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Taxes on Fuel & Plastic Bags

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A fuel tax (a petrol, gasoline or gas tax or a fuel duty) is a form of excise tax imposed on the sale of fuels which are intended for transportation, in most countries. Fuel tax rates vary from one country to another due to varying policies. In this segment, we will analyze the consumer behavior associated with it.

Reasons for imposing Fuel taxes

Environment Protection

Due to the increasing problems of climate change and global warming, policy makers around the world have realised that something needs to be done. Fuel consumption is increasing rapidly (at the rate of approximately 4% in India); a major cause being vehicles. They are a leading source of air pollution, generating 13% of global emissions of greenhouse gases. Thus, a reduction in fuel use is needed. This can be ensured by a rise in fuel prices via taxation. Higher taxes can spur cuts in driving, fuel-efficient vehicles, and consequently a reduction in polluting emissions, congestion, and traffic accidents.

Although environmental taxes are often considered politically infeasible, Western Europe has experimented with fuel taxes and they did have a significant environmental impact. Fuel prices, and the external environmental costs of energy consumption are predicted to increase significantly in the future due to growing demand and rising production costs, so higher fuel taxes in the present are justified to increase transport system efficiency so that future economy is less burdened by excessive fuel costs. The important question to ask is the extent to which households will alter their behavior when they face higher fuel prices?

Revenue Generation

The governments of many countries impose fuel taxes as a source of revenue generation. This revenue is diverted towards filling up the fiscal deficits due to the fuel subsidies provided to some sections of society. They help finance transportation programs. Some economists even suggest increasing fuel taxes as part of a revenue-neutral tax shift, which means increasing taxes on resources such as fuel to fund reductions in more economically harmful taxes, such as those on income and investments.

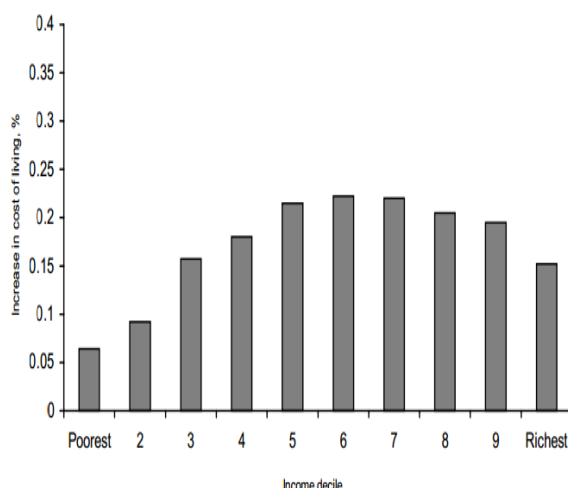
Behavioral impact on consumers and distributive effects of fuel taxes

Fuel taxes have sometimes been criticized on distributional grounds due to a perception that fuel taxes are regressive as they impose a larger burden on poor people. Some studies contradict this argument saying that fuel taxes are in fact progressive. These studies have shown to be varying according to the developmental and income status of countries. We are going to analyze the distributional effects of fuel tax in both developed and developing nations with the help of specific case studies.

Developed Nations

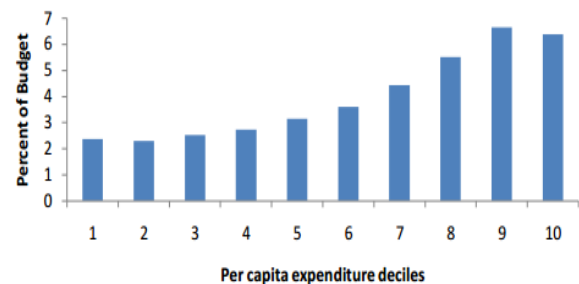
In countries with very high incomes such as US and UK, even poor households have cars—in fact it is the poor who own old, energy inefficient cars. So a common argument against raising fuel taxes is that it would be regressive—poor households would bear an unfair burden. This section examines the effect of the road fuel tax on sub-groups of the population of UK, as presented by Zoey Smith. The effect of a 6% real increase in duties on the cost of achieving a level of economic welfare is analyzed. Households are ranked according to income and divided into 10 equal groups, so the first decile contains the poorest 10%. The effect of the tax increase on the cost of living of the poorest households is smaller than the effect on richer, with the greatest effect being on middle-income households. Repeated increases in fuel duty would have a much larger effect. The distribution of the effects is largely caused by many households in the lowest income groups.

Figure 4. Effect of a 6 per cent real increase in duty on cost of living, by income decile: all households



Developing Nations

Figure 2 : Budget Share of Fuels across MPCE deciles



As seen in the figure, the combined budget share of all fuel products is higher for higher consumption deciles. This indicates that an overall fuel tax would be strongly progressive. In India, kerosene is the popular lighting and cooking fuel in rural areas. But as consumption and income increase, people move towards electricity and gas. So taxes on kerosene are regressive for low-income countries.

When just direct consumption is considered, taxes on transport fuels (petrol and diesel) are highly progressive for both urban and rural sector as they affect the higher income group because poor people don't own cars.

Policy Implications

Unlike a tax imposed for revenue purposes, an environmental tax should be imposed on fuels with elastic demand and on fuels with emission potential. transport fuels demand responds to price changes in the long run. Thus a tax on transport fuels leads to emission reduction without adverse distributional effects.

