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Competition in Energy Markets – Note by Greece

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More documents related to this discussion can be found at
www.oecd.org/competition/competition-in-energy-markets.htm

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Mapping the competition conditions for the petroleum industry in Greece

1. Price transmission asymmetry as a competition issue

1. Social and political concerns about the extent and speed with which cost shocks are transmitted between different levels of the supply chain have triggered a plethora of economists to study this price pass-through in different markets. A rich body of literature examines how cost changes of crude oil influence retail gasoline markets (Bachmeier and Griffin, 2003; Borenstein *et al.*, 1997), along with how input prices are transmitted to final prices (Nakamura and Zerom, 2010; Peltzman, 2000). Besides input price and cost pass-through, several studies explore exchange rate pass-through on import and export prices (Gopinath *et al.*, 2010; Nakamura and Steinsson, 2012). The common belief among consumers that retail price increases are faster and of higher magnitude than decreases following a cost shock, was empirically confirmed for the US gasoline market by the early study of Bacon (1991), naming that situation as the broadly known “rockets and feathers”.
2. This phenomenon might exist due to several reasons. Firstly, the higher retail price might work as a focal point for other gas stations. Further, restrictions in stock levels may cause significant delays in price adjustments. Consumer search costs is also important: price increases due to an increase in costs will lead consumers to increase their search to find a lower price reducing profit margins and price dispersion. On the other hand, when costs and prices decrease, consumers tend to reduce search leading to higher profit margins and greater price dispersion. Moreover, there is an incentive for higher prices when international prices are low which depends on the fuel storage capacity. The “rockets and feathers” phenomenon might exist due to high bargaining power of retailers in local level.
3. The price transmission asymmetry might also be a competition issue as it might be an indication of potential collusion (tacit or not) between retailers or companies of the fuel sector.

2. The HCC’s fuel industry inquiry

4. Since March 22, 2022, the Hellenic Competition Commission (HCC) has launched a mapping in the Greek fuel industry focusing on the price pass through in the production and distribution chain of petroleum products in the Greek market. This mapping examines the phenomenon of the asymmetric adjustment of fuel prices in relation to costs, and especially with regard to the existence of asymmetry in the adjustment of prices between the stages of the petroleum sector (refining, wholesale trade, retail distribution). The analysis focuses on the price adjustment of three petroleum products: unleaded 95, diesel and heating oil. In the context of the above, further analysis will be conducted on 3-2-1 crack methodology, markups and aggregate prices pass-through.

2.1. Methodology

5. The methodological framework of the fuel market inquiry follows the empirical work of Eleftheriou *et al.* (2019), where an augmented ARDL model is used to further

capture the asymmetries in price transmission taking into account and the spatial competition among retailers.

2.2. Data gathering

6. This analysis uses data from two main sources: (a) undertakings (refineries and wholesalers) through a number of questionnaires, (b) the Retail Liquid Fuel Price Observatory, which contains information on the Platts index price, refinery selling price, wholesaler selling price and retail price. The data is on a daily basis and covers the period from 01/10/2019 to 15/04/2022 for the region of Attica which concentrates the vast majority of fuel products' demand. The data gathered from undertakings included data on costs, prices and discounts.

2.3. Data analysis/results

7. The results of the econometric analysis may be summarized as follows: on the price adjustment of refinery prices to Platts changes, there is an asymmetric price adjustment for all products (unleaded 95, diesel, heating oil) after a cost change. After an increase in Platts index, prices for all products adjust at the same time, whereas after a decrease in Platts index this holds only for diesel. More specifically, after a decrease in Platts index the price of unleaded 95 increases at the same time, whereas the price of heating oil adjusts on previous Platts decreases.

8. Focusing on the price adjustment between refineries and wholesalers, an asymmetric price adjustment for all products is found, while Unleaded 95 shows less price asymmetry.

9. On the price adjustment of retail prices to wholesale price changes, a non-spatial and a spatial analysis were simultaneously conducted. For the first, there is an asymmetric price adjustment for all products. Especially for diesel, results show that after a wholesale price increase, retail prices increase at the same period, while the adjustment to the wholesale price decrease takes place one period later.

10. On the spatial analysis, local competition is defined using matrices of 7, 8 and 9 km distance between gas stations. Once again, the price adjustment asymmetry is confirmed for all products. Broadening the relevant markets seems to have no effect on the price adjustment process.

11. Furthermore, the present analysis considers the different degrees of vertical integration that exist in the Greek fuel market.