

# How are Developing Countries Coping with Higher Oil Prices?

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*This note is based on a forthcoming report by ESMAP. The report covers policy alternatives adopted by developing country governments in response to the increases in world oil prices since the end of 2003. The report analyzes what factors have affected the responses and what policy prices have been used by governments to mitigate the effects of higher oil prices on consumers, the government budget, and the total demand for oil.*

## The Oil Price Shock

Oil prices have shown an almost steady rise since the end of 2003, with the April 2006 price being more than double that in January 2004. Faced with a large increase in the price of a commodity that affects household expenditures, governments have evolved a number of different strategies for coping. At the core of the policy response is the decision about which group in society should bear the immediate consequences of the higher prices—users, taxpayers, or businesses in the oil supply chain. This note reviews the responses of 38 developing countries to higher fuel prices since January 2004 and illustrates the range of policies adopted and some of the consequences of their implementation.

## Policy Options for Coping with Higher Oil Prices

Price-based policies determine the extent to which various groups in society bear the cost of the higher prices and reflect a mixture of three broad strategies:

- ▶ Pass the full price increase on a given product onto final users.
- ▶ Pass on only a part (or none) of the price increase and either finance the subsidy or tax reduction involved through the budget, or reduce the profits of oil companies.
- ▶ Adjust prices in such a way that companies supplying the petroleum products receive a lower margin for each unit sold.

Price-based policies entail mainly provision of subsidies and measures to reduce the domestic costs of supply of products. Subsidies are provided by a number of different mechanisms,



including direct subsidies to users (possibly targeted to certain fuels or consumer groups), indirect subsidies through the reduction of taxes on petroleum products, and targeted income subsidies. The second group of price-related policies are largely related to attempts to make the domestic markets more competitive so that cost reductions will be passed on to consumers, and tend to have a long gestation period.

Quantity-based policies focus on placing restrictions on activities that require the consumption of oil products. These activities are principally vehicle travel and the use of electricity when the power system uses petroleum products for generation. Policies can be either mandatory or exhortatory.

Reliance on oil can also be reduced by energy efficiency improvement and diversification into non-petroleum sources of energy. The most common alternatives are natural gas and renewable sources of electricity such as hydro and geothermal. Biofuels are attracting growing attention as substitutes for liquid transportation fuels. For net oil importing countries, a related policy is the encouragement of domestic oil production.

ESMAP is a multi-donor trust fund managed by the World Bank Energy and Water Department (EWD) that promotes the role of energy in poverty reduction and economic growth in an environmentally responsible manner. Its work applies to low-income, emerging and transition economies and contributes to the achievement of internationally agreed development goals.

Governments that wish to introduce unpopular policies, such as eliminating subsidies on petroleum products because of their high fiscal burden, have faced opposition to these policies from civil society. Policies that are transparent in motivation, formulation, and implementation are more likely to be accepted than those that are not.

### Degree of Price Increase Pass-Through

A key measure of countries' response to higher oil prices is the extent to which these are passed on to consumers. Table 1 compares the pass-through coefficients (measured as the ratio of the increase in the retail price to the increase in the international price, both measured in local currency) for the period January 2004 to April 2006 for gasoline and for diesel. The mean of the coefficients for the 31 developing countries for which the data were available is compared to the coefficients for a sample of industrial countries. The table indicates that, with the exception of Japan and the United States (gasoline only), industrial countries passed through more of the price increase to users. Indeed, one-third of the developing countries passed through less than 90 percent of the international price increase for gasoline, and more than one-half passed through less than 90 percent for diesel.

**Table 1 Pass-Through Coefficients for Selected Industrial and Developing Countries (January 2004–April 2006)<sup>a</sup>**

Country	Gasoline pass-through	Diesel pass-through
Germany	1.20	0.98
Japan	0.85	0.65
United Kingdom	1.25	1.08
United States	1.02	1.05
Mean of case studies	1.03	0.88
Mean for net oil importers (25 countries)	1.19	1.01
Mean for net oil exporters (6 countries)	0.35	0.32

<sup>a</sup> For some developing countries, price information was not available during the specified period. See the full report for details.