The effect of the price hike through direct spending on gasoline would be progressive as households in the highest socioeconomic strata would be most affected. By contrast, the effect of the price hike through spending on diesel—both direct spending and spending via bus transportation—would be regressive. Policymakers differentiate taxes on diesel and gasoline. An alternative is to use revenue from fuel tax hikes to subsidize bus travel.

In the final analysis, in deciding whether to raise fuel taxes, policymakers need to balance an array of distributional, political, fiscal, and environmental goals.

PLASTIC BAG TAX

Plastic Bag tax is an environmental levy on plastic bags which aims to rationalize their consumption and production. Mostly it is imposed on plastic bags provided by retailers at point-of-sale or from other outlets. The experience of the plastic bags levy (or PlasTax), in the Republic of Ireland, where the usage reduced by 90%, has encouraged other countries to impose a similar levy. In this segment, we will analyze the policies relating to their plastic bag taxation and the consumer behavior associated with it.

Rationale behind taxing plastic bags

Plastic pollution is the nexus of some of the major environmental challenges facing us today. It is a visible and persistent component of litter pollution, polluting waterways, other natural areas and killing of animals. But the greatest damage is economic—the cost of cleaning up all the bags and the damages caused by them. The major environmental benefits of a levy on plastic bags are reduced littering, reduced use of resources and energy, lower pollutant emissions and increased public awareness of environmental issues. Moreover, rationalizing the consumption of plastic bags will redirect funds to infrastructure and spur entrepreneurial efforts to come up with alternatives to plastic. Therefore, plastic bag tax is used as a policy instrument explicitly aimed at changing consumer's behavior. It is expected that consumers would reduce their usage of plastic bags but the question remains whether it would decrease sufficiently enough to bring about a substantial positive impact.

Case Study of Scotland

Studies and experience suggest that that if only plastic bags are levied, then there

would be some shift in plastic bag usage to paper bags which have worse environmental impacts.

A study conducted by the Scottish government quantified the effects under the two levy scenarios:

- Scenario 1: A levy on plastic but not paper bags.
- Scenario 2: A levy on plastic and paper bags

Nature of taxation:

The tax was fixed at an amount sufficiently high to encourage consumers to bring their own 'permanent' reusable shopping bags with them. The study estimated that due to the plastic bags the annual cost to Scottish consumers would be \$6.50, which is reasonable and would not act as a burden for the poor.

1. A levy of 10p on plastic bags only Result: Slightly effective

- In the case of a tax on all plastic bags (including biodegradable ones) plastic bag usage fell by 77%. There was a decrease in annual plastic bag consumption from 6,200 to 620 metric tons.
- But the total tonnage of all carrier bags used and requiring disposal actually increased by 5,409 tonnes (0.26% increase) since consumers substituted plastic bags with paper bags.
- Atmospheric acidification and the risk of litter was considerably less than the pre-tax scenario.

2. A levy of 10p on plastic and paper bags. Result: Fully effective

- The number of bags entering the consumption stream reduced by approximately 94%
- Including paper bags under the levy spectrum yielded reduction in the tonnage of waste by 4,993 tonnes per year (0.24% decrease).

- Thus, the environmental benefits increased. There were reduced impacts in terms of consumption of water, and emissions of greenhouse gases because paper bags have a higher environmental impact in these categories relative to plastic bags.

Conclusion

Consumption of plastic bags decreased substantially. The study concluded that the environmental benefits were modest when only plastic bags were levied (Scenario 1) compared to environmental impacts when both plastic bags and paper bags were taxed (Scenario 2).

THE INDIAN SCENARIO

The Indian plastic industry is growing at a rate of about 17%, with the total consumption of plastics being about four million tons per annum. Hence, an outright ban would be politically costly because there is already a thriving industry that employs a considerable number of people.

Although policy instruments like consumer awareness and anti-littering campaign have been initiated, the desired fall in wasteful consumption has not been achieved. In general, the policy instruments had an inherent limitation as they primarily sought to achieve this by promoting reuse and recycling.

It is essential to impose a tax on plastic bags to combat indiscriminate use which is the root cause of littering. Including paper bags in the ambit of the tax would accentuate the environmental benefit.

Without regulation, the cost of plastic bags is often hidden in food prices. Hence, even if consumers do not get a bag, they are still made to pay for it. With more transparent taxation, food prices would be lower. It would also ensure that the economic costs of environmental damage are internalized

by those responsible for causing the damage through the market mechanism (polluter-pays principle).

Introduction of a price signal through the use of a plastic bag tax can influence consumer behavior significantly but stakeholder and consumer acceptance needs to be ensured. Informational campaigns highlighting the environmental impacts and hypothecation of revenues into an environment fund are central in ensuring such acceptance.

Carbon Taxes

Bhavyaa Sharma & Vatsala Shreeti

There is no question about a significant human influence on the globally rising temperatures, especially through emission of greenhouse gases, particularly CO₂. The consequences are innumerable and ominous, including rising sea levels, severe droughts and floods, increase in precipitation intensity and shifts in the natural balance of species in the ecosystem. In this context, Kyoto Protocol (1997) mandated that industrial countries, by 2008-12, should reduce their overall emissions by 5% from their 1990 levels, with different countries accepting different targets of emission. An important instrument through which many countries aimed to do this was the taxation of energy according to its carbon content, well known as the Carbon Tax. Needless to say, since it addresses the issue of a negative externality, it is a Pigouvian tax which aims to limit or reduce Green House Gases (GHG) emissions and in theory meets the criteria of a good taxation policy by bringing the private costs of emitting CO₂ in line with the social costs of global warming and thus, is