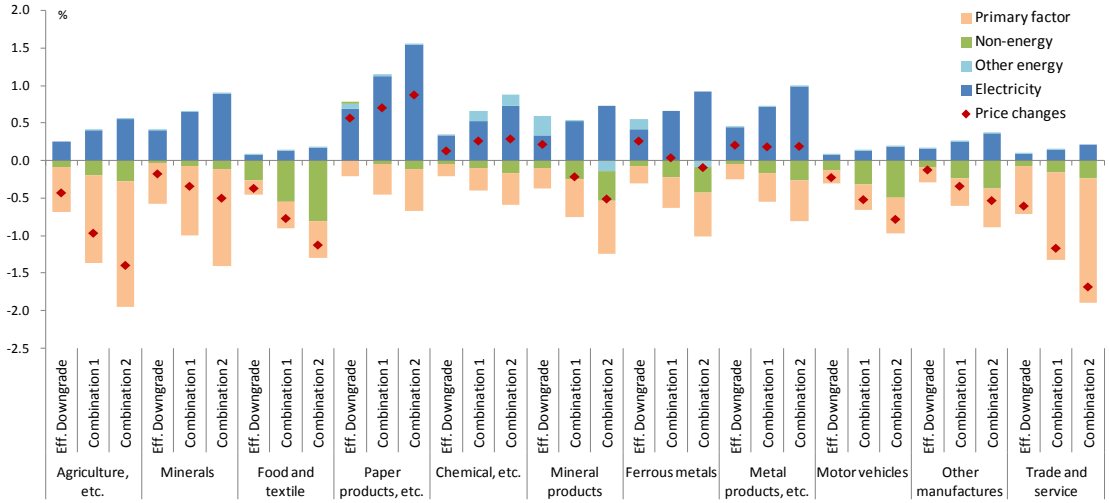
(2) Influence on Production and Prices in Non-energy Industries

Higher electricity price adds to electric power cost in each industry, resulting in higher product prices. On the other hand, lower domestic final demand relaxes supply and demand for many goods and services, resulting in lower product prices. Then, lower production in some industries applies pressure of decreased demand to primary factors such as capital and labour to contract demand. Furthermore, in structural adjustment to make up for increased electric power cost, distribution to primary factors (i.e. a ratio of value added) decreases, which in turn lowers price, contributing to lower production cost. Production cost is also influenced by increased/decreased coal price, increased natural gas price, and so on.

In energy-intensive industries such as chemical, paper, and metal products, effects of higher cost by higher electric power price become more outstanding and production prices rise in all cases due to comprehensive action of these factors. On the other hand, in industries such as agriculture, food and textile, other manufactures, and trade and services, effects of lower primary factor price, etc. are bigger and production prices in these industries drop in all cases.

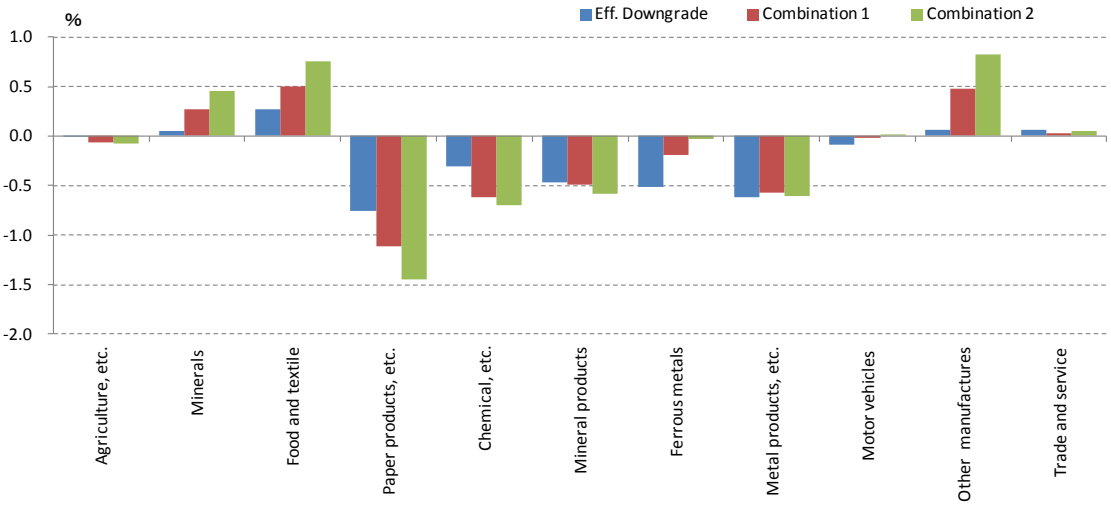
Because of smaller domestic demand attributable to higher prices and decreased real consumption, production drops in many manufacturing businesses such as chemical, paper, and metal products. On the other hand, in some industries such as food and textile, and other manufactures, global competitiveness is enhanced by lower product prices, increase of external demand led by increased export and advanced import substitution exceeds the decrease in domestic final consumption, thus expanding production.

