

FUEL SUBSIDIES, OIL MARKETS AND THE GLOBAL ECONOMY

Nathan Balke, Southern Methodist University, 214-768-2693, nbalke@smu.edu
Michael Plante, Federal Reserve Bank of Dallas, 214-922-5179, Michael.plante@dal.frb.org
Mine Yucel, Federal Reserve Bank of Dallas, 214-922-5160, mine.k.yucel@dal.frb.org

Overview

Many oil-exporting countries have subsidies on oil products. Plante (2014) has shown that fuel subsidies can create significant distortions when considered in the context of an individual country which takes the world price of oil as given. Our paper extends the results of Plante (2014) by considering how fuel subsidies distort the global oil market and the global economy. We focus not only on how fuel subsidies could distort the world price of oil but also how it could influence other economic variables, such as trade flows, investment decisions, and consumption in oil-importing and exporting countries.

Methods

We construct a two country dynamic general equilibrium model where one country represents an oil-exporting bloc which has fuel subsidies in place and the other country represents the developed countries. Households in both countries maximize utility subject to their respective budget constraints. The developed countries produce oil and a manufactured good. Although the oil-importing country produces oil, it also imports oil because domestic production is not enough to cover consumption. The manufactured good can be consumed, transformed into investment, or traded for oil with the oil-exporting countries. The national oil company produces oil in the oil-exporting bloc. The government country provides a subsidy to domestic residents by selling a portion of this supply below its world price, while the rest is exported to the developed world at a price determined endogenously in the model.

The main exercise in the paper is to show how the subsidy distorts the long-run value of the world price of oil and other macroeconomic variables. We start with a steady state where the oil importers have subsidies and then remove these subsidies to see how world oil prices, the consumption of oil and other goods, GDP and welfare change in both the oil importing and oil exporting countries. We consider subsidies of various sizes which are representative of those found in the data. We also derive results using different elasticities of oil supply for both types of countries.

Results

We find several results of interest from our experiments. The removal of fuel subsidies are found to drive down the world price of oil relative to what would occur with these subsidies. Furthermore, since fuel is inelastically demanded, this price decline acts as a positive terms of trade shock for oil-exporting countries. In some of the cases considered, it is possible that these countries increase consumption of both fuel and the manufactured good, as they crowd out consumption from the developed countries.

Conclusions

Our research contributes to the understanding of how fuel subsidies affect the global economy. We extend the work of Plante (2014) by considering how the presence of fuel subsidies in a large number of countries can influence the world price of oil and other economic variables, not only in oil-producing countries but also in oil-importing countries. We find that the presence of subsidies has negative spillovers for the developed countries, as they pay a higher price for oil in the long-run and bear more of the negative consequences of supply shocks in the short-run.

References

“The Long-run Macroeconomic Impacts of Fuel Subsidies,” Michael Plante. *Journal of Development Economics* 107C (2014), pp. 129-143.