

# Reducing fuel subsidies and the implication on fiscal balance and poverty in Indonesia: A simulation analysis



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## HIGHLIGHTS

- ▶ Massive fuel subsidies reduce fiscal spaces used to alleviate poverty in Indonesia.
- ▶ Indonesia can avoid a budget deficit by 78% cutting of fuel subsidies.
- ▶ A CGE-microsimulation is applied to analyse the impacts of fuel subsidy reallocation.
- ▶ The 50% of reallocation fuel subsidies decreases the poverty by 0.277 percentage points.
- ▶ Mark-up pricing done by economic agents reduces the effectiveness of reallocation.

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## ABSTRACT

There is an urgent need for phasing out fuel subsidies in Indonesia due to a severe budget deficit and a worsening of income distribution. Fuel subsidies, of which almost 72% are enjoyed by the 30% of the richest income groups, have consumed on average 63.8% of the total subsidies between 1998 and 2013. This paper aims at evaluating the relationship between existing fuel subsidies and fiscal balance and at analysing the poverty impact of phasing out fuel subsidies. Applying a CGE-microsimulation, this study found that removing 25% of fuel subsidies increases the incidence of poverty by 0.259 percentage points. If this money were fully allocated to government spending, the poverty incidence would decrease by 0.27 percentage points. Moreover, the 100% removal of fuel subsidies and the reallocation of 50% of them to government spending, transfers and other subsidies could decrease the incidence of poverty by 0.277 percentage points. However, these reallocation policies might not be effective in compensating for the adverse impacts of the 100% removal of fuel subsidies if economic agents try to seek profit through mark-up pricing over the increase of production costs.

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## 1. Introduction

Indonesia has not been a net oil-exporting country since 2003 and has had decreasing oil production and increasing consumption. Its crude oil production has decreased by roughly 3% per year while overall fuel consumption has increased by roughly 4% per year during last 15 years (OPEC, 2008, 2012). Indonesia is suffering fiscal pressures due to the decrease in oil revenues in the terms of tax and non-tax revenues<sup>1</sup> and rapid increase in fuel

subsidies.<sup>2</sup> This is because fuel prices in Indonesia are not determined by market mechanisms but administratively by the government. These prices are frequently set lower than the international market prices; thus, the government has to fill the price gap with subsidies.<sup>3</sup> Oil revenues and fuel subsidies,

<sup>2</sup> Fuel subsidies are distributed to five fuel products: gasoline (known as *Bensin/Premium*), kerosene (known as *Minyak Tanah*), automotive diesel oil (ADO) (known as *Solar*), industrial diesel oil (IDO) (known as *Solar Industry*) and fuel oil (known as *Minyak Bakar*—mainly for industries). Since 2005 the government has only subsidised the three products of gasoline, kerosene and automotive diesel oil (ADO).

<sup>3</sup> The fuel subsidy is essentially subsidising the price gap between the domestic retail price (administered price) and the economic price. The government pays the subsidy to Pertamina—the state owned oil enterprise that has a mandate to provide and distribute subsidised fuels in Indonesia. The economic price consists of four components: (1) the border wholesale price of refined products referring to *Mid Oil Platt's Singapore* (MOPS); (2) costs of transportation, storage and distribution; (3) value added tax and fuel tax; and (4) profit margin of retail stations.

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<sup>1</sup> Oil revenue consists of tax and non-tax revenue (oil revenue sharing). The majority of Indonesia's oil output has been extracted under contracts with private-investors. Private contractors share their revenues with the government through revenue-sharing agreements. The revenue shares are based on net operating income (the amount of oil production revenue minus costs of productions, not including any production related-government taxes and charges). Taxes and charges include the corporate income tax, interest dividend tax, royalties, Pertamina's retention fee and local taxes.

therefore, always dominate the nation's economic policy agenda when the international oil prices sharply fluctuate.

The international oil prices have been unpredictable during the last 10 years. Fig. 1 shows the fluctuation of the 2005 price index of crude oil. The price was 25.95 USD/Barrel (January 2001), 42.89 USD/Barrel (January 2005), 131.52 USD/Barrel (June 2008), 64.65 USD/Barrel (July 2009) and 101.17 USD/Barrel (November 2012). Son (2008) remarked that Indonesia spent 5% of its gross domestic product (GDP) on energy subsidies. In 2008, Agustina et al. (2008) confirmed that the Indonesian government was forced to spend around 27.93% of its total budget on energy subsidies and 80% of this was allocated for fuel subsidies. The government currently plans to allocate nearly 17% of budget to fuel subsidies in 2013.

Other developing and emerging economies, where governments have significant influence over domestic prices, have increased fiscal costs, responding to the large increase in international fuel prices during 2003–2006. Baig et al. (2007) observed that, in 2005, fuel subsidies (as a percentage of GDP) cost around 5.8% in Jordan, 9.2% in Yemen, 13.9% in Azerbaijan and 4.1% in Egypt. This condition forced governments to fully pass-through the international fuel prices to the domestic retail prices to reduce fiscal costs. The average price pass-through during 2003–2006 in the net oil importer countries was 1.09 (gasoline), 0.91 (kerosene) and 1.15 (diesel oil) (Baig et al., 2007).