Figure C.6: Domestic Production Cost Change of Non-energy Industry in India



Eff. = Efficiency.
Source: Authors.

Figure C.7: Production Amount Change of Major Non-energy Industry in India



Eff. = Efficiency.
Source: Authors.

(3) Influence on Export/Import

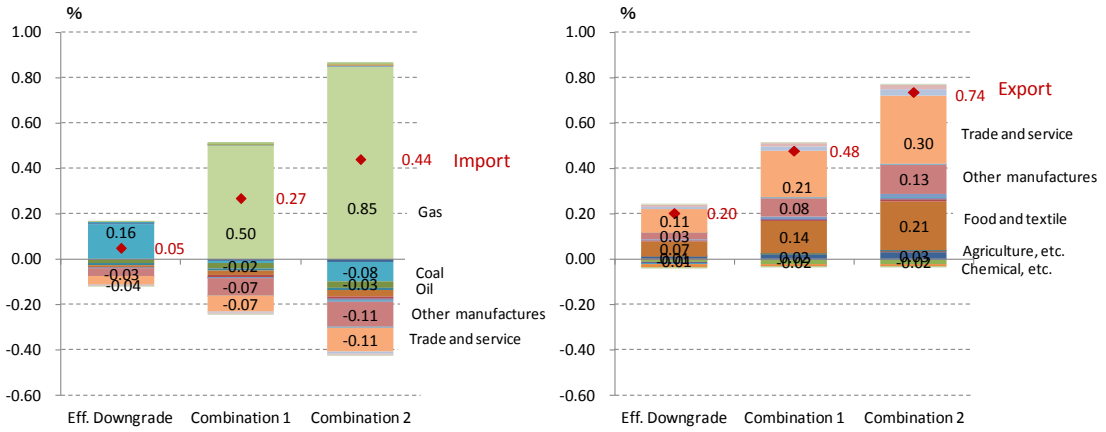
India is a net importer of coal and natural gas. In the efficiency downgrade case, coal import increases due to expanded coal demand for electric power, contributing to approximately 0.16 percent decline of India's GDP. In the combination 1 case, natural gas demand for electric power increases and increased import of natural gas contributes to 0.5 percent decline of GDP. In the combination 2 case, contribution of increased import of natural gas to lower GDP further expands to 0.85 percent. Coal

import decreases, but its contribution to higher GDP is only approximately 0.08 percent. In all cases, trade and services, and oil import drop due to decreased domestic demand, and so on. Also, development of import substitution decreases import of other manufactures.

Concerning export, higher product prices decrease export by the chemical industry, and so on. On the other hand, global competitiveness is enhanced in the food and textile industry, other manufactures, and trade and services industry where product prices drop, expanding export.

In total, Indian import decreases GDP by 0.05 percent, 0.27 percent, and 0.44 percent in the efficiency downgrade, combination 1, and combination 2 cases, respectively, whereas Indian export contributes to 0.20 percent, 0.48 percent, and 0.74 percent increase of GDP for these cases, respectively.

