The Imperfect Price-Reversibility of Non-Transportation Oil Demand in the OECD

by
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Abstract:

This paper examines the price-reversibility of OECD non-transportation oil demand and its largest components: residual (heavy) fuel oil, and non-transportation distillates. Our purpose is to determine the extent to which the reductions in demand following the oil price increases of the 1970's have been -- and will be -- reversed by the price cuts of the 1980's. The analysis is based on an econometric model which utilizes price-decomposition methods to measure separately the effects of price increases and price decreases. These methods allow empirical testing of irreversibility and hysteresis, and should be applicable in other areas of economics where asymmetry of response or persistence of effect are evident.

Based on the statistical evidence, we reject the conventional specification of demand being perfectly price-reversible. We conclude that the response to the price cuts of the 1980's has been significantly smaller than to the price increases of the 1970's. Demand has followed a ratchet process: price increases reduced demand substantially when demanders conserved and switched away from oil, but price cuts did not reverse this process completely, if at all. This has important implications for projections of oil demand, especially under low-price assumptions: the OECD's dependency on oil will not increase as much as some analysts may have feared. There is, however, another aspect of imperfect price-reversibility: the possibilities of adjusting to future price rises may not be as great as they had been in the past. The easiest and least costly demand savings have already been made, and oil has been replaced by other energy sources in many uses: what's done is done.

Keywords: oil demand; price reversibility; asymmetry; hysteresis
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