Massive fuel subsidies reduce fiscal space so governments have fewer sources to promote economic growth through investment in infrastructure and human capital and also to provide better social protections for low income groups through better targeted subsidies and other social expenditures. Fuel subsidies also worsen income distribution in Indonesia because most of the fuel subsidies are enjoyed by the non-poor groups, rather than by poor groups. Table 1 shows that, in 2008, more than 41% of gasoline subsidies benefitted the top richest income groups in Indonesia. The top 30% of the richest income groups enjoyed almost 72% of gasoline subsidies. On the other hand, kerosene subsidies were distributed more equally to all households compared to gasoline subsidies. Thirty per cent of the lowest income groups consumed 16% of kerosene subsidies and only 4% of gasoline subsidies. This is because most of those in this group rarely own a motor vehicle, so their gasoline consumption is very low. Generally, the richest

income group received fuel subsidies of approximately IDR 111,533/month/capita while those for the lowest income group were approximately IDR 10,787/month/capita.

In 2001, the government carried out the first initiative on deregulating the domestic fuel prices to reduce fiscal costs, to improve the allocation of appropriate budgetary targets for the poor, and to promote industrial competitiveness. It was enacted by the Presidential Decree No.45/2001 that principally determined retail prices depending on the type of consumers. While prices for households' consumption, land and water transportations, and small enterprises (henceforth the retail fuel prices) were regulated by the government, the retail fuel prices for industries and fisheries were set at 50% of international prices. Moreover, mining sectors under the *Kontrak Karya*, oil-gas industries under the revenue sharing contract, foreign-flagged vessels and vessels with overseas destinations had to pay 100% of international market prices.

In 2003, the government fully deregulated fuel prices for industries, fisheries, mining sectors, foreign-flagged vessels and vessels with overseas destinations (henceforth the industrial fuel

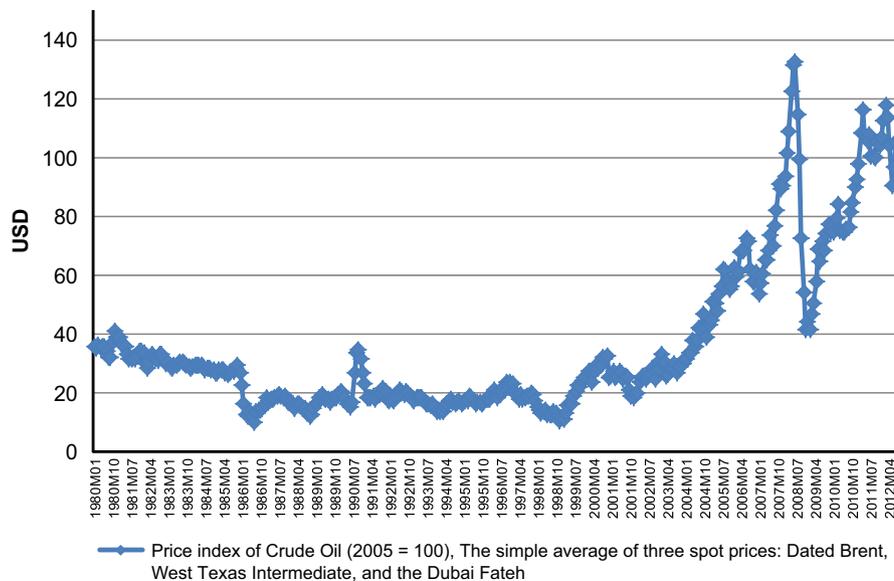
**Table 1**

Share of Fuel Subsidies Received by Households in 2008.

Source: Author's calculation based on SUSENAS 2008.

Household Group by consumption deciles	Share of fuel subsidies (%)			Household expenditure (IDR/month/capita)	Fuel subsidies received by households (IDR/month/capita)
	Kerosene	Gasoline	Diesel fuel		
1	3.70	0.55	0.05	123,256	10,787
2	5.28	1.32	0.49	164,925	16,410
3	7.00	2.19	0.84	196,632	22,573
4	8.15	3.39	1.24	229,225	27,802
5	9.73	4.70	1.93	265,084	34,436
6	11.59	6.78	2.17	308,761	43,114
7	13.56	9.10	2.35	363,421	52,581
8	15.03	12.56	5.02	440,198	62,975
9	14.60	17.63	16.95	571,048	72,031
10	11.36	41.77	68.95	1,090,754	111,533

Note: Fuel subsidies received by households = (market fuel prices – subsidised fuel prices) \* quantity of fuel consumptions.



**Fig. 1.** The monthly international crude oil price (1980–2012) (constant 2005 prices). Source: Plot based on the IMF primary commodity statistics.

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