Statistical analysis examining various macroeconomic and other factors that could affect the degree of pass-through showed that the major contributing factor was whether a country is a net oil exporter. For both fuels net exporters passed through much less of the international price increase. In addition, the analysis showed that for diesel the degree of pass-through was greater in countries with either a higher ratio of debt to gross domestic product (GDP) or improving terms of trade.

### Policies That Have Been Implemented

Ten questions summarize key policy responses adopted during 2004–2006 (Table 2).<sup>1</sup>

- (1) For countries with deregulated prices or an automatic pricing formula that follows international prices, has the government suspended its pricing policy so as not to pass higher world prices fully to consumers?
- (2) Has the government lowered taxes or fees levied on petroleum products to lower end-user prices?
- (3) Has the government financed fuel price subsidies explicitly from the budget?
- (4) Is there an oil product price stabilization fund that is either functioning presently, or has been depleted and is not presently functioning, or has been proposed by the government?
- (5) Aside from the measures in (1) and (2), has the government used its influence in other ways in an attempt to lower end-user prices? Examples from the 38 countries studied include threatening to withdraw licenses for increasing prices, calling upon the public to boycott firms that raise prices, requiring that justification be provided for every price increase, and forcing the oil companies to absorb losses from under-pricing of fuels.
- (6) Have prices to certain consumers been set lower than for others for the same fuel? Targeted consumers might include farmers, fishermen, public transport operators, power producers, and households, and the sale of smaller LPG cylinders at lower prices on a unit weight basis.
- (7) Have mandatory conservation measures been announced or implemented, or have financial incentives been given for improving energy efficiency?
- (8) Has the government introduced a cash transfer or any other compensation mechanism that targets the poor specifically in response to higher oil prices?
- (9) Has refined product or electricity rationing or shortage occurred?
- (10) Has the government implemented or actively promoted switching to alternative sources of energy to reduce dependence on oil?

<sup>1</sup> The question regarding government sponsored information campaigns for raising public awareness on fuel policies was not readily available in each country and therefore is not included in the table. Two examples of successful campaigns are discussed in the following section.

**Table 2 Summary of Responses to Higher Oil Prices in 2004-2006**

Question	Non-oil producers	Net oil importers	Net oil exporters	All countries
	No. of countries responding "Yes"			
(1) Suspend pricing policy <sup>a</sup>	5	6	3	14
(2) Taxes adjusted	10	6	7	23
(3) Budget financing fuel subsidies	4	7	9	20
(4) Stabilization fund	5	2	2	9
(5) Government influence used to lower prices	3	7	2	12
(6) Lower prices to certain consumers	5	5	7	17
(7) Mandatory conservation measures or financial incentives	4	6	2	12
(8) Cash transfer or other measures to compensate	1	5	1	7
(9) Oil product or electricity rationing or shortage	11	8	7	26
(10) Fuel switching	11	11	6	28
All countries	16	13	9	38

<sup>a</sup> Twelve countries out of 38 did not have market-based pricing.

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The responses were analyzed for three categories of countries: non-oil producers (16 countries in total), oil producers that are net oil importers (13), and net oil exporters (9).

**The countries per category are:**

**Non-oil producers:** Cambodia, Ethiopia, Honduras, Kenya, Lao People's Democratic Republic, Madagascar, Malawi, Morocco, Mozambique, Nicaragua, Rwanda, Senegal, Sri Lanka, Tanzania, Uganda, and Zambia.

**Net oil importers:** Bangladesh, Brazil, Chile, Ghana, Guatemala, India, Indonesia, the Kyrgyz Republic, Pakistan, People's Republic of China, Thailand, and Tunisia

**Net oil exporters:** Arab Republic of Egypt, Argentina, Cameroon, Kazakhstan, Malaysia, Mexico, Nigeria, República Bolivariana de Venezuela, and Vietnam

**Outcomes**

Fourteen countries in the sample have suspended market-based pricing for some, if not all, fuels. More than one-half have reduced taxes to lower end-user prices. The percentage of those that have resorted to tax reduction is disproportionately high among net oil exporters. Half the governments have financed fuel subsidies from the budget, and the tendency to do so increases with increasing contribution of domestic oil to meeting domestic demand. Among net oil exporters, all have used the budget to subsidize fuel prices. Only five countries have effectively functioning price stabilization funds.

