International Commodity Prices and Inequality in Indonesia

August 2013

This publication was produced by Nathan Associates Inc. for review by the United States Agency for International Development.

International Commodity Prices and Inequality in Indonesia

DISCLAIMER

This document is made possible by the support of the American people through the United States Agency for International Development (USAID). Its contents are the sole responsibility of the author or authors and do not necessarily reflect the views of USAID or the United States government.

Contents

Acknowledgments **iii**

Abstract **iv**

1. Introduction **1**

Gini Coefficient 1

Objective 4

2. Methodology **5**

Computable General Equilibrium Model of the Indonesian Economy 5

Social Accounting Matrix 6

Scenarios and Simulations Strategy 7

3. Results **9**

Macro and sectoral impacts 9

Inequality and poverty impacts 10

4. Conclusion and Policy Implications **12**

References **13**

Appendix A. Tables and Figures

Appendix B. Decomposition Change in Real Consumption

Illustrations

Figures

Figure 1 *Indonesian Gini Coefficient 2002–2012* 2
Figure 2 *Income Distribution of Three Household Groups, 2002–2012* 3
Figure 3 *Index of Aggregated Commodity Prices, 1991–2012, Jan 2005=100* 4
Figure 4 *Index of Some Relevant Commodity Prices, 2008–2012, Jan 2005=100* 4

Table

Table 1 *Simulated Increase in International Prices of Commodities, 2009–2011* 7

Acknowledgments

Arief Anshory Yusuf of Universitas Padjadjaran is the author of this report. He would like to thank USAID-SEADI project for funding this study, Geoffrey Hewings, Gus Papanek, Moekti Soejachmoen, and Tim Buehrer for useful comments and suggestions, and Megananda for excellent research assistance. All errors are the author's full responsibility.

Abstract

There has been increasing attention given to the recent increase in Indonesian inequality. From 2009 to 2011, the Gini coefficient increased from 0.37 to 0.41, the highest recorded in Indonesian history. During the same period, the world prices of many Indonesian export commodities doubled. Indonesia's export sectors, particularly mining, are highly capital intensive and skilled-labor intensive, which may increase the returns on factors used more intensively in those sectors, and thus has a tendency to increase inequality. Using the INDONESIA-E3 model, a Computable General Equilibrium model of an Indonesian economy, this paper investigates to what extent the increase in the world prices of Indonesia's main commodity export (estate crops and mining) contributes to the increase in inequality in Indonesia.

The impact of increases in the prices of the eight largest Indonesian export commodities was simulated for the period 2009–2011. The result suggests that the increases indeed increase inequality, yet at a magnitude of only a quarter of the increase in Gini coefficient observed during the period. The dominant factors behind the increase in the Gini coefficient can be traced to the increase in the world price of mining commodities rather than estate crops. The effect of increases in the world prices of rubber, palm oil, coffee, and tea is negligible and poverty reducing in rural areas. But the effect of an increase in the world price of coal, oil, gas, and metals generates a significant increase in inequality. These findings suggest that, from the perspective of equality, restricting the export of estate crop commodities in the midst of commodity booms will not be favorable to the poverty reduction agenda, particularly in rural areas.

Keywords: Commodity prices, inequality, Indonesia, General Equilibrium, CGE

1. Introduction

Indonesia can be regarded as successful, by any standard, in increasing GDP per capita. Since the start of the New Order government until the 1997 economic crisis, the country brought about an almost four-fold increase in real income. Increasing average income has been accompanied by an attendant reduction in poverty. The number of poor people fell from 54.2 million in 1976 (40.1 percent of the total population) to 22.5 million (11.3 percent of total population) in 1996 (Alisjahbana et al. 2003).

GINI COEFFICIENT

Despite this achievement of long-run Indonesian economic development, social problems remain. One of them is that the rapid increase in per capita income, despite reducing the poverty incidence, has not been followed by a reduction in income inequality. Indonesian income inequality as measured by the Gini coefficient (one of the most common measure of inequality), however, has not been a topic of public discussion until recently. The reason is that for many years, the Indonesian Gini coefficient was relatively stable, with a magnitude that is regarded in the literature of development economics as acceptable.[1]

Public and political debate over inequality in Indonesia started to receive media attention when the Indonesian Gini coefficient reach 0.41 in 2011, the highest recorded in Indonesian history. The debate received a parliamentary hearing, ending with pressure from the Parliament to include the Gini coefficient as a targeted indicator in the annual budgetary plan.[2] This will prove to be difficult because inequality can be affected by many more factors than poverty incidence. While poverty incidence can surely be reduced by targeted policies or social welfare programs, such programs will not guarantee a reduction in inequality if the income of the rich grows faster than the income of the poor (Investor Daily Indonesia 2012).

Data on income distribution[3] for the past 10 years show that inequality has been rising for five years, from 2008 to 2012, and was relatively stable before 2008. Figure 1 shows the Gini coefficient increasing from 0.35 in 2008 to 0.41 in 2012.[4]

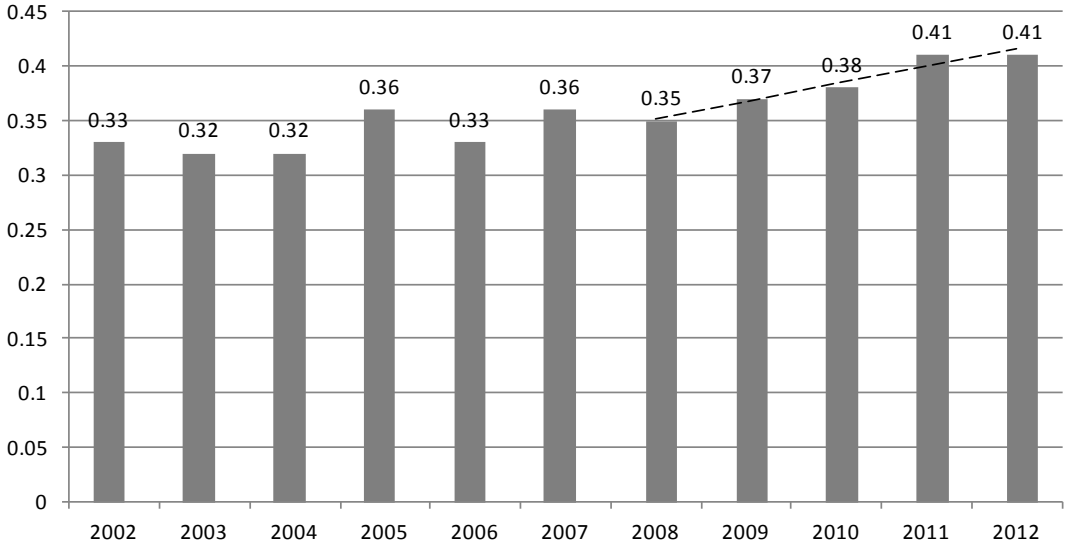
---

[1] Yusuf (2006b) suggests that Indonesia is among the most equal nations, ranking 26th in the world, with former communist economies (such as Slovakia, Belarus, Hungary), Scandinavian countries, and western European welfare nations. This ranking is based on Gini coefficient, a standard indicator to measure inequality. Indonesia is among the very few less-developed countries with high equality. As Yusuf indicates, however, this can be misleading. Inequality measured using expenditure data tends to be lower than inequality measured using income data, because upper-income groups tend to save a larger portion of their income, and the distribution of consumption expenditure is generally more equal than the distribution of income. Second, data used to calculate inequality under-represent certain groups in the population—i.e., the rich.

[2] Normally, only poverty incidence, not inequality indicators like the Gini coefficient, is targeted.

[3] Income distribution is actually distribution of expenditure because it is measured by expenditure rather than income.

Figure 1
Indonesian Gini Coefficient 2002–2012



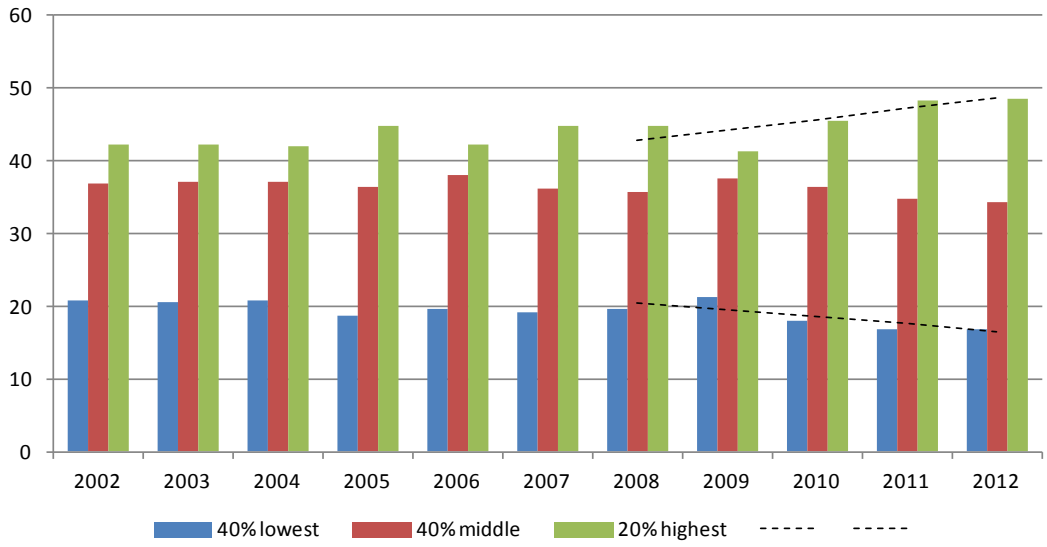
SOURCE: *BPS*

This increasing trend in inequality can also be confirmed by the trend in the income share of the richest 20 percent of households and the poorest 40 percent of households (Figure 2). The income share of the richest 20 percent increased from 41.2 percent in 2009 to 48.6 percent in 2012, while the income share of the lowest 40 percent fell from 21.2 percent in 2009 to only 16.9 percent in 2012.

The recent increase in Indonesian inequality has not only sparked public and political debate, it has also begun to interest academics. But no rigorous analysis on the causes of this trend has yet been published. Many factors can contribute to an increase in inequality. One that is clear is that the increase in inequality was not caused by economic growth alone where the rich get richer and the poor get poorer, because poverty incidence continues to fall. As shown in Figure 2, the increase in inequality was caused mainly by the fact that the top 20 percent has gained a greater share in Indonesian economic growth at the cost of the rest of Indonesians. The income share of the top 20 percent increased from 2009 to 2012 while those of the middle 40 percent and the bottom 20 percent declined.