Figure C.8: Real Export/Import Change in India (Contribution to Real GDP)



Import Export

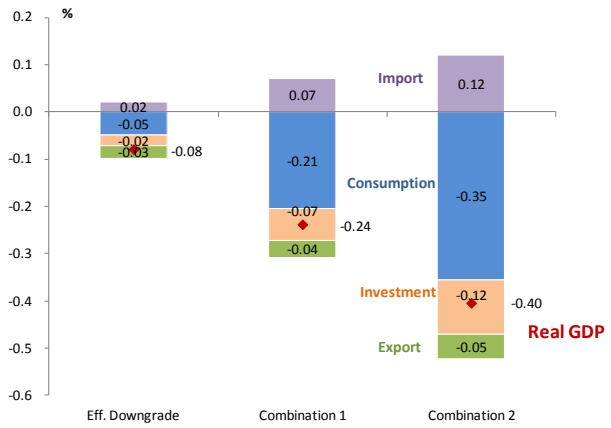
Eff. = Efficiency.
Source: Authors.

C-3-2 Influence on the Macroeconomy of Indonesia

(1) Influence on Real GDP

For Indonesia, a net exporter of coal and natural gas, lower coal-fired power generation efficiency and an electric power shift from coal to natural gas help increase domestic supply of fossil fuels and decrease export. In addition, higher electricity price due to increased fuel cost lowers real consumption, leads to higher production costs and prices in energy-intensive industries such as ferrous metal, thereby decreasing a ratio of value added and deteriorating economic activities. On the other hand, in some industries such as food and textile, relaxation of domestic supply and demand, structural adjustment, etc. decrease the cost of primary factors such as capital, lowers product prices, resulting in enhanced international competitiveness and increased export. Consequently, however, the negative effects of higher electricity price and decreased fuel export are bigger and real GDP drops by 0.08 percent in the efficiency downgrade case, 0.24 percent in the combination 1 case, and 0.40 percent in the combination 2 case, respectively.

Figure C.9: Real GDP Change in Indonesia



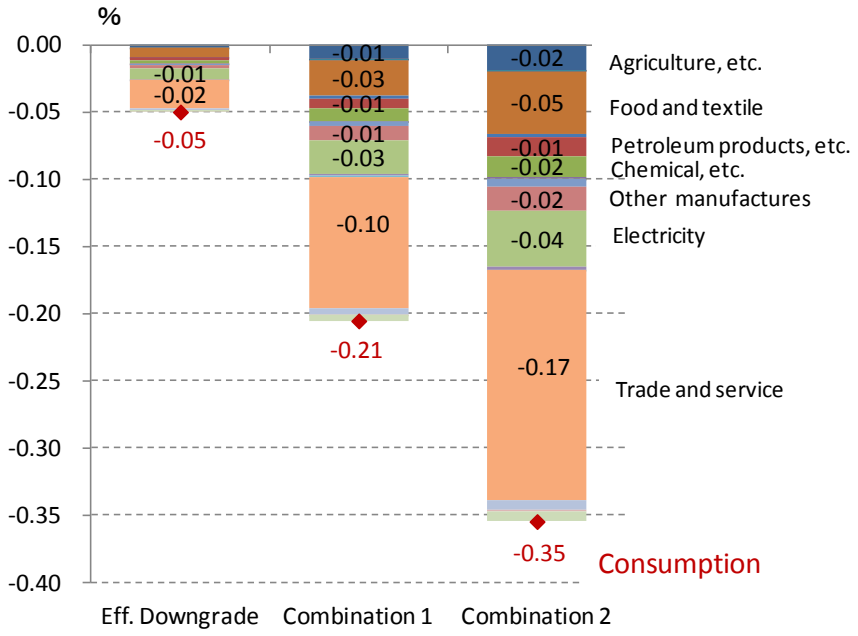
Eff. = Efficiency, GDP = gross domestic product.
Source: Authors.

The following specifically describes how higher electricity charge, change of fossil fuel export, etc. influence final consumption, production in each industry, and export/import and prices in Indonesia.

