Collusive behaviour in the automobile sector in Spain. Quantifying consumer damages

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INTRODUCTION

On July 23, 2015, the Spanish National Markets and Competition Commission (CNMC) passed judgement (S/0482/13) against 20 automotive sector companies for alleged restrictive competition practices between March 2004 and August 2013.

The exchange of information would have impacted on the fixing of car sale prices, and would have led to a homogenization of the conditions and future commercial plans for car sales and post-sale services in Spain from at least 2004 until July 2013, when the Commission's inspections took place.

Our main objective is to provide a coherent method to estimate the price consumers would have paid in the absence of collusive practices and to estimate, where appropriate, the corresponding compensation based on CNMC and the European Commission recommendations.

In addition to the methodology and estimation of the additional cost, the evolution of a series of variables, specifically production and prices, related to the automobile market has been analysed. The purpose is to observe any anomalous behaviour that could demonstrate the collusive behaviour between companies.

THEORETICAL FRAMEWORK

The impact of cartels on markets and the different agents involved (both promoters and those affected by the collusive practices) have been extensively studied in economic literature. Collusive practices refer to agreements between two or more companies to reach a consensus on commercial practices that would result in a price and/or quantity different from the ones would occur if such collusive practices did not exist.

There is a broad consensus that the existence of these collusive practices leads to higher prices, a decrease in production, and a redistribution of wealth from consumers to producers. The damages caused by the cartel, often referred to as "overcharge" in the literature, can be defined as the illegal appropriation of profits by the companies.

In this paper, however, we do not analyse the cartel's effects on global efficiency levels; instead, we aim to estimate the extra cost paid by consumers who actually purchased the product.

METHODOLOGY AND SOURCES

Both the European Commission (2013) and the CNMV (2015b and 2020) propose two type of methods to quantify damages and compensations in these cases: comparative methods and non-comparative methods. Comparative methods are the most commonly used and are based on estimating market behaviour regarding prices and quantities if the cartel had not occurred. Non-comparative methods rely on economic models, drawing upon economic theory, or utilize production costs and profit margins to estimate a scenario without infringement.

The "Before and After" method, included among the first ones, is the most commonly used by jurisdictional bodies and affected parties, and is the one that is proposed in this work. This method would compare the real situation during the collusive behaviour period with that situation in the same market before or after these practices (temporary or diachronic comparison).

In our analysis, we have compared the car price, during the collusive period, with the price in a period after it. A later moment has been considered for two reasons. Firstly, due to the difficulty of establishing the start date of collusive practices (it is easier to identify the cessation date using the legal ruling). And secondly, because the data corresponding to each vehicle model is not found in any official statistics so we must resort to specialist car sector publications. In this sense, obtaining data prior to 2006 (representing the start of the price collusion) would be very complex.

Once the year of reference has been decided, an attempt has been made to identify the determinants of the car price, the variable that we intend to explain. In order to choose the determinants of the price we have considered the availability of data and the interaction with our variable object to study.

We have considered specialized car magazine data, specifically from "Cars" magazine corresponding to January 2013 and January 2015. A total of 2509 observations have been collected (1,352 observations for January 2013 and 1,157 observations for January 2015). We have included the equivalent models for both years for each brand. Models that only existed in 2013 and have disappeared by 2015 and vice versa have been excluded from the sample. Additionally, hybrid car versions were removed from the sample due to their lower sales volume and market share in 2013 and 2015, and because characteristics and market positioning differed considerably to those of gasoline and diesel cars.

In order to choose the determinants of the price we have considered the availability of data and the interaction with our variable object to study. In the explanatory model, the cubic centimetres, the power of the car, fuel consumption, maximum speed, the fuel type, and the brand of the car, are identified as determining price variables. In addition, a dummy variable that considers high-end brands has been included. These brands sell more luxury vehicles and this consideration, from a marketing perspective, can be a decisive determinant in setting prices.

RESULTS

The hierarchical least squares regression method was used to make the estimates. According to this procedure, a linear regression model is initially adjusted including just one explanatory variable, and subsequently the rest of explanatory variables were added.

The cubic centimetres and width, as determinants of prices, were not statistically significant in our estimates. The key determinant of prices is the variable that captures high-end brands. Apparently, there is a prior segmentation of consumers who purchase luxury brands at a higher price. The explanatory power of the model, as a whole, is positive, as the R square is 0.84, which implies a high goodness of fit.

According to the model, the average price at which vehicles should have been sold is 10.39 percent lower than the actual sale price, which represents the amount that consumers who purchased a car during the collusive period should receive as compensation.

The work also considers the evolution of automobile production and prices during the collusive period and detects certain anomalous behaviours. Specifically, variations in passenger car production differ considerably from the evolution of GDP and a much higher increase in passenger car price. This anomalous behaviour could show the existence of the collusive practices.

DISCUSSION

We offer a consistent method to estimate the price consumers would have paid in the absence of collusive practices. The procedure chosen, *Before and After*, has been used in the literature in works such as those of Laitenberger and Smuda (2013), in the detergent market in Germany, Hastings (2004), in gas stations, and Bernheim (2002) in the vitamin C market, both in USA.

As for the percentage of overcharge, 10,39 percent, it is higher than the percentages cited in said works. In any case, our results are in no way comparable since we are dealing with markets for different products in different regional contexts. Additionally, t is feasible that considering a product that, in principle, has a higher income elasticity, a higher percentage of overcharge could be established. In fact, it has been observed that the percentage of overpriced is higher in those more luxurious vehicles with higher prices.

CONCLUSION

Our paper estimates the loss suffered by consumers from the alleged restrictive practices of competition by 20 companies in the automotive sector between March 2004 and August 2013 (Resolution of the sentence, in file S/0482/13 of the CNMV). Estimating the loss of consumer surplus in cartel cases can be challenging due to the complexity of market dynamics and the lack of perfect information about how prices would have behaved in the absence of the cartel. Additionally, the behaviour of consumers and the elasticity of demand can vary, making it difficult to predict the exact impact on consumer welfare. In fact, in legal cases involving cartels, determining the appropriate level of compensation for affected consumers can be a complex task for courts.

We offer a consistent method to estimate the price consumers would have paid in the absence of collusive practices. The procedure chosen, *Before and After*, compares the price of the car during the collusive period (2013) with that corresponding to a later period (2015) and is consistent with the recommendations of the European Commission (2013) and the CNMC (2020).

We have obtained, using the hierarchical least squares regression technique, the coefficients corresponding to each determinant and apply them to the reality of cars in 2013. In the explanatory model, the cubic centimetres, the power of the car, fuel consumption, maximum speed, the fuel type, and the brand of the car, are identified as determining price variables.

According to the model, the average price at which vehicles should have been sold is 10.39 percent lower than the actual sale price, which represents the amount that consumers who purchased a car during the collusive period should receive as compensation. To the best of our knowledge, there are no studies that have conducted a similar analysis to ours for this market in this period.

While our estimates may not be precise, they can still provide valuable insights for courts and regulatory authorities when deciding on appropriate compensation for affected consumers. These approximations are essential tools to address the damages caused by cartels and contribute to ensuring fair outcomes for consumers who have been negatively affected by anti-competitive practices.