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TRANSPORT REGULATIONS AND THE EFFECTS IN THE OIL MARKET – DOES MARKET POWER MATTER?[3]

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ABSTRACT

Several instruments to regulate consumption of oil in the transport sector are used or proposed. They typically include fuel taxes, biofuel requirements and fuel efficiency. The impacts of these instruments on the consumption of oil and the oil price vary. One important factor here is the market setting. We show that if market power is present in the oil market, the impacts on consumption and price may contrast markedly to those in a competitive market. In particular, we find that reduced oil consumption due to increased fuel efficiency will *increase* the price of oil in a monopoly market. If a biofuel standard is imposed, the price will decrease. A fuel tax will most likely reduce the (producer) price of oil, too. In a competitive market, the (producer) price of oil will always decrease if consumption is reduced, whatever policy instrument is used.
The conclusions are derived from theoretical analyses of a closed economy, using general function forms. We also present theoretical analyses for an open economy, but with linear demand and marginal cost functions. Moreover, we present some numerical illustrations for an open economy with either a monopoly or a dominant firm and a competitive fringe. We show here that the price effects for a given reduction in domestic oil consumption depend highly both on the policy instrument used and the size of the domestic vs. foreign region and the costs of the dominant firm and the fringe.
Price effects are important in several ways. In a closed market, it has distributional implications – the mark-up for a monopolist depends on the policy instrument choice. In an open economy, an oil-importing country may be concerned about its import costs. However, a country may also be concerned about carbon leakage, which probably is decreasing with the international oil price. We present numerical illustrations that show how the different policy instruments may affect import costs and carbon leakage, and thus influence on the appropriate choice of instrument (disregarding other important aspects).

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