

MORE NEW EVIDENCE ON ASYMMETRIC GASOLINE PRICE RESPONSES

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Executive summary

Asymmetric price responses occur when prices rise more rapidly after an increase in costs than they decline after a decrease in costs. There exists a large literature on asymmetric price responses in gasoline markets.

Geweke (2004) mentions two possible aggregation issues that may arise in this literature. The first possible issue is aggregation over time. In this case, the analysis does not include all (possible) price adjustments. This problem can occur if data have a lower frequency than the frequency of price decisions or input cost changes. The second possible issue is aggregation over space. In this case, the analysis focuses on a geographic area like a national or local market instead of individual firms. This problem can occur if data are aggregated over individuals or if the estimation method does not take into account possible differences between firms. However, individual firms set prices, not the market as a whole. It might be that not all firms have the same pricing strategy because, for example, they do not operate under the same conditions (competition, ownership structure, location, etc.). Moreover, even if all firms adjust prices asymmetrically, the degree to which they do may differ. Finally, pooling across individuals may possibly give biased results in (dynamic) estimations if there exists parameter heterogeneity.

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Bachmeier and Griffin (2003) study whether Geweke's first aggregation issue is relevant. More specifically, they explain the daily spot market price by the daily price of crude oil. They do not find asymmetric price responses when they use daily data, but they do find asymmetry when they repeat the analysis with weekly data. As a consequence, the first issue that Geweke mentions is important.

This paper studies Geweke's second aggregation issue. More specifically, I explain daily retail prices of individual gasoline stations by the daily spot market price. My main interest is whether there exist differences between stations. I find that the data are not poolable across stations. A separate analysis for each individual station shows that 38% of the stations in my sample respond asymmetrically. Therefore, asymmetric pricing is a feature of individual firms. Geweke's second aggregation issue is important. Together with the results of Bachmeier and Griffin (2003), this finding shows that each decision of each decision maker is informative for understanding asymmetric price responses and the underlying motives. Subsequently, I study whether there exist differences in the characteristics of stations that do and do not adjust prices asymmetrically. I look at 35 (sometimes overlapping) characteristics. For example, I study whether stations that adjust prices asymmetrically have higher price levels, are geographically clustered, or have a certain ownership structure. I find that asymmetric pricing seems to be a phenomenon that is randomly distributed across stations.

References

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