(2) Influence on Consumption

Higher electricity price increases expenditure for electricity purchase in final consumption and decreases real consumption. Lower final consumption and higher electric power cost result in lower production and decreased ratio of value added, leading to lower income. In the efficiency downgrade case, combination 1 case, and combination 2 case, real final consumption drops by 0.07 percent, 0.29 percent, and 0.50 percent, respectively. This contributes to 0.05 percent, 0.21 percent, and 0.35 percent reduction of real GDP, respectively Above all, demand decrease is relatively high in trade and services, and food and textile sectors. Household power consumption also drops by 1.0 percent to 4.6 percent.

Figure C.10: Real Consumption Change in Indonesia
(Contribution to Real GDP)



Eff. = Efficiency.
Source: Authors.

(3) Influence on Production, Export/Import, and Prices

1) Influence on Energy Production, Export/Import, and Prices

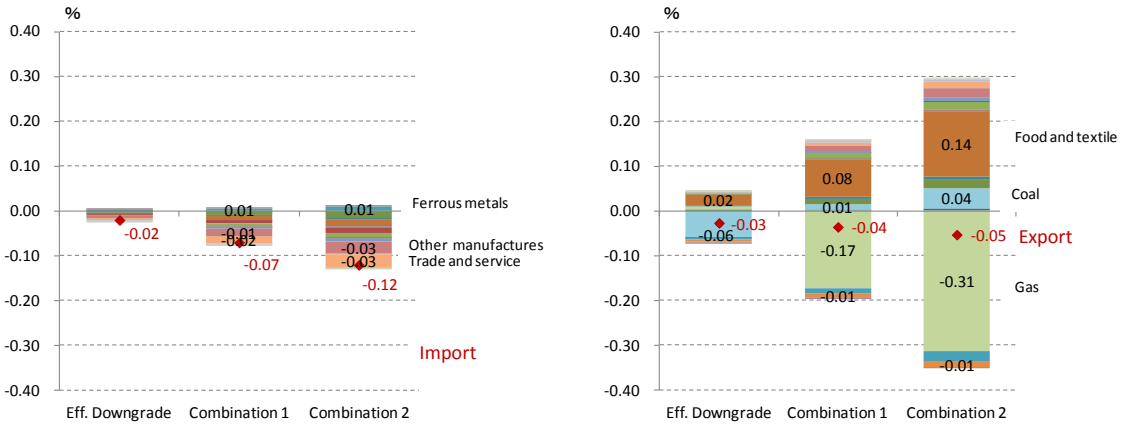
Indonesia is a net exporter of coal and natural gas. Since the demand change of coal and natural gas for power generation assumed in each case is mainly absorbed by adjusting their export, its influence on domestic production and prices is limited.

In the efficiency downgrade case, lower coal-fired power-generation efficiency increases coal demand for power generation. In response to that, domestic coal production increases by 0.6 percent and coal export drops. Decreased export lowers GDP by 0.06 percent. The influence on coal price is limited, increasing domestic production price only by 1.0 percent.

In the combination 1 case, the increased demand effect due to lower power generation efficiency is almost offset by the decreased demand effect due to a shift from coal to natural gas, coal demand for power generation declines only slightly, having very little influence on coal price, production, and trade. On the other hand, due to a higher demand for natural gas for power generation, natural gas production increases by 1.7 percent, but its export drops. Contribution of decreased export to GDP is -0.17 percent. Domestic production price of natural gas increases only by 0.5 percent.

In the combination 2 case, a shift to natural gas is further accelerated, coal demand for power generation drops. In response to that, domestic coal price drops slightly by 0.8 percent, increasing coal export under almost the same coal production volume. This increment of coal export boosts GDP by 0.04 percent. On the other hand, natural gas production increases by 3.1 percent in response to increased natural gas demand, but its export drops. Contribution of decreased export to GDP is -0.31 percent. Domestic production price of natural gas increases by 1.0 percent.