[4] As noted in BPS website, the methodology of calculating the Gini coefficient changed in 2009. Before 2009, the Gini coefficient was calculated from data (i.e., household survey data (SUSENAS) grouped by income class and the Gini coefficient calculated on the basis of group expenditure) but beginning in 2009, the Gini coefficient has been calculated using individual data (directly calculating the Gini coefficient from all samples in the household survey data). If we begin the observation from 2009, however, with a consistent methodology, an increasing trend is still noticeable (BPS 2012)

Figure 2
Income Distribution of Three Household Groups, 2002–2012



SOURCE: *BPS*

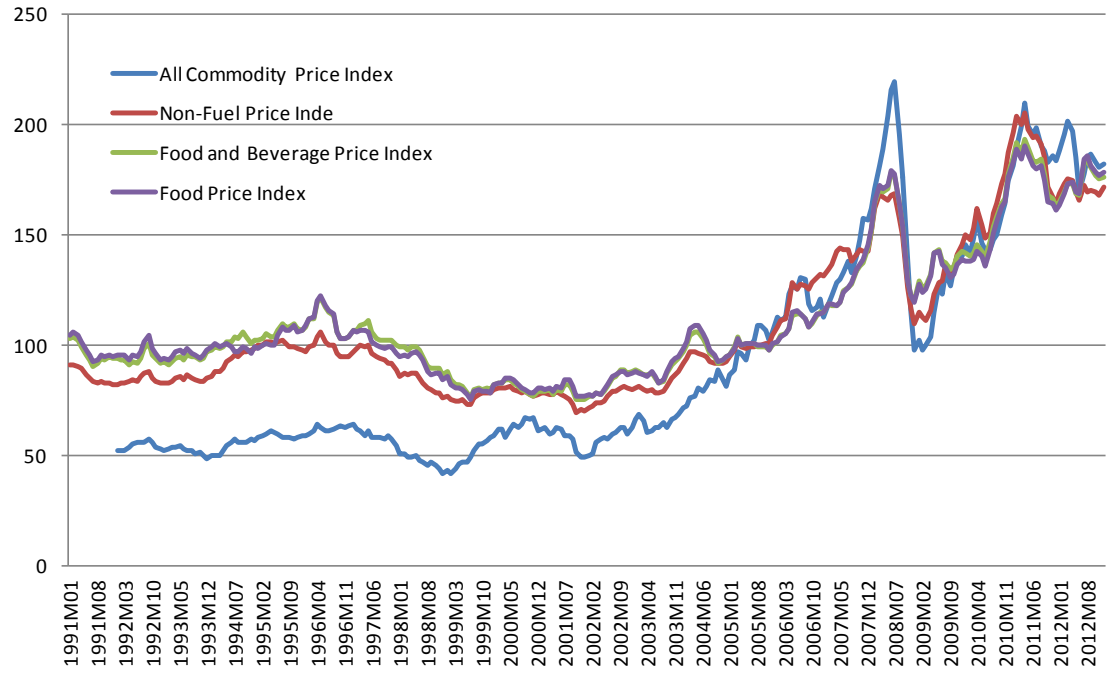
One potential source for these trends is the increase in the price of commodities, particularly for traditional Indonesian export commodities such as estate crops and mining. The reasons, among others, are that some of those sectors, especially mining, are highly capital intensive and skilled-labor intensive. An increase in the price of mining commodities will increase the returns on factors used more intensively in those sectors. In contrast, the effect of the increase in the world price of estate crops is unclear. The Indonesian poor depend more on food crops than estate crops. But in many areas of Indonesia, poor rural laborers earn their livelihoods as workers on plantations.

The data show that the world prices of commodities may indeed prove to be good candidates for the factors behind the recent trend in Indonesian inequality. From 2009 to 2011, the same period when we observed an increasing trend in the Indonesian Gini coefficient, all commodity prices indices doubled (Figure 3). The world prices of many important exports of Indonesian commodities increased rapidly during this period (Figure 4).

Of course, as the time-series data indicate, correlation does not always mean causation. To what extent can the recent increase in inequality in Indonesia be explained by the increase in international prices of commodities? Determining this requires assuming that many other factors that may also increase inequality are constant, which may not be the case. If international prices increase inequality, the magnitude of the increase is not observable because it is counterfactual. The only way to measure the increase is by using an economic model in which we can control many variables, save for the increase in commodity prices, to see how the increase affects inequality. One such model is the computable general equilibrium (CGE) model.

Figure 3

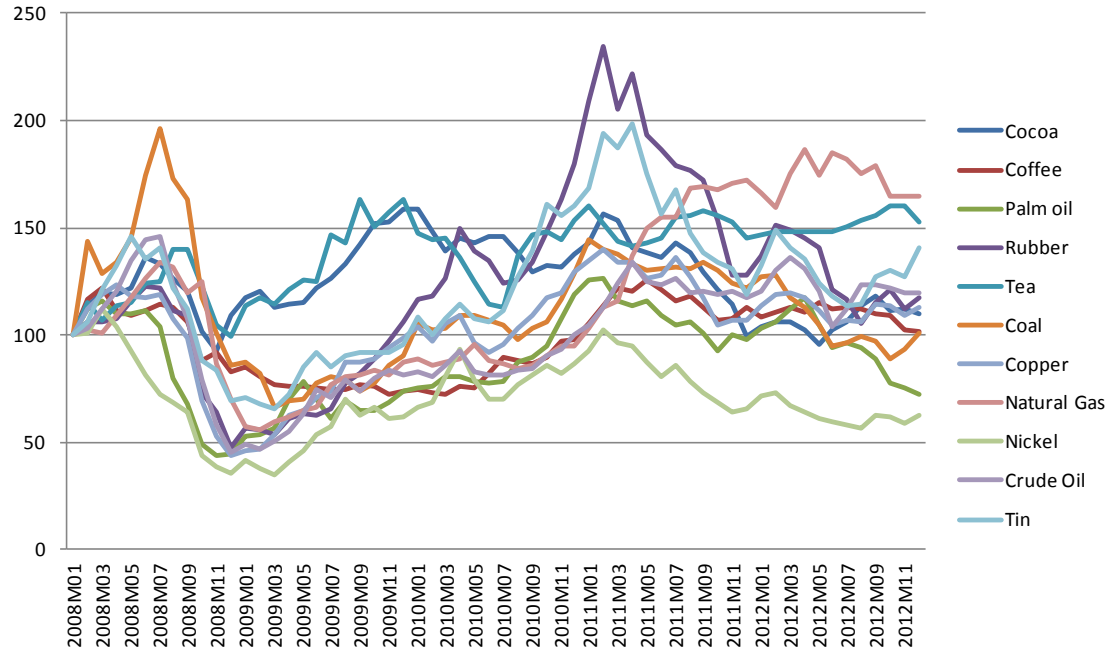
Index of Aggregated Commodity Prices, 1991–2012, Jan 2005=100



SOURCE: IMF

Figure 4

Index of Some Relevant Commodity Prices, 2008–2012, Jan 2005=100



SOURCE: IMF

OBJECTIVE

The objective of this paper is to investigate, within a general equilibrium framework, the extent to which the increase in the international prices of Indonesian main export commodities (estate crops and mining) contribute to the increase in inequality in Indonesia.

2. Methodology

COMPUTABLE GENERAL EQUILIBRIUM MODEL OF THE INDONESIAN ECONOMY

The main methodology used in this paper is a CGE model called INDONESIA-E3. The unique feature of this model is the disaggregation of households by expenditure class, which allows for precise estimation of the distributional impact, including the Gini coefficient. This class of model is called an integrated CGE model (Bourguignon et al. 2003). This class of model normally has disaggregated households and links to each household for both sources of income (through market of factors of production) and for expenditure (through market for commodities). This is different from another class of model, the top-down, in which the CGE model is separate from the poverty module. In the integrated model, there is no separation between the CGE model and the distribution module; both are contained in one model.

INDONESIA-E3 has been used in other research, for example to analyze the distributional impact of fuel pricing reform (Yusuf and Resosudarmo 2008), the poverty and distributional impact of the carbon tax (Ministry of Finance Republic of Indonesia 2009), and greenhouse gas emissions from land-use changes (Warr and Yusuf 2011). A more detailed explanation of the model can be found in Yusuf (2008).

The model contains 69 industries and 69 commodities. The structure of the model is based on the ORANI-G model (Horridge 2000) but has several modifications, of which the most important is multihousehold feature mentioned above. This feature is fully integrated within the general equilibrium structure and enables the model to capture the way that changes in the economy affect households on the expenditure side, through changes in the prices of goods and services that they buy, and also on the income side, through changes in the returns to factors of production that they own.

The theoretical structure of INDONESIA-E3 is conventional for static general equilibrium models. It includes the following major components:

- Household consumption demand systems for each of the 200 households, for each of the 41 categories of consumer goods. These demand functions are derived from the linear expenditure system.
- The household supplies of skilled and unskilled labor are assumed to be exogenous.
- A factor demand system, based on the assumption of CES production technology, that relates the demand for each primary factor to industry outputs and prices of each of the primary factors. This reflects the assumption that factors of production may be substituted for one another in ways that depend on factor prices and on the elasticities of substitution between the factors.
- A distinction between two kinds of labor: skilled labor and labor “nested” in the industry production functions. In each industry, both kinds of labor enter a CES

production function to produce "labor," which itself enters a further CES production function for industry output.

- Leontief assumptions for the demand for intermediate goods. Each intermediate good in each industry is assumed to be demanded in fixed proportion to the gross output of the industry.
- Demands for imported and domestically produced versions of each good, incorporating Armington elasticities of substitution between the two.
- A set of export demand functions, indicating the elasticities of foreign demand for Indonesia's exports.
- A set of equations determining the incomes of the 200 households from their (exogenous) ownership of factors of production, reflecting data derived from the 2008 Social Accounting Matrix, the (endogenous) rates of return to these factors, and any net transfers from elsewhere in the system.
- Rates of import tariffs and excise taxes across commodities, rates of business taxes, value added taxes and corporate income taxes across industries, and rates of personal income taxes across household types which reflect the structure of the Indonesian tax system, using data from the Indonesian Ministry of Finance.
- A set of macroeconomic identities which ensures that standard macroeconomic accounting conventions are observed.

The demand and supply equations for private-sector agents are derived from the solutions to these agents microeconomic optimization problems (cost minimization for firms and utility maximization for households). The agents are assumed to be price-takers, with producers operating in competitive markets with zero profit conditions, reflecting the assumption of constant returns to scale.

SOCIAL ACCOUNTING MATRIX

The multihousehold feature of the model required significant modifications to the database used for constructing the CGE model. In contrast to other ORANI-G–based CGE models, which are based solely on an input-output table, this model requires many pieces of additional information available only from a social accounting matrix. For example, in the Indonesian social accounting matrix constructed by the government of Indonesia's Central Bureau of Statistics, the corporate or enterprise sector owns a great deal of undistributed earnings, and the values of transfers among institutions, such as from government to households, are also recorded. These important features, essential for a multihousehold model, cannot be captured from an I-O based model alone. Accordingly, INDONESIA-E3 incorporates inter-institution transfers, most importantly from the government to households.

The Indonesian Social Accounting Matrix 2008 is the core database for the INDONESIA-E3 model. Analysis of the distributional impact of policies in the past has been constrained by the absence of a social accounting matrix of disaggregated households. The inability of Indonesia's official social accounting matrix to distinguish households by income or expenditure size has impeded accurate estimation of the distributional impact of exogenous shocks to the economy or policy changes, such as calculation of inequality or poverty incidence. The social accounting matrix used in this paper is aggregated from a specially constructed matrix representing the Indonesian economy for 2003, with 69 industries, 69 commodities, and 200 households (100 urban and 100 rural households sorted by expenditure

per capita). Its structure is summarized in Table A-1, but its detailed composition will not be described fully in this paper. Interested readers may refer to Yusuf (2006).

SCENARIOS AND SIMULATIONS STRATEGY

For this analysis, we specify two kinds of primary factor inputs in the model: labor that is mobile across sectors and fixed factors such as capital and land (immobile across sectors). There are five kinds of labor: agricultural labor, formal and informal skilled labor, and formal and informal unskilled labor. We use different assumptions for market closure for each kind of labor. We assume real wage rigidity—that is, that the nominal wage will follow the consumer price index—for formal labor (both skilled and unskilled) but not for agricultural and informal labor. On the basis of this assumption about real wage rigidity, we allow for unemployment to occur in the formal labor market, but in the informal labor market, the real wage will clear the demand and fixed supply of labor. As a result, any shock to the model will cause a larger GDP change because of the change in aggregate employment compared to a situation in which we followed the neoclassical assumption of full employment in all labor markets.

We consider this assumption to be more appropriate for two reasons. First, in Indonesia we observe an acceleration of real wage growth (triggered by a rapid increase in the minimum wage across the country) associated with political reform and stronger unions (Aswicahyono, Hill, and Narjoko 2010; World Bank 2010). Second, the full-employment assumption is more of a long-run situation, whereas in this analysis we would like to identify the more short-term effect of the increases in world commodity prices. For comparison we also carry out simulations using a longer-run closure in which neoclassical full employment is imposed. Here, all labor, regardless of its type, is fully employed and its wage is the market clearing variables. Another assumption in the macroeconomic closure is that government spending and real investment demand for each good are fixed exogenously.

Using the observed data of international commodity prices from 2009 to 2011 we simulate the CGE model by increasing the international prices of the commodities shown in Table 1.