About 45 percent of the countries have price discrimination based on consumer categories. Among net exporters, four-fifths offered price discounts to certain consumer classes. Mandatory conservation measures or financial incentives for conservation have been implemented or announced in one-third of the countries. Not surprisingly, the lowest percentage was among net oil exporters but somewhat surprisingly, the percentage was not much higher among non-oil producers.

Only a handful of countries established compensation mechanisms specifically in response to recent oil price increases. Indonesia, Chile, and China introduced cash transfer schemes targeting the poor.

Petroleum product and electricity shortages have been common, occurring in nearly two-thirds of the countries. Ironically, those most likely to experience energy shortages are net oil exporters, suggesting a high indirect cost of fuel price subsidies. In nearly two-thirds of the countries that have experienced shortages, the government has suspended market-based pricing, financed price subsidies from the budget, or both.

Three quarters of the governments are promoting fuel switching to alternative fuels or are proposing to do so. Twenty-three countries are engaged in or planning to start biofuel production.

Some governments have been more successful than others in implementing policies that reduce price subsidies and encourage energy conservation. Useful lessons can be gleaned from their experience.

- ▶ The government of Ghana used information dissemination and awareness-raising effectively in February 2005 to win—despite opposition from trade unions—the public opinion over to their policy of eliminating fuel price subsidies entirely, coupled with compensation schemes that target the poor. In engaging the public, the government made extensive use of the findings of the poverty and social impact assessment of subsidy elimination conducted with a wide range of stakeholders in 2004.

- ▶ In 2005 in Indonesia—which has a history of violent protests against fuel price increases—the government raised prices by 29 percent in March and by another 114 percent in October. The public acceptance of these very large price increases was helped by the credibility of the newly elected government and by the government’s decision to redirect the savings from the subsidy reduction to rapidly put in place a cash transfer program for the poor. The government conducted nation-wide information campaigns to inform the public about this compensation mechanism, which more than compensated the poor for the price increases. The government has also conducted ongoing assessments of the implementation of the cash transfer program and addressed the problems identified. The government has made important steps toward moving from universal price subsidies to targeted assistance.
- ▶ The government of the Philippines has mounted a very active energy conservation campaign, beginning with government ministries and agencies, thereby setting an example. Although attribution is difficult, this large effort by the government, together with other factors (including full pass-through of world market price increases), has helped to reduce fuel consumption, achieving an eight percent reduction during the first 11 months of 2005 compared to a year earlier.
- ▶ The government of Chile has maintained a prudent fiscal policy despite rising world prices of copper, Chile’s major export commodity, and used a portion of the windfall income to subsidize fuel prices in times of very high world oil prices. The government has also used cash transfer to compensate the poor for higher oil prices.

simple or universal strategy for dealing with higher oil prices. A package of measures is needed to help the government and the public deal with higher oil prices effectively. In particular, the very low short-run price elasticities of demand imply that even allowing prices to rise to international levels will not result in a substantial fall in demand.

In the medium to long term, experience with price subsidies offers guidance. Subsidies are often justified in the name of protecting the poor. However, traditional fuel subsidies have been found to have large leakages, resulting in low cost-effectiveness. Household surveys have confirmed that the lowest-income groups often receive the smallest share of the benefits of the subsidies, even though their removal will have sizeable impact on them. Governments are well advised to move away from price subsidies and turn to targeted assistance. To do so, governments need to identify poor households and develop a delivery mechanism for income transfer and other types of compensation that better target low-income households.

With the risk that oil prices could rise further still, inaction by governments could prove very expensive. Countries should be pursuing a full range of policies to reduce oil dependence and not allow the cost of subsidies to threaten budget stability.

## References

World Bank. Forthcoming. “Coping with Higher Oil Prices.” ESMAP Report. Washington, DC.

## General Observations on Policy Responses

Given the diverse circumstances in which developing countries find themselves—different income levels, budgetary situation, amounts spent on price subsidies, availability of indigenous petroleum resources, fuels used for electricity production, and the impact of weather on hydropower, to mention a few—there is no

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