Figure C.11: Real Export/Import Change in Indonesia (Contribution to Real GDP)



Import Export

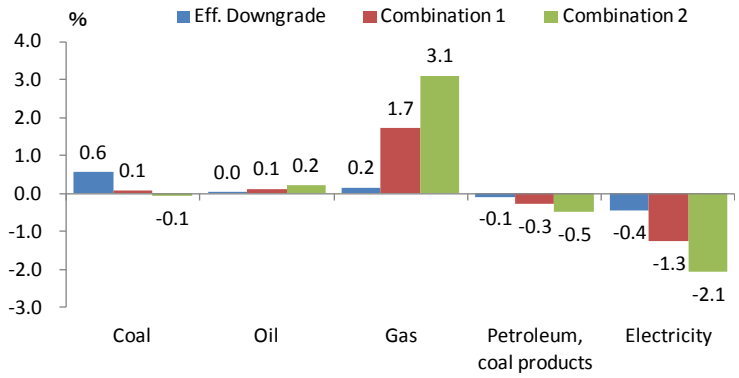
Eff. = Efficiency.
Source: Authors.

Table C.4: Energy Price Change in Indonesia

		Coal	Oil	Gas	Petroleum products, etc.	Electricity
Eff. Downgrade	Production price	+1.0%	−0.0%	−0.0%	−0.0%	+3.2%
	Import price	+0.3%	−0.0%	−0.0%	+0.0%	+0.0%
	Price to firms	+1.0%	−0.0%	−0.0%	−0.0%	+3.2%
Combination 1	Production price	−0.2%	−0.1%	+0.5%	−0.1%	+9.1%
	Import price	−0.1%	−0.0%	+0.1%	−0.0%	+0.0%
	Price to firms	−0.2%	−0.1%	+0.5%	−0.0%	+9.1%
Combination 2	Production price	−0.8%	−0.2%	+1.0%	−0.1%	+15.6%
	Import price	−0.2%	−0.0%	+0.2%	−0.0%	+0.0%
	Price to firms	−0.7%	−0.1%	+1.0%	−0.1%	+15.6%

Eff. = Efficiency.
Source: Authors.

Figure C.12: Energy Production Change in Indonesia



Eff. = Efficiency
Source: Authors.

(2) Influence on Production, Export/Import, and Prices in the Non-energy Industries

An increase in electricity price adds to electric power cost in each industry, pushing up prices. On the other hand, decreased domestic final demand relaxes supply and demand of many goods and services, lowering prices. Lower production in some industries applies pressure of decreased demand to primary factors such as capital and labour. Furthermore, in structural adjustment to make up for increased electric power cost, a distribution to primary factors (i.e. a ratio of value added) decreases, which in turn lowers price, contributing to lower production cost.

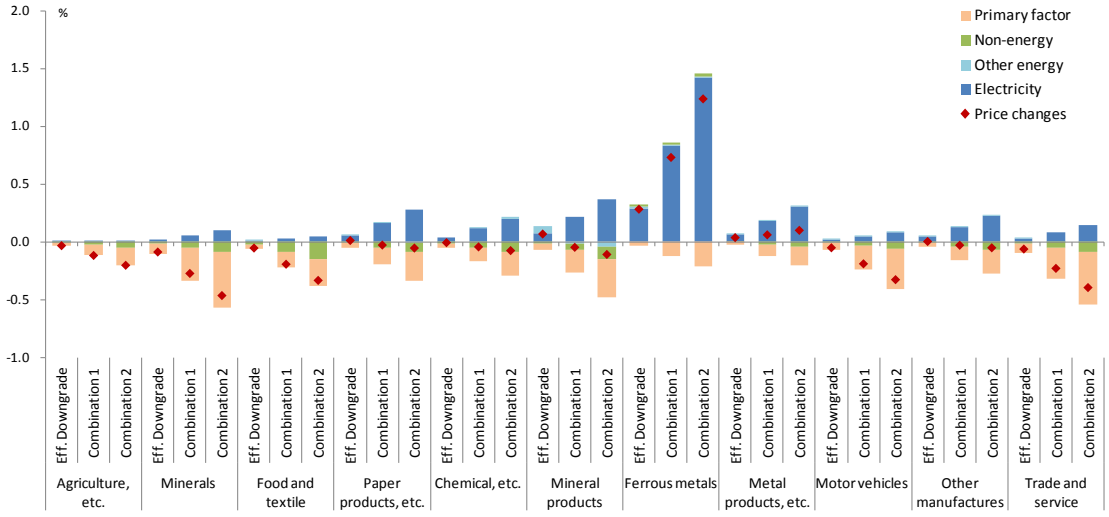
By comprehensive action of these factors, the effect of increased cost due to higher electricity price is more remarkable in energy-intensive industries such as ferrous metal, increasing production prices in all cases. In the combination 2 case, production price of ferrous metal goes up by 1.2 percent. On the other hand, the effect of lower primary factor prices, etc. is bigger in industries such as food and textile, and trade and services, lowering production prices in these industries. Except for ferrous metal, however, the effect on prices in major industries is limited, remaining at the variation width of 0.5 percent or less in all of them.