Table 1

Simulated Increase in International Prices of Commodities, 2009–2011

Commodity	% increase
ESTATE CROPS	
Coffee	47.29
Palm oil	63.69
Rubber	145.50
Tea	7.98
MINING	
Coal	65.44
Crude oil	75.65
Natural gas	103.34
Metal	64.78

Note: The increase is real increase as the prices are in constant prices deflated by the MUV price index.
SOURCE: IMF Commodity Price database

We carried out 11 simulations in all:

- Simulation 1—Increase in the world price of rubber by 145.50 percent
- Simulation 2—Increase in the world price of palm oil by 63.69 percent
- Simulation 3—Increase in the world price of coffee by 47.29 percent
- Simulation 4—Increase in the world price of tea by 7.98 percent
- Simulation 5—Increase in the world price of all four crops (Simulations 1 to 4 combined)
- Simulation 6—Increase in the world price of coal by 65.44 percent
- Simulation 7—Increase in the world price of crude oil by 75.65 percent
- Simulation 8—Increase in the world price of gas by 103.34 percent
- Simulation 9—Increase in the world price of metal by 64.78 percent
- Simulation 10—Increase in the price of all 4 mining (Simulations 7 to 9 combined)
- Simulation 11—Increase in the price of all crops and mining (Simulations 5 and 10 combined).

3. Results

Tables A-1 to A-12 (in Appendix A) show selected results from the simulations. Figures A-1 to A-11 (also in Appendix A) show incidence curves, the impact of each of the simulations on real consumption of households by percentile of expenditure per capita (income classes).

MACRO AND SECTORAL IMPACTS

In the short run, when employment in the formal sector is demand determined, the impacts of increases in the world prices of Indonesian main export commodities reduce GDP slightly in almost all simulations, despite increasing exports of the directly affected commodities. The reduction in GDP is more noticeable in the case of increasing world prices of mining commodities. In the short-run scenario, all capital and land are fixed and immobile between sectors; therefore the change in GDP can come only from a factor for which the supply can change, which is formal labor. To increase the output of the mining sector, labor must be put in, and be reallocated from other sectors. Shifting sales of mining products overseas, however, creates a relative scarcity in the domestic markets for raw materials, resulting in a significant reduction in the output of sectors that have an intensive need for raw materials—basic metal, chemical, fertilizer, and refinery. These sectors use predominantly formal labor, and their demands fall, creating a net reduction in aggregate employment.

Aggregate real household consumption, however, increases in almost all simulations, most notably in the simulations that increase the world prices of mining commodities (Table A-1). All simulations tend to increase the cost of living as the consumer price index rises. Consumer prices increase as a result of the transmission from the world price of commodities to the domestic prices, and such commodities are used as intermediates in the production of consumer's products such as oil refinery products, food, and electricity.

The sectoral impact result suggests that the output of the directly affected sectors increases, yet some sectors experience output contractions. Increases in export prices have shifted sales from domestic use to overseas and increased the production cost of some sectors that need the now-reduced supply (Table A-2). For example, in the simulation, increasing world prices of four main export crops reduced the output of manufactured food. An increase in palm oil exports, for example, has a negative effect on the output of the food and beverage sector.

The impact on real factor returns suggests that increases in the world prices of estate crops (Simulation 5) increase the real income of landowners and agricultural workers but reduces the real income of capital owners and other types of workers, especially informal unskilled workers (short run closure, Table A-1 and Table A-6). Increases in the world prices of mining commodities (Simulation 10) increased all fixed factors' real income (land and capital), especially land, yet reduced the real income of all workers. These patterns of the impact on real returns simply represent the factor intensity of the affected sectors. For example, more

than 90 percent of labor employed in the estate crops sector belong to the category of agricultural labor.

INEQUALITY AND POVERTY IMPACTS

The result of the simulations suggests that increases in the international prices of the main Indonesian export commodities increase inequality. The effect of the simulated increases of the prices of eight main Indonesian export commodities at the magnitude observed during the 2009–2011 period is an increase in the Gini coefficient by almost 0.01 point, roughly a quarter of the increase in the Gini coefficient observed during the same period (0.04 point of Gini coefficient).

Disentangling the effects generated by estate crops from those generated by mining suggests that the only source effecting a negative change in income inequality is the increase in the world price of mining commodities. The effect of the increase in the world prices of the main estate crops (rubber, palm oil, coffee, and tea) is barely visible, suggesting its neutral effect on inequality. But increases on the world prices of mining commodities (coal, oil, gas, and metal) increase inequality to a noticeable magnitude. The biggest contributor is the increase in the world price of crude oil, which increases the Gini coefficient by 0.005 points, roughly half of the overall impact.

The impact of the simulations on poverty can also be noted. The results suggest that increases in the world prices of estate crops tend to reduce poverty, particularly in rural areas. The poverty-reducing impact of the increase in the world price of coffee is the most notable (it reduces poverty in rural areas by 0.04 percent). The main reason behind this is that an increase in the world price of coffee leads to an increase in real returns to agricultural labor, which is the main source of earning of poor rural households (see decomposition analysis in Table A-8[5]). Increases in the world prices of mining commodities, however, tend to increase poverty, particularly in urban areas.

The incidence curves reveal some important insights. Increases in the world prices of the four important Indonesian estate crops (Simulation 5) generally benefit rural households rather than urban households. It benefits rural households of all income classes (although the poorer gain more benefit due to increased income from agricultural labor) and some rich urban households (because they are the owners of fixed factors, particularly land).

The incidence curves illustrating the impact of increases in the world prices of four important mining commodities (Simulation 10) suggest that in general, urban households gain more than rural households. For both urban and rural households, however, only higher-income households benefit. The rest experience a decline in their welfare (measured by change in real consumption). Because the mining sector is highly capital and land intensive, an increase in export demand increases the return on those factors more than proportionately. For example, only roughly 20 percent of primary factor payment in the coal industry goes to labor. Meanwhile, about 60 percent of primary factors used in the oil industry are capital. Because capital and land are concentrated in upper-income households, an increase in the price of mining commodities benefits the rich rather than the poor.

[5] See appendix for detailed discussion on decomposition of change in real consumption.

The incidence curve combining increases in the world prices of both estate crops and mining suggest that the increasing income-inequality effect of the world prices of mining dominates. It depicts the nature of the overall impact that increases the Gini coefficient.

The sensitivity analysis of the results of different assumptions about labor market closure can be accommodated by adding an extra set of simulations with full employment labor market closure. The result reveals that the inequality effect is insensitive to differing assumptions. The poverty impact, however, is indeed sensitive to different assumptions about labor market closure.

4. Conclusion and Policy Implications

There has been increasing attention to the recent increase in Indonesian inequality as measured by the Gini coefficient, especially when it reached 0.41 in 2011, the highest recorded in Indonesian history. Recent data on income distribution suggest that inequality has been rising for five years, from 2008 to 2012, but relatively stable before 2008. The income share of the richest 20 percent increased from 41.2 percent in 2009 to 48.6 percent in 2012 while the income share of the lowest 40 percent fell from 21.2 percent in 2009 to only 16.9 percent in 2012.

From 2009 to 2011, the same period when we observed an increasing trend in the Indonesian Gini coefficient, all commodity price indices doubled. With few exceptions, the world prices of many Indonesian export commodities increased rapidly during those period. Many of those sectors, particularly mining, are capital intensive and skilled-labor intensive. An increase in the price of mining commodities will increase the returns to factors more intensively used in those sectors, and thus has a tendency to increase inequality.

Using INDONESIA-E3 model, a CGE model of an Indonesian economy, this paper investigates to what extent the increase in the international prices of Indonesian main export commodities (estate crops and mining) contribute to the increase in inequality in Indonesia. The impacts of price increases of eight main Indonesian export commodities were simulated using the magnitude of changes observed during the period of 2009–2011.

The result suggests that the increase in the international prices of the main Indonesian export commodities does increase inequality, yet the effect is an increase in Gini coefficient by only a quarter of the increase in Gini coefficient observed during the period of 2009 to 2011. The dominant factors behind the increase in Gini coefficient is the increase in the world price of mining commodities instead of estate crops. The effect of increases in the world prices of the main Indonesian export crops (rubber, palm oil, coffee, and tea) is negligible or neutral and also has a poverty-reducing effect in rural areas. But increases in the world prices of mining commodities—coal, oil, gas, and metal—lead to a significant increase in inequality, the largest of which comes from the increase in the world price of crude oil. The result here is an increase in the Gini coefficient by 0.005 points, roughly half of the overall impact.

Several inferences can be drawn from this analysis. First, the results, indicating that the effect of the simulations on Gini coefficient accounts for only a quarter of the change observed during the 2009–2011 period, imply that other factors are behind the recent trend in inequality in Indonesia. Second, from a policy perspective, the results of the simulation may inform policymakers of what to expect in the inequality impact of the increase (or decrease) in the price of different kinds of commodities. For example, as increases in the world prices of main Indonesian export estate crops do not seem to increase inequality yet have a positive impact on rural agricultural workers, policies that limit the movement of those commodities overseas (such as export ban or export taxes) create not only an efficiency cost but also an equity cost.

References

Alisjahbana, A. et al. 2003. Understanding the Determinants and Consequences of Income Inequality in Indonesia. East Asian Development Network (EADN), Bangkok,.

Aswicahyono, H., Hill, H., Narjoko, D. 2010. Indonesian Industrialization: jobless growth? Canberra.

BPS. 2012. Indikator Konsumsi Terpilih, Indonesia 1999, 2002-2012. http://www.bps.go.id/tab_sub/view.php?kat=1&tabel=1&daftar=1&id_subyek=05&notab=8)

Bisnis.com. 2012. Indikator Kesejahteraan Rakyat: Pemerintah & DPR belum sepakat http://bisnis.com/indikator-kesejahteraan-rakyat-pemerintah-and-dpr-belum-sepakat

Bourguignon, F., A.-S. Robilliard, S. Robinson. 2003. Representative Versus Real Households in the Macro-Economic Modeling Of Inequality. Working paper DT 2003-10, DIAL.

Horridge, Mark. 2000. ORANI-G: A General Equilibrium Model of the Aus¬tralian Economy. Centre of Policy Studies/IMPACT Centre Working Papers op-93 Monash University, Centre of Policy Studies/IMPACT Centre. available at http://ideas.repec.org/p/cop/wpaper/op-93.html.

Investor Daily Indonesia. 2012. DPR: Ketimpangan Pendapatan Sudah Mengkhawatirkan. 15 August. http://www.investor.co.id/home/dpr-ketimpangan-pendapatan-sudah-mengkhawatirkan/42892

Ministry of Finance Republic of Indonesia. 2009. Economic and Fiscal Policy Strategies on Climate Change: Indonesian Green Paper. Jakarta,.

Warr, P., Yusuf, A.A. 2011. Reducing Indonesia's deforestation-based greenhouse gas emissions. Australian Journal of Agricultural and Resource Economics 55, 297–321.

World Bank. 2010. Indonesia Jobs Report: Toward Better Jobs and Security for All. Jakarta.

Yusuf, A.A. 2006a. Constructing Indonesian Social Accounting Matrix for Distributional Analysis in the CGE Modelling Framework.

Yusuf, A.A. 2006b. On the re-assessment of inequality in Indonesia: household survey or national account?

Yusuf, A.A. 2008. INDONESIA-E3: An Indonesian Applied General Equilibrium Model for Analyzing the Economy, Equity, and the Environment.

Yusuf, A.A., Resosudarmo, B.P. 2008. Mitigating Distributional Impact of Fuel Pricing Reform: Indonesian Experience. ASEAN Economic Bulletin 25, 32–47.

Appendix A. Tables and Figures

Table A-1

Impact on Macroeconomic Variables and Returns to Factors (percent of Baseline) Short-Run Closure

	SIM-1 Rubber	SIM-2 Palm Oil	SIM-3 Coffee	SIM-4 Tea	SIM-5 SIM 1-4	SIM-6 Coal	SIM-7 Oil	SIM-8 Gas Geo	SIM-9 Metal	SIM-10 SIM 6-9	SIM-11 All
Real GDP	0.00	0.00	-0.02	0.00	-0.02	0.02	-0.39	-0.03	-0.06	-0.44	-0.46
Real household consumption	0.00	0.00	0.05	0.00	0.05	0.67	-0.31	0.07	0.20	0.66	0.71
Export volume index	-0.01	0.00	0.00	0.00	-0.01	-0.26	-0.44	-0.08	-0.28	-0.98	-0.99
Import volume index	0.01	0.01	0.18	0.00	0.20	1.21	0.13	0.20	0.39	1.91	2.11
GDP price index	0.02	0.02	0.24	0.00	0.28	1.86	0.80	0.22	0.67	3.60	3.88
CPI	0.03	0.02	0.21	0.00	0.26	1.02	0.20	0.08	0.19	1.52	1.78
EFFECT ON REAL FACTOR RETURNS											
Wage: skilled	-0.01	-0.01	-0.06	0.00	-0.08	-0.19	-1.04	-0.12	-0.09	-1.41	-1.48
Wage: unskilled	0.04	0.02	0.19	0.00	0.25	0.11	-1.37	-0.15	-0.08	-1.44	-1.18
Capital	-0.02	-0.01	-0.11	0.00	-0.15	1.07	0.77	0.11	0.83	2.78	2.63
Land	0.02	0.03	0.63	0.00	0.68	4.84	11.85	2.10	1.37	19.93	20.52

Table A-2

Impact on Sectoral Output

	Short Run Closure			Long Run Closure		
	SIM-5 Estate	SIM-10 Mining	SIM-11 All	SIM-5 Estate	SIM-10 Mining	SIM-11 All
1 PADI	-0.12	0.32	0.20	-0.12	0.33	0.21
2 JAGUNG	-0.21	0.29	0.09	-0.21	0.26	0.05
3 UMBI	-0.22	0.42	0.20	-0.23	0.11	-0.12
4 KACANG	-0.35	0.23	-0.12	-0.36	0.02	-0.34
5 SAYURAN	-0.24	0.38	0.14	-0.25	0.02	-0.24
6 PANGAN	-0.34	-0.49	-0.84	-0.35	-0.61	-0.96
7 KARET	0.71	-3.33	-2.61	0.76	-1.83	-1.07
8 TEBU	-0.15	-0.53	-0.67	-0.12	0.13	0.01
9 KELAPA	-0.18	0.03	-0.15	-0.18	0.10	-0.08
10 KLPSAWIT	0.07	-2.29	-2.20	0.11	-1.02	-0.91
11 TANSERAT	-0.28	-0.44	-0.72	-0.28	-0.29	-0.57
12 TEMBAKAU	0.05	-0.36	-0.31	0.07	0.26	0.33
13 KOPI	11.39	-0.85	11.01	11.39	-0.81	10.99
14 TEH	-0.02	0.37	0.35	-0.02	0.59	0.57
15 CENGKEH	0.02	0.08	0.10	0.04	0.76	0.80
16 KEBUN	-0.29	-1.65	-1.96	-0.28	-1.55	-1.85
17 TANAMAN	-0.12	0.00	-0.11	-0.12	0.05	-0.06
18 TERNAK	-0.14	0.47	0.33	-0.14	0.53	0.39
19 UNGGAS	-0.16	0.53	0.36	-0.16	0.58	0.41
20 KAYU	-0.03	-0.02	-0.05	-0.02	0.27	0.25
21 HUTAN	-0.05	-0.08	-0.13	-0.04	0.08	0.04
22 IKAN	-0.06	0.07	0.01	-0.06	0.02	-0.04
23 BTBARA	-0.01	2.20	2.20	0.00	2.39	2.39
24 MINYAK	-0.01	0.92	0.92	0.00	0.99	0.99
25 GASGEO	0.00	0.23	0.22	0.00	0.29	0.29
26 LOGAM	-0.01	0.77	0.76	0.00	0.98	0.98
27 TAMBANG	0.00	-0.22	-0.22	0.00	0.04	0.05
28 PTGHEWAN	-0.02	0.81	0.79	0.01	1.51	1.52
29 MAKANAN	-0.06	0.43	0.38	-0.03	1.37	1.34
30 MINLEMAK	-0.33	0.34	0.02	-0.29	1.61	1.33
31 BERAS	-0.12	0.33	0.21	-0.12	0.34	0.21
32 TEPUNG	0.04	0.87	0.91	0.07	1.69	1.76
33 GULA	-0.15	-0.56	-0.71	-0.12	0.12	0.00
34 OTHFOOD	-0.29	0.58	0.29	-0.27	1.17	0.90
35 MINUMAN	0.04	0.83	0.87	0.07	1.68	1.75
36 ROKOK	0.09	0.26	0.35	0.11	1.10	1.21
37 SPINNING	-0.11	-1.55	-1.65	-0.04	0.56	0.52
38 TEKSTIL	-0.05	-0.66	-0.71	0.03	1.71	1.74

	Short Run Closure			Long Run Closure		
	SIM-5 Estate	SIM-10 Mining	SIM-11 All	SIM-5 Estate	SIM-10 Mining	SIM-11 All
39 BMBKAYU	-0.03	0.24	0.21	0.00	1.17	1.16
40 KERTAS	-0.09	-1.20	-1.29	-0.02	0.77	0.75
41 KIMIA	-0.08	-19.03	-19.07	-0.02	-17.72	-17.72
42 PUPUK	0.14	-11.76	-11.59	0.19	-10.70	-10.49
43 NONBBM	-0.03	-3.61	-3.64	-0.02	-3.27	-3.29
44 BBM	-0.02	-9.22	-9.23	0.03	-8.13	-8.10
45 KARETPLS	-0.17	-3.59	-3.73	-0.12	-2.10	-2.20
46 MINPROD	-0.04	-1.07	-1.12	0.01	0.31	0.32
47 SEMEN	-0.01	-1.26	-1.28	0.00	-1.03	-1.04
48 BESIDSR	-0.09	-9.84	-9.93	-0.06	-8.98	-9.03
49 LOGAMDSR	-0.03	-15.53	-15.57	-0.01	-14.91	-14.92
50 BRGLOGAM	-0.06	-1.03	-1.09	-0.01	0.51	0.50
51 MESIN	-0.08	-0.74	-0.82	-0.01	1.33	1.32
52 ALATAKT	-0.05	0.28	0.22	0.03	2.75	2.78
53 OTHMANUF	-0.18	-2.08	-2.25	-0.06	1.56	1.50
54 UTILITY	0.02	-1.83	-1.80	0.06	-0.85	-0.79
55 CONSTR	0.00	-0.03	-0.03	0.00	0.03	0.03
56 DAGANG	-0.05	-0.45	-0.49	-0.02	0.38	0.36
57 RESTHOT	-0.04	0.74	0.70	-0.02	1.38	1.36
58 ANGKUTKA	0.07	-1.04	-0.97	0.11	0.12	0.22
59 ANGDAR	0.04	-0.41	-0.37	0.07	0.55	0.62
60 ANGAIR	-0.12	-2.55	-2.65	-0.06	-0.76	-0.82
61 ANGUDR	0.01	-0.42	-0.41	0.04	0.70	0.74
62 JASAAKT	-0.07	-0.40	-0.46	-0.02	1.28	1.26
63 KOMUNI	0.01	0.54	0.55	0.04	1.34	1.38
64 KEUANGAN	0.00	-0.22	-0.21	0.03	0.81	0.85
65 BANGJASA	-0.01	0.13	0.12	0.02	0.88	0.89
66 PUBLIC	0.00	0.06	0.06	0.01	0.25	0.26
67 SOSMAS	0.01	0.14	0.16	0.04	0.98	1.02
68 JASALAIN	0.04	0.45	0.49	0.07	1.41	1.47
69 LAINNYA	-0.05	-1.94	-1.99	-0.01	-0.89	-0.90

Table A-3

Impact on Eksport Short-Run Closure

	SIM-1	SIM-2	SIM-3	SIM-4	SIM-5	SIM-6	SIM-7	SIM-8	SIM-9	SIM-10
	Rubber	PalmOil	Cofee	Tea	SIM 1-4	Coal	Oil	GasGeo	Metal	SIM 6-9
7 KARET	117.469				116.091					
10 KLPSAWIT		50.349			49.699					
13 KOPI			19.193		19.128					
14 TEH				6.694	6.023					
23 BTBARA						5.651				5.678
24 MINYAK							3.046			3.225
25 GASGEO								52.977		61.516
26 LOGAM									19.963	22.174
Total Export Commodity	-0.006	-0.004	-0.005	0.000	-0.015	-0.258	-0.439	-0.076	-0.277	-0.982

Table A-4

Impact on Employment by Labor Type, Short-Run Closure

	SIM-1	SIM-2	SIM-3	SIM-4	SIM-5	SIM-6	SIM-7	SIM-8	SIM-9	SIM-10	SIM-11
	Rubber	Palm Oil	Coffee	Tea	SIM 1-4	Coal	Oil	Gas Geo	Metal	SIM 6-9	All
1 Aglab	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 Usk_paid	-0.02	-0.01	-0.09	0.00	-0.12	-0.10	-2.69	-0.25	-0.36	-3.34	-3.44
3 Usk_unpaid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 Skl_paid	-0.01	-0.01	-0.04	0.00	-0.06	0.01	-1.83	-0.11	-0.10	-1.97	-2.02
5 Skl_unpaid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table A-5

Impact on Real Wage by Labor Type Short Run Closure

	SIM-1	SIM-2	SIM-3	SIM-4	SIM-5	SIM-6	SIM-7	SIM-8	SIM-9	SIM-10	SIM-11
	Rubber	PalmOil	Cofee	Tea	SIM 1-4	Coal	Oil	GasGeo	Metal	SIM 6-9	All
1 Aglab	0.14	0.08	0.66	0.00	0.88	0.56	-2.13	-0.10	0.17	-1.42	-0.54
2 Usk_paid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3 Usk_unpaid	-0.05	-0.03	-0.26	0.00	-0.35	-0.54	-4.27	-0.80	-0.97	-6.42	-6.73
4 Skl_paid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5 Skl_unpaid	-0.05	-0.03	-0.26	0.00	-0.34	-0.75	-4.17	-0.49	-0.37	-5.64	-5.94

Table A-6

Impact on Real Income by Labor Type Short Run Closure

	SIM-1	SIM-2	SIM-3	SIM-4	SIM-5	SIM-6	SIM-7	SIM-8	SIM-9	SIM-10	SIM-11
	Rubber	PalmOil	Cofee	Tea	SIM 1-4	Coal	Oil	GasGeo	Metal	SIM 6-9	All
1 Aglab	0.14	0.08	0.66	0.00	0.88	0.56	-2.13	-0.10	0.17	-1.42	-0.54
2 Usk_paid	-0.02	-0.01	-0.09	0.00	-0.12	-0.10	-2.69	-0.25	-0.36	-3.34	-3.44
3 Usk_unpaid	-0.05	-0.03	-0.26	0.00	-0.35	-0.54	-4.27	-0.80	-0.97	-6.42	-6.73
4 Skl_paid	-0.01	-0.01	-0.04	0.00	-0.06	0.01	-1.83	-0.11	-0.10	-1.97	-2.02
5 Skl_unpaid	-0.05	-0.03	-0.26	0.00	-0.34	-0.75	-4.17	-0.49	-0.37	-5.64	-5.94