Concerning import, many products are imported less because of decreased domestic demand due to lower real consumption, boosting GDP by 0.02 percent, 0.07 percent, and 0.12 percent in the efficiency downgrade case, combination 1 case, and combination 2 case, respectively. For ferrous metal, however, higher domestic production price lowers competitiveness and increases import (Figure C.11).

Concerning export, coal and natural gas export decreases or increases according to an increase or decrease in domestic demand. In industries such as food and textile, lower domestic production price enhances global competitiveness, expanding export. Nonetheless, the effect of decreased export of fossil fuels is relatively big after all and Indonesian export decreases GDP by 0.03 percent, 0.04 percent, and 0.05 percent in the efficiency downgrade case, combination 1 case, and combination 2 case, respectively (Figure C.11).

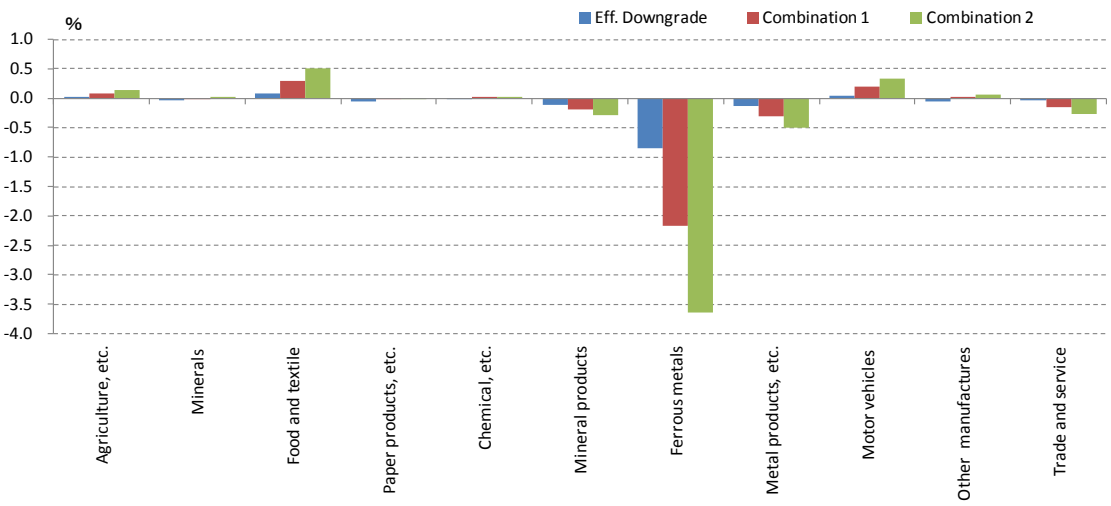
The change status of production differs depending on the industry. Decreased domestic demand reduces production of mineral products, trades and services, and so forth. Above all, domestic production of ferrous metal drops by 3.6 percent in the combination 2 case because of increased import due to deteriorated price competitiveness in addition to decreased domestic demand. In contrast, in industries such as food and textile, an increase in export exceeds the decrease in domestic demand, boosting production slightly.

Figure C.13: Domestic Production Cost Change of Non-energy Industry in Indonesia



Eff. = Efficiency.
Source: Authors.

Figure C.14: Production Amount Change of Major Non-energy Industry in Indonesia



Eff. = Efficiency.
Source: Authors.