Table A-7

Poverty and Inequality Short Run Closure

	SIM-1 Rubber	SIM-2 Palm Oil	SIM-3 Coffee	SIM-4 Tea	SIM-5 SIM 1-4	SIM-6 Coal	SIM-7 Oil	SIM-8 Gas Geo	SIM-9 Metal	SIM-10 SIM 6-9	SIM-11 All
POVERTY											
URBAN											
Poverty incidence ex ante (%)	8.890	8.890	8.890	8.890	8.890	8.890	8.890	8.890	8.890	8.890	8.890
Poverty incidence ex post (%)	8.892	8.891	8.897	8.890	8.900	8.865	9.250	8.923	8.918	9.278	9.287
Change	0.002	0.001	0.007	0.000	0.010	-0.025	0.360	0.033	0.028	0.388	0.397
RURAL											
Poverty incidence ex ante (%)	15.250	15.250	15.250	15.250	15.250	15.250	15.250	15.250	15.250	15.250	15.250
Poverty incidence ex post (%)	15.242	15.245	15.208	15.250	15.196	15.139	15.513	15.261	15.234	15.384	15.331
Change	-0.008	-0.005	-0.042	0.000	-0.054	-0.111	0.263	0.011	-0.016	0.134	0.081
URBAN + RURAL											
Poverty incidence ex ante (%)	12.084	12.084	12.084	12.084	12.084	12.084	12.084	12.084	12.084	12.084	12.084
Poverty incidence ex post (%)	12.081	12.082	12.066	12.084	12.062	12.016	12.394	12.105	12.089	12.344	12.322
Change	-0.003	-0.002	-0.017	0.000	-0.022	-0.068	0.311	0.022	0.006	0.261	0.238
INEQUALITY											
URBAN											
Gini coefficient ex ante	0.369	0.369	0.369	0.369	0.369	0.369	0.369	0.369	0.369	0.369	0.369
Gini coefficient ex post	0.369	0.369	0.369	0.369	0.369	0.371	0.374	0.370	0.370	0.378	0.378
Change	0.000	0.000	0.000	0.000	0.000	0.002	0.005	0.001	0.001	0.009	0.010
RURAL											
Gini coefficient ex ante	0.277	0.277	0.277	0.277	0.277	0.277	0.277	0.277	0.277	0.277	0.277
Gini coefficient ex post	0.277	0.277	0.277	0.277	0.277	0.278	0.280	0.278	0.278	0.282	0.282

	SIM-1 Rubber	SIM-2 Palm Oil	SIM-3 Coffee	SIM-4 Tea	SIM-5 SIM 1-4	SIM-6 Coal	SIM-7 Oil	SIM-8 Gas Geo	SIM-9 Metal	SIM-10 SIM 6-9	SIM-11 All
Change	0.000	0.000	0.000	0.000	0.000	0.001	0.003	0.000	0.001	0.005	0.005
URBAN + RURAL											
Gini coefficient ex ante	0.371	0.371	0.371	0.371	0.371	0.371	0.371	0.371	0.371	0.371	0.371
Gini coefficient ex post	0.371	0.371	0.371	0.371	0.371	0.372	0.375	0.371	0.372	0.378	0.378
Change	0.000	0.000	0.000	0.000	0.000	0.002	0.004	0.001	0.001	0.007	0.007

Table A-8

Decomposition of Change in Real Expenditure of Marginally Poor Urban Household Short Run Closure (Rp billion)

	SIM-1 Rubber	SIM-2 Palm Oil	SIM-3 Coffee	SIM-4 Tea	SIM-5 SIM 1-4	SIM-6 Coal	SIM-7 Oil	SIM-8 GasGeo	SIM-9 Metal	SIM-10 SIM 6-9	SIM-11 All
Wage income: unskilled	1.39	0.82	9.46	0.01	11.70	36.55	-108.40	-11.08	-8.26	-88.16	-76.11
Wage income: skilled	0.00	0.04	1.55	0.00	1.59	13.93	-52.71	-3.85	-0.48	-41.41	-39.67
Capital	0.04	0.03	0.78	0.00	0.85	15.84	7.34	1.45	7.73	32.73	33.60
Land	0.13	0.14	2.40	0.00	2.67	16.79	34.34	6.20	4.45	61.90	64.48
Others (transfers)	0.35	0.23	2.78	0.00	3.36	13.05	3.80	1.18	2.54	21.02	24.38
Total income	1.92	1.26	16.96	0.02	20.17	96.16	-115.63	-6.11	5.99	-13.92	6.68
Saving	0.10	0.07	0.88	0.00	1.05	5.00	-6.02	-0.32	0.31	-0.72	0.35
Nominal consumption	1.82	1.19	16.08	0.02	19.12	91.15	-109.61	-5.79	5.68	-13.20	6.33
Living cost	2.52	1.65	19.22	0.03	23.41	84.22	21.36	6.38	16.66	130.56	153.83
Real expenditure	-0.70	-0.45	-3.13	-0.01	-4.29	6.93	-130.97	-12.16	-10.98	-143.76	-147.50

Table A-9

Decomposition of Change in Real Expenditure of Marginally Poor Urban Household Short Run Closure (Rp billion)

	SIM-1 Rubber	SIM-2 Palm Oil	SIM-3 Coffee	SIM-4 Tea	SIM-5 SIM 1-4	SIM-6 Coal	SIM-7 Oil	SIM-8 Gas Geo	SIM-9 Metal	SIM-10 SIM 6-9	SIM-11 All
Wage income: unskilled	4.84	2.95	27.15	0.05	35.02	61.54	-117.23	-7.82	3.23	-56.12	-20.52
Wage income: skilled	0.00	0.01	0.55	0.00	0.55	5.02	-19.52	-1.45	-0.20	-15.53	-14.92
Capital	0.06	0.05	1.18	0.00	1.29	24.02	11.13	2.20	11.73	49.63	50.95
Land	0.20	0.21	3.63	0.00	4.04	25.46	52.07	9.40	6.74	93.85	97.76
Others (Transfers)	0.15	0.10	1.24	0.00	1.49	6.23	2.01	0.56	1.16	10.17	11.66
Total Income	5.25	3.32	33.75	0.05	42.40	122.27	-71.55	2.88	22.66	82.00	124.94
Saving	0.31	0.20	1.98	0.00	2.49	7.19	-4.21	0.17	1.33	4.82	7.35
Nominal consumption	4.94	3.13	31.76	0.05	39.90	115.08	-67.34	2.72	21.33	77.18	117.59
Living cost	2.78	1.79	19.93	0.03	24.54	83.92	8.76	6.03	17.13	118.55	143.32
Real expenditure	2.16	1.34	11.83	0.02	15.36	31.16	-76.10	-3.30	4.20	-41.37	-25.73

Table A-10

Impact on Macroeconomic Variables and Returns to Factors (% of Baseline) Long Run Closure

	SIM-1	SIM-2	SIM-3	SIM-4	SIM-5	SIM-6	SIM-7	SIM-8	SIM-9	SIM-10	SIM-11
	Rubber	Palm Oil	Coffee	Tea	SIM 1-4	Coal	Oil	Gas Geo	Metal	SIM 6-9	All
Real GDP	0.00	0.00	0.00	0.00	0.00	0.03	0.20	0.02	0.00	0.24	0.24
Real household consumption	0.00	0.00	0.06	0.00	0.06	0.68	-0.07	0.09	0.21	0.92	0.98
Export volume index	0.00	0.00	0.03	0.00	0.03	-0.24	0.67	0.01	-0.17	0.28	0.31
Import volume index	0.01	0.01	0.16	0.00	0.18	1.20	-0.33	0.16	0.34	1.34	1.51
GDP price index	0.02	0.01	0.20	0.00	0.23	1.84	-0.40	0.13	0.56	2.16	2.39
Consumer price index (CPI)	0.02	0.01	0.19	0.00	0.23	1.01	-0.59	0.02	0.12	0.59	0.82
EFFECT ON REAL FACTOR RETURNS											
Wage: skilled	-0.02	-0.01	-0.07	0.00	-0.10	-0.11	-2.13	-0.13	-0.02	-2.34	-2.43
Wage: unskilled	0.03	0.02	0.13	0.00	0.17	0.01	-2.84	-0.33	-0.36	-3.47	-3.28
Capital	-0.02	-0.01	-0.11	0.00	-0.15	1.06	0.84	0.11	0.82	2.82	2.67
Land	0.03	0.04	0.67	0.00	0.74	4.87	13.55	2.22	1.52	22.01	22.67

Table A-11

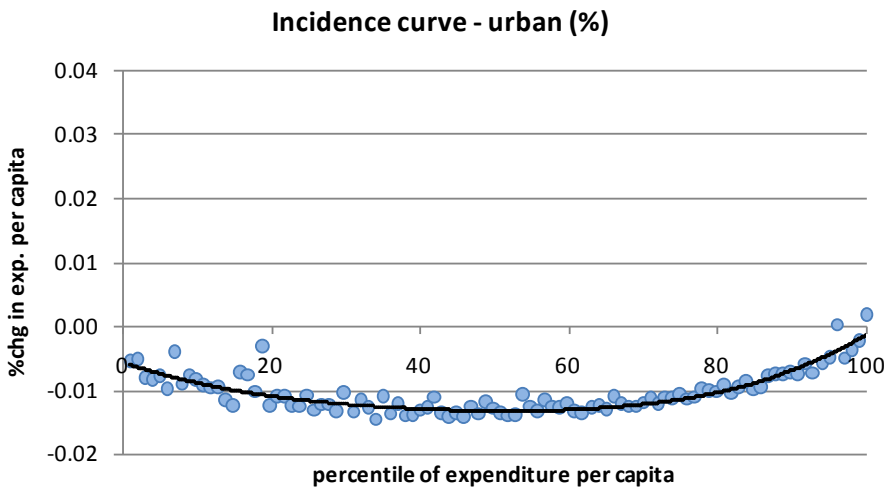
Poverty and Inequality Long-run Closure

	SIM-1	SIM-2	SIM-3	SIM-4	SIM-5	SIM-6	SIM-7	SIM-8	SIM-9	SIM-10	SIM-11
	Rubber	Palm Oil	Coffee	Tea	SIM 1-4	Coal	Oil	Gas Geo	Metal	SIM 6-9	All
POVERTY											
URBAN											
Poverty incidence ex ante (%)	8.890	8.890	8.890	8.890	8.890	8.890	8.890	8.890	8.890	8.890	8.890
Poverty incidence ex post (%)	8.891	8.891	8.896	8.890	8.898	8.866	9.190	8.919	8.914	9.216	9.224
Change	0.001	0.001	0.006	0.000	0.008	-0.024	0.300	0.029	0.024	0.326	0.334
RURAL											
Poverty incidence ex ante (%)	15.250	15.250	15.250	15.250	15.250	15.250	15.250	15.250	15.250	15.250	15.250
Poverty incidence ex post (%)	15.242	15.245	15.204	15.250	15.191	15.139	15.373	15.251	15.224	15.233	15.175
Change	-0.008	-0.005	-0.046	0.000	-0.059	-0.111	0.123	0.001	-0.026	-0.017	-0.075
URBAN + RURAL											
Poverty incidence ex ante (%)	12.084	12.084	12.084	12.084	12.084	12.084	12.084	12.084	12.084	12.084	12.084
Poverty incidence ex post (%)	12.080	12.081	12.064	12.084	12.058	12.016	12.295	12.098	12.082	12.237	12.212
Change	-0.004	-0.002	-0.020	0.000	-0.026	-0.068	0.211	0.015	-0.001	0.154	0.129
INEQUALITY											
URBAN											
Gini coefficient ex ante	0.369	0.369	0.369	0.369	0.369	0.369	0.369	0.369	0.369	0.369	0.369
Gini coefficient ex post	0.369	0.369	0.369	0.369	0.369	0.371	0.374	0.370	0.370	0.378	0.379
Change	0.000	0.000	0.000	0.000	0.000	0.002	0.005	0.001	0.001	0.010	0.010
RURAL											
Gini coefficient ex ante	0.277	0.277	0.277	0.277	0.277	0.277	0.277	0.277	0.277	0.277	0.277

	SIM-1	SIM-2	SIM-3	SIM-4	SIM-5	SIM-6	SIM-7	SIM-8	SIM-9	SIM-10	SIM-11
	Rubber	Palm Oil	Coffee	Tea	SIM 1-4	Coal	Oil	Gas Geo	Metal	SIM 6-9	All
Gini coefficient ex post	0.277	0.277	0.277	0.277	0.277	0.278	0.280	0.278	0.278	0.282	0.281
Change	0.000	0.000	0.000	0.000	0.000	0.001	0.002	0.000	0.001	0.004	0.004
URBAN + RURAL											
Gini coefficient ex ante	0.371	0.371	0.371	0.371	0.371	0.371	0.371	0.371	0.371	0.371	0.371
Gini coefficient ex post	0.371	0.371	0.371	0.371	0.371	0.372	0.375	0.371	0.372	0.378	0.378
Change	0.000	0.000	0.000	0.000	0.000	0.002	0.004	0.001	0.001	0.007	0.007

Figure A-1

Impact Of SIM-1 (Rubber Price Increase) on Household Real Consumption Short-run Closure



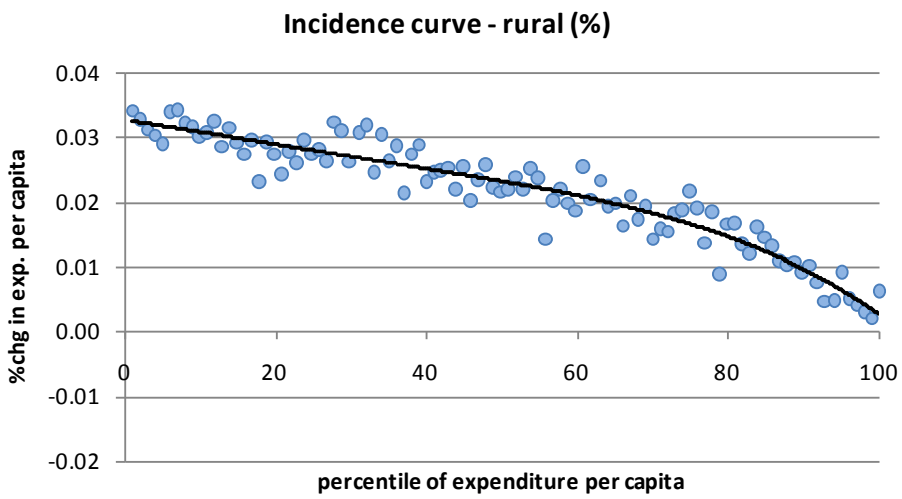
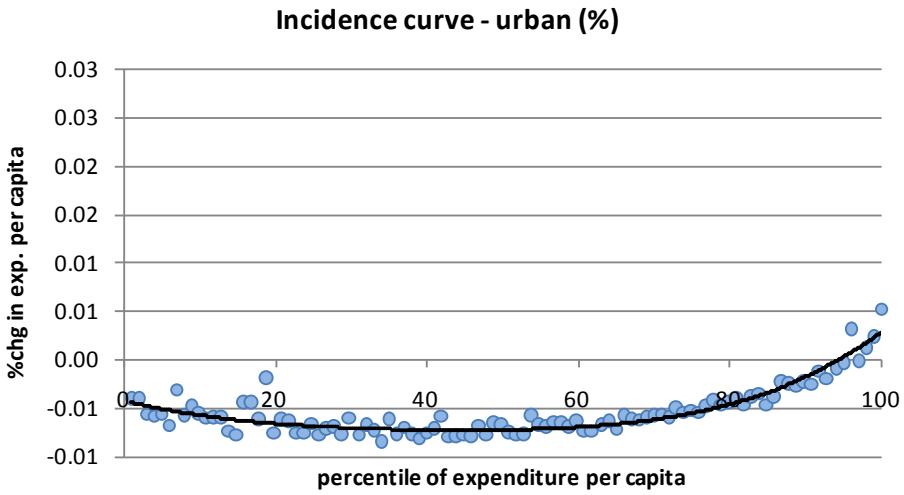


Figure A-2

Impact of SIM-2 (Palm Oil Increase) on Household Real Consumption Short-run Closure



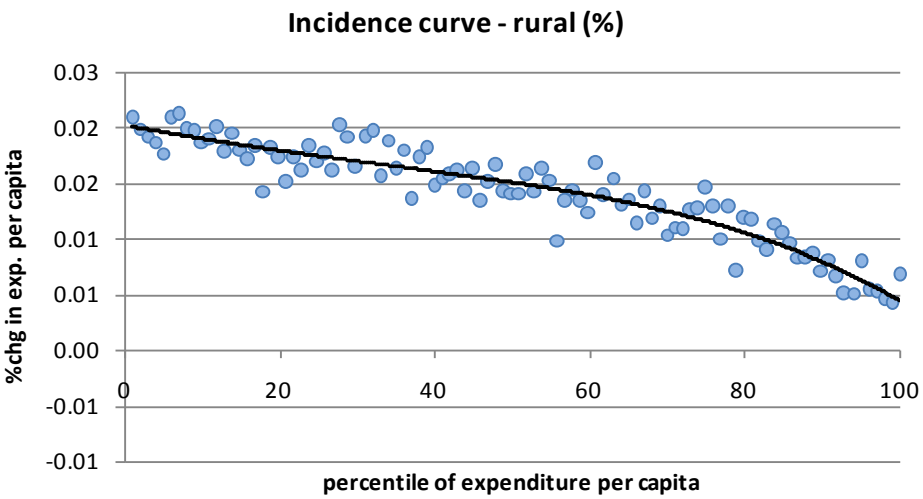
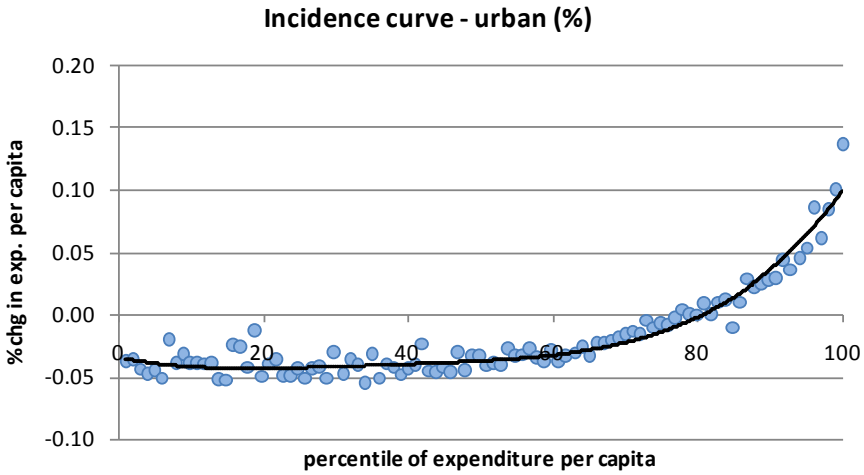


Figure A-3

Impact of SIM-3 (Coffee Increase) on Household Real Consumption Short-run Closure



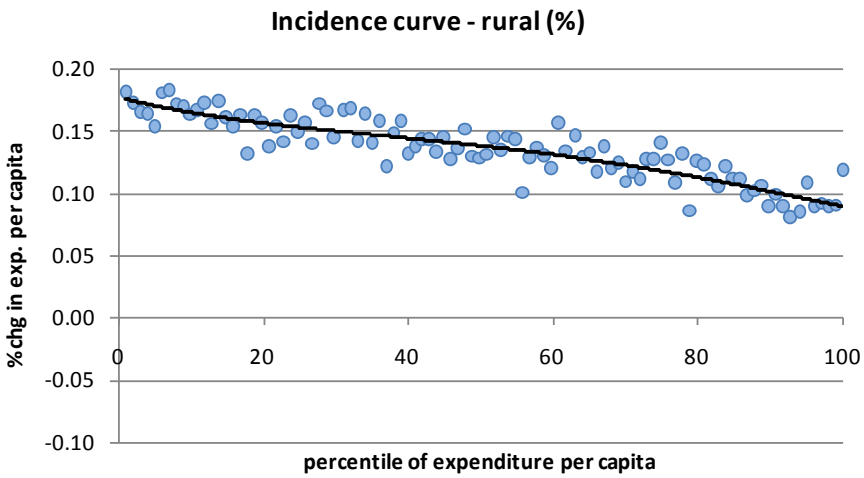
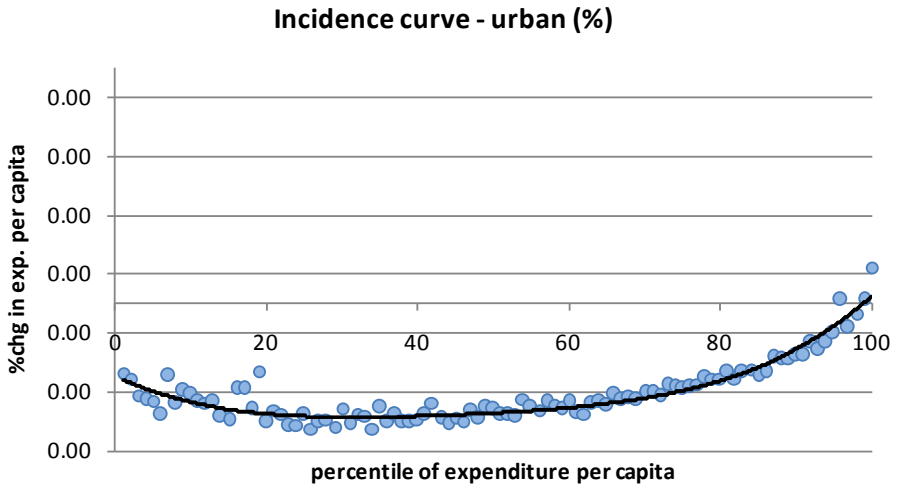


Figure A-4

Impact of SIM-4 (Tea Increase) on Household Real Consumption Short-run Closure



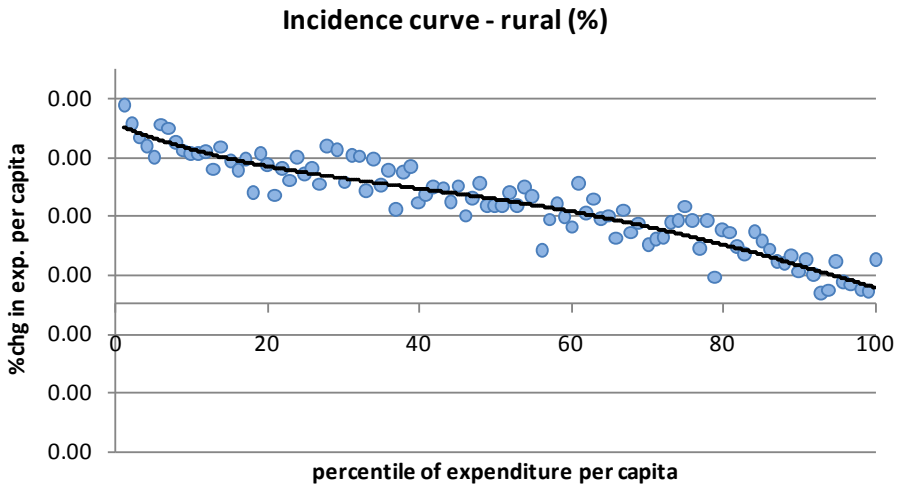
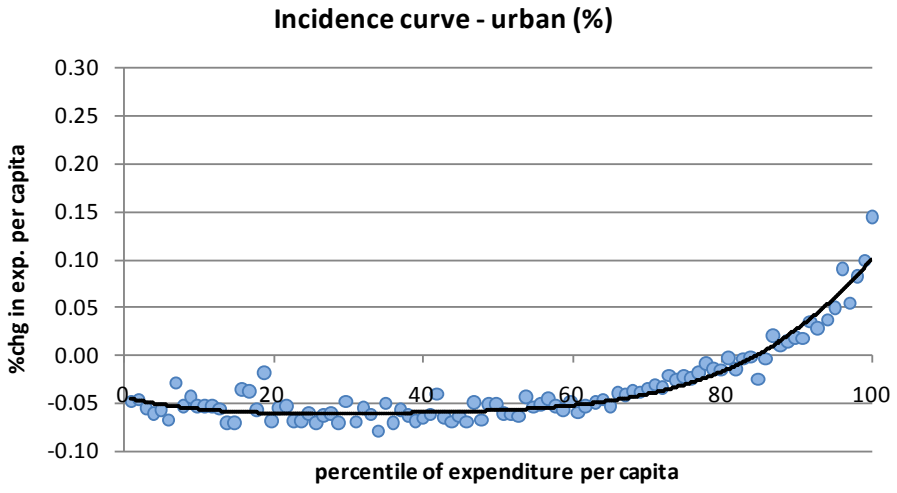


Figure A-5

Impact of SIM-5 (SIM 1-4 Increase) on Household Real Consumption Short-run Closure



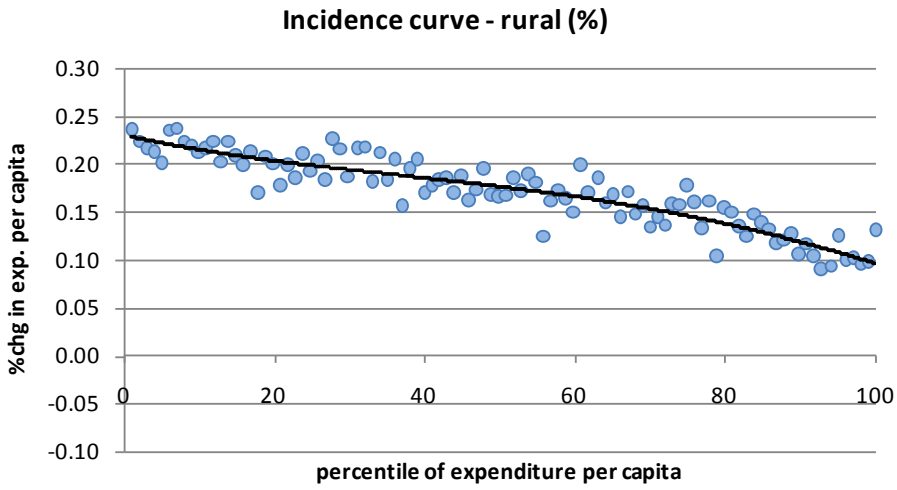
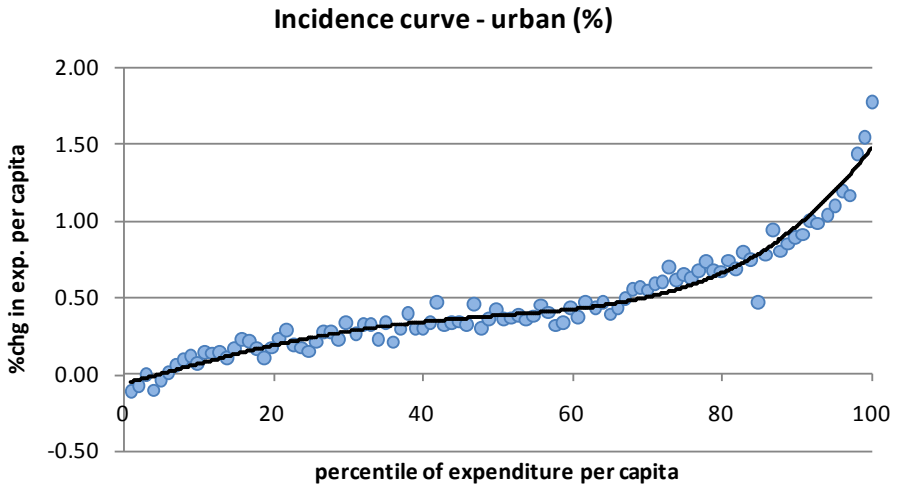


Figure A-6

Impact of SIM-6 (Coal Increase) on Household Real Consumption Short-run Closure



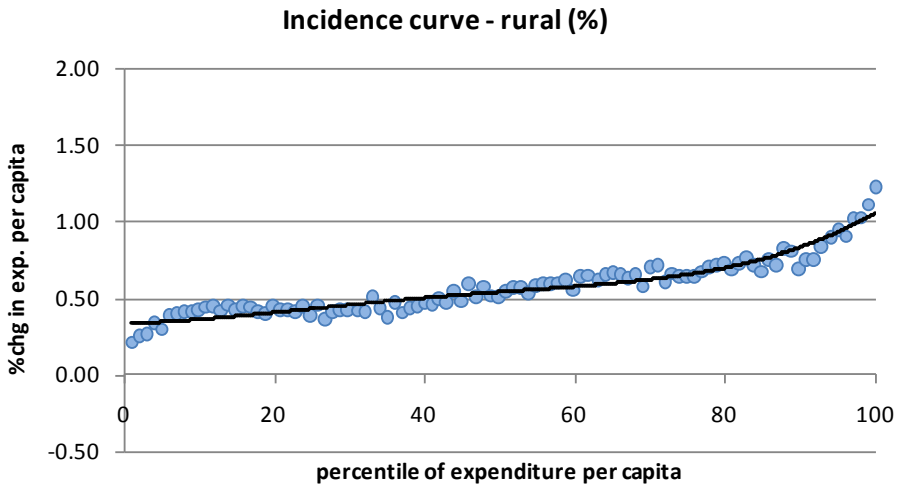
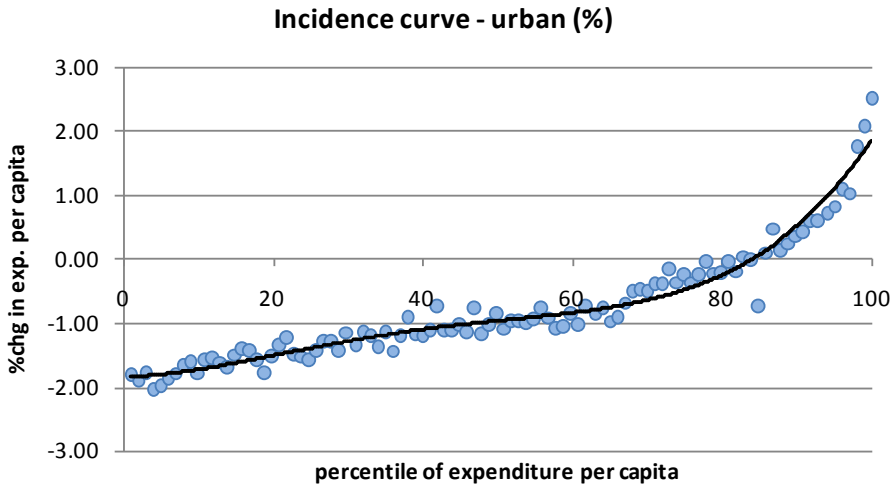


Figure A-7

Impact of SIM-7 (Oil Increase) on Household Real Consumption Short-run Closure



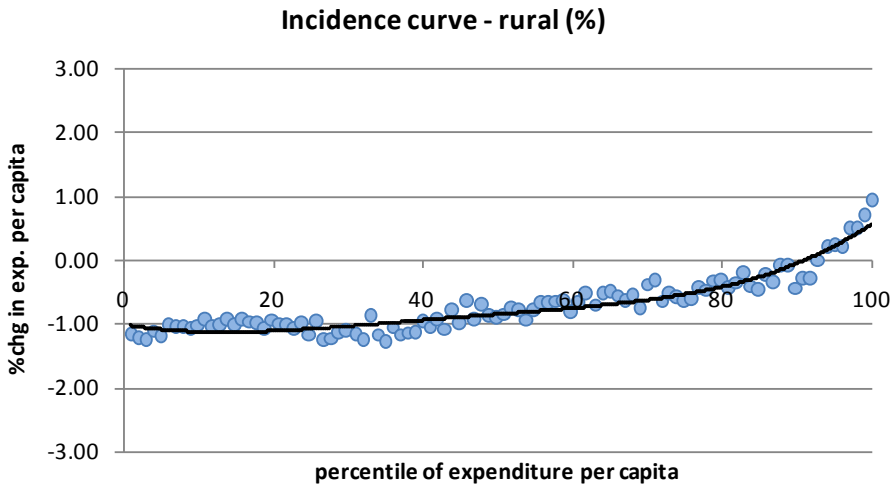
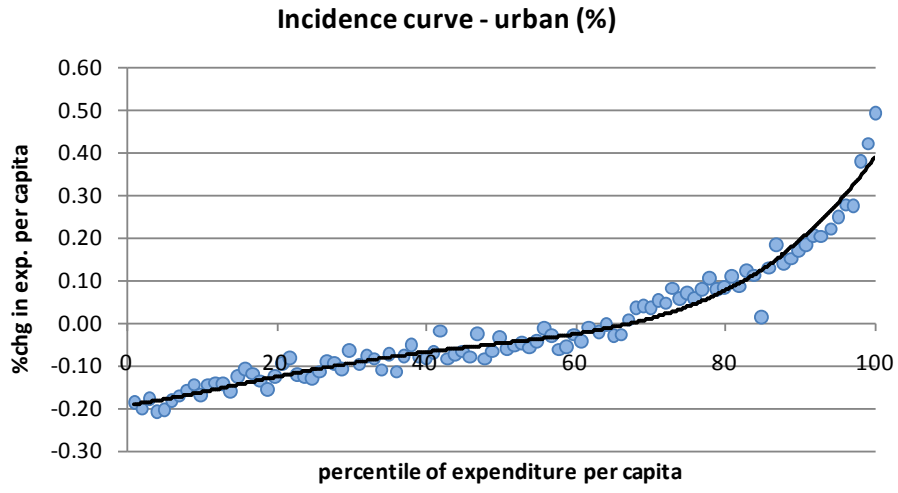


Figure A-8

Impact of SIM-8 (Gas Geo Increase) on Household Real Consumption Short-run Closure



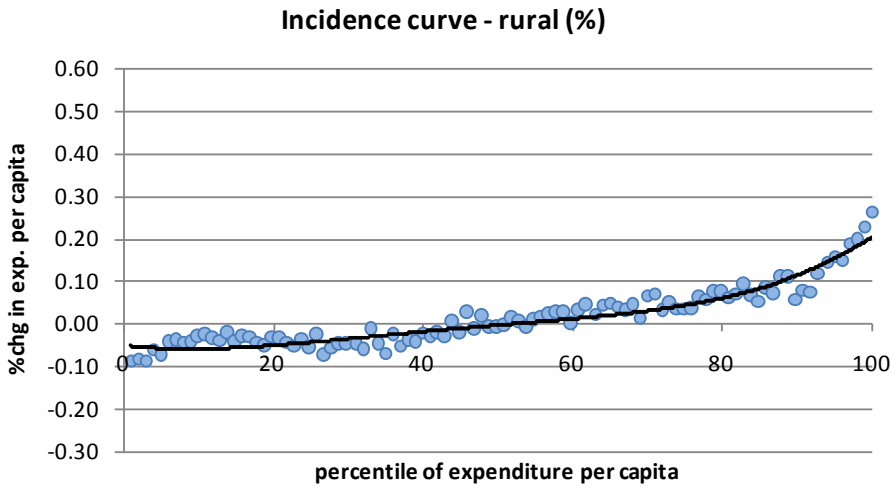
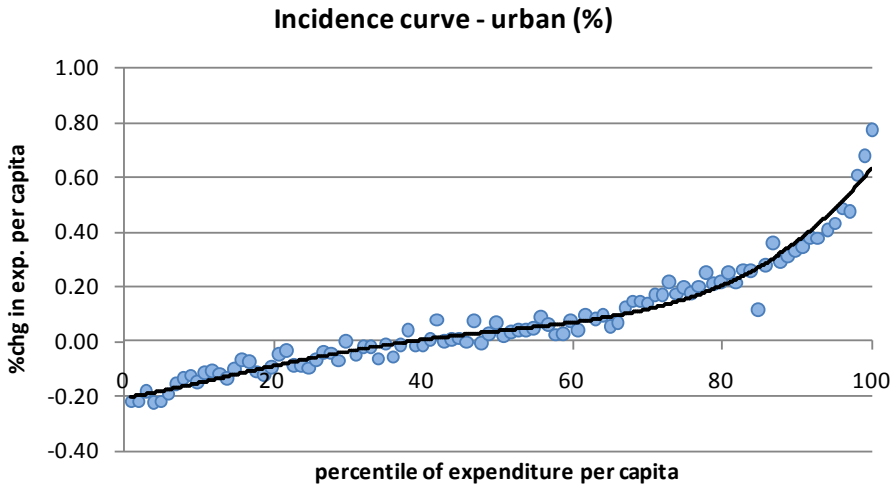


Figure A-9

Impact of SIM-9 (Metal Increase) on Household Real Consumption Short-run Closure



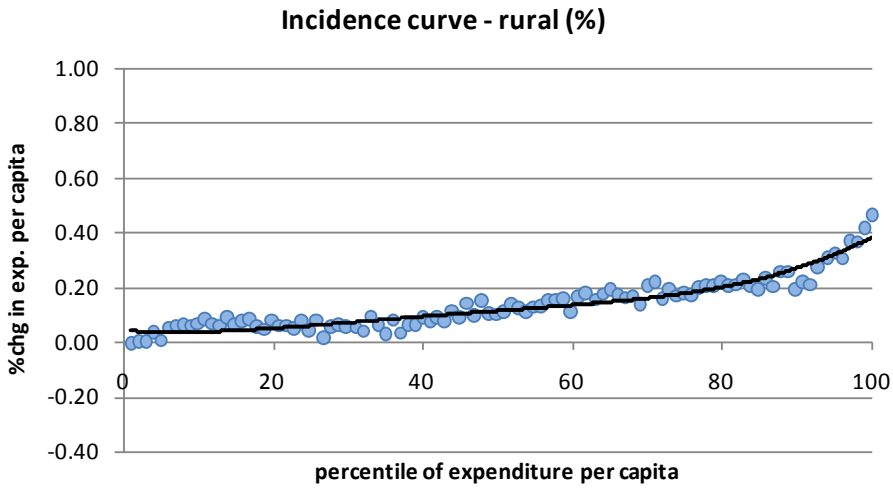
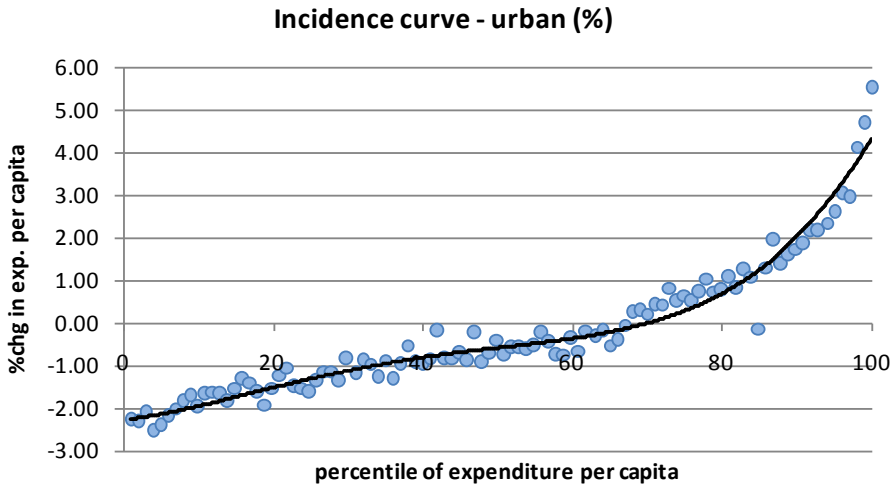


Figure A-10

Impact of SIM-10 (SIM 6-9 Increase) on Household Real Consumption Short-Run Closure



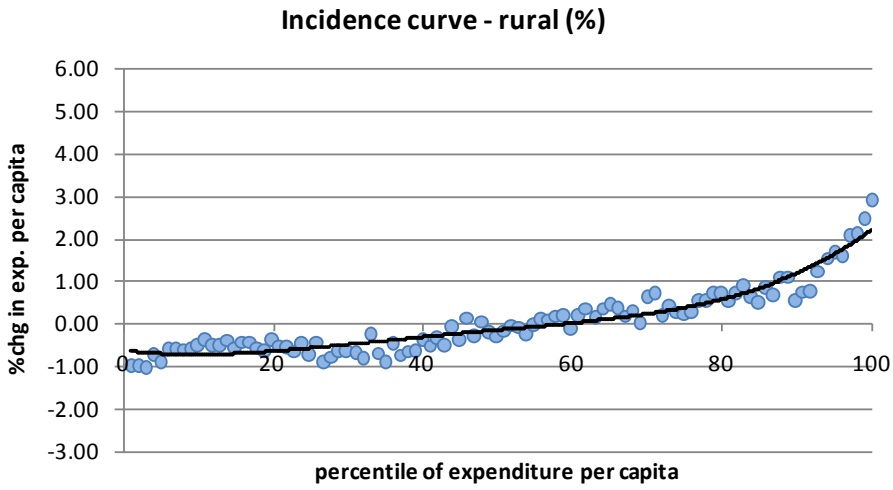
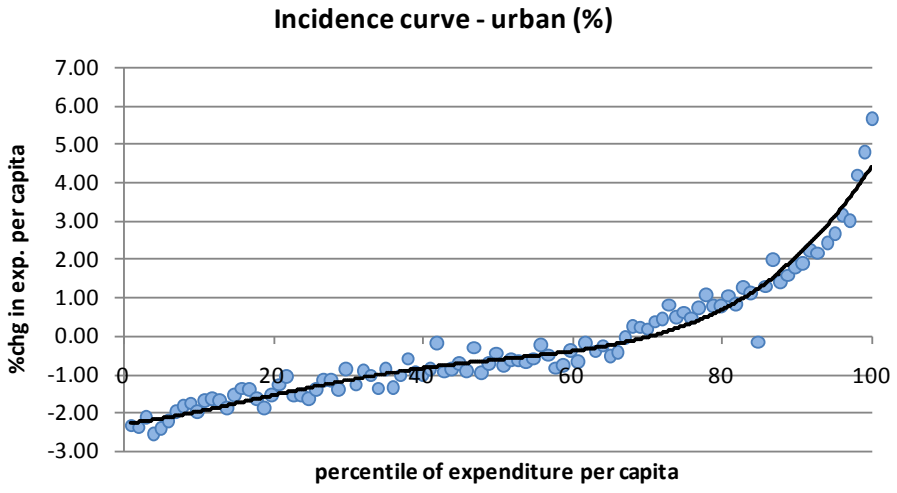


Figure A-11

Impact of SIM-11 (All commodity Increase) on Household Real Consumption Short-run Closure



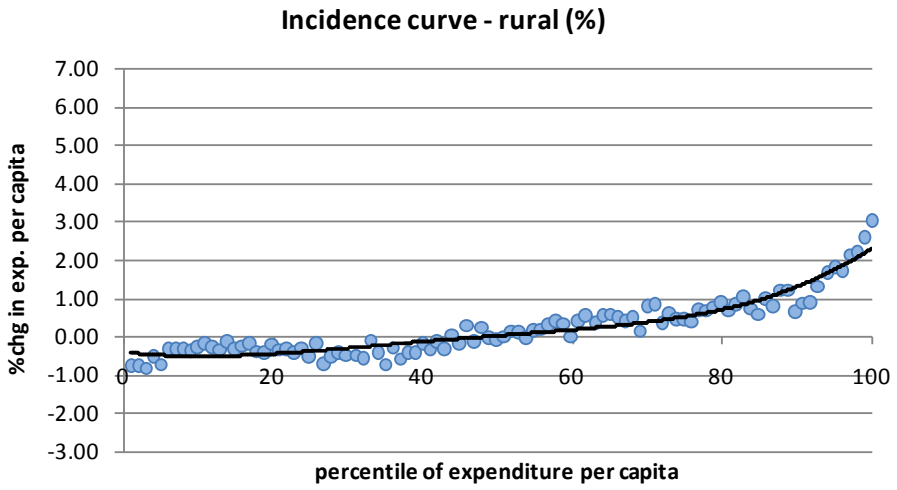


Table A-12

Structure of the Indonesian social accounting matrix

			Commodity		Factor									
		Activities 1…181	Domestic 1…181	Imported 1…181	Labor 1…16	Capital	Ind. Tax	S-I	Households 1…200	Transfers	Enterprises	Gov't	Row	Total
Activities	1 … 181		MAKE Matrix											Industry Sales
Domestic Commodities	1 … 181	Domestic intermediate Input						Domestic Investment	Domestic Hou. Consumption			Domestic Gov't Consumption	Export	Total Dom. Demand
Imported Commodities	1 … 181	Imported Intermediate Input						Imported Investment	Imported Hou. Consumption			Imported Gov't Consumption		Total Import
labor	1 … 16	Salary and Wages											Labor used abroad	Total labor Demand
Capital		Nonlabor											Cap. used abroad	Capital Demand
Ind. Tax		Tax/ Subsidy		Tariff										Ind. Tax Reven.
Urban HH	1 … 100				Labor Income: Urban	Capital Income: Urban				Inter- Hous. Transfer			ROW transfer to HH	Total Hous. Income
Rural HH	1 … 100				labor Income: Rural	Capital Income: Rural				Inter- Hous.. Transfer			ROW transfer to HH	Total Hous. Income
Transfer									Transfer to HH					Int. Hous. Transter
S-I									Household Saving		Enterprise Saving	Gov't Saving		Total Saving
Govern- ment							Ind. Tax Revenue		Direct Tax		Ent. _Traps. to Gov t	Inter G Transfer	ROW Tans. to	Govt Revenue

			Commodity		Factor									
		Activities 1…181	Domestic 1…181	Imported 1…181	Labor 1…16	Capital	Ind. Tax	S-I	Households 1…200	Transfers	Enterprises	Gov't	Row	Total
													Gov t	
Enterprises						Enter- Enter-					Inter Ent. itans.		ROW Trans. to Enter.	Ente. Income
ROW				Import	Foreign labor	Foreign Capital			HH Transfer to abroad		Ent Trans. to abroad	G. Transfer to abroad		Forex Outflow
TOTAL		Industry Costs	Dom. Supply	Import Supply	Labor Supply	Capital Supply	Ind. Tax Revenue	Total Invest.	Household Spending	Int. Hou. Transfer	Enter. Spending	Govern. Spending	Forex Inflow	

SOURCE: Yusuf (2006).

Appendix B. Decomposition Change in Real Consumption

As explained in Warr, Menon, and Yusuf (2012), The basis for the decomposition is as follows. We focus on the sources of changes in the real expenditure of a particular household, say household h, arising from some external shock. Upper case Roman letters, like Z, will denote levels of variables and lower case Roman letters, like z, will denote their proportional change, so that $z = dZ/Z$. The levels of nominal income and nominal expenditure of household h will be denoted Y_h and E_h, respectively. Let the proportional change in the nominal expenditure of household h be $e_h = \tilde{e}_h + p_h$, where $\tilde{e}_h$ is the proportional change in the household's real expenditure and $p_h = \sum_{i=1}^{I} \varepsilon_h^i p^i$ is the proportional change in a consumer price index specific to household h, with $\varepsilon_h^i = E_h^i / E_h$ denoting that household's expenditure share on commodity i, E_h^i denoting its nominal expenditure on commodity i and p^i denoting the proportional change in the consumer price of commodity i.

The absolute change in this household's nominal expenditure is now

$$dE_h = E_h e_h = E_h(\tilde{e}_h + p_h) = d\tilde{E}_h + E_h p_h = d\tilde{E}_h + \sum_{i=1}^{I} E_h^i p^i$$

That is, the change in nominal expenditure of the household is given by the change in its real expenditure plus the change in its true cost of living, the latter an expenditure-weighted sum of the changes in the consumer prices that the household actually faces, where the expenditure weights pertain to that particular household.[6] The change in nominal expenditure is also equal to the change in nominal income minus the change in saving, so that $dE_h = dY_h - dS_h$. Disregarding any changes in transfer income or direct taxes, for simplicity, the change in nominal income is equal to the change in nominal factor income, $dY_h = dY_h^f$.

[6] It should be noted that real expenditures means expenditures measured at constant prices, defined here to mean base period prices. Thus, the levels of nominal and real expenditures in the base period are identical, meaning $E_h = \tilde{E}_h$.

Thus, rearranging terms,

$$d\tilde{E}_h = dY_h^f - dS_h - \sum_{i=1}^{I} E_h^i p^i$$

The change in the household's real income is decomposable into three components: (1) the change in its nominal factor income minus (2) the change in its savings, minus (3) the change in its true cost of living. The change in nominal factor income is itself additively decomposable into its factor components, as identified in the model.

This decomposition is applied to households that are on the border of the poverty line. They are percentile-8 households in urban areas and percentile-15 households in rural area. What happens to these two representative households may explain what happens to poverty incidence.