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Use of Economic Evidence in Cartel Cases – Contribution from Türkiye

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Use of Economic Evidence in Cartel Cases

- Contribution from Türkiye –

1.   Fighting cartels is among the top priorities of competition authorities. In fact, the existence of a cartel has not any economic or social justifications that may contribute to either the economy or social welfare[1]. However, this fight is far from being an easy task, since, in particular, the increase in the level of awareness regarding competition law, knowledge and control of the tools that form the basis of evidence in the hands of enterprises have placed undertakings in a more advantageous position[2].

2.   High probative power of direct evidence, if found, alone can be sufficient to demonstrate a violation and the culpability of the parties. On the other hand, a circumstantial or indirect piece of evidence with a low probative value, such as a phone record showing only that communication took place between the parties without disclosing the content of the conversation, meets the probative level when supported by other evidence[3]. In this regard, economic analyses that can be classified as secondary evidence may, in some cases, support the finding of an infringement. Hence, the use of economic evidence in cartel cases may strengthen the competition authorities' hands for having met the standard of proof for proving an antitrust violation.

3.   Considering that economic evidence often leads to different interpretations more frequently than hard evidence, proving the existence of a cartel solely based on economic evidence can be a challenging task, especially if the relevant market has a structure that encourages parallel behavior[4].

4.   In cartel cases conducted by the Turkish Competition Authority (TCA) that involve the use of economic analysis, two fundamental types of analysis are typically performed: structural break analysis and variance (or more generally, moment) analysis. Structural break tests are type of analyses utilized in cases of agreements restricting competition and concerted practices, and it is more widely used to reveal whether an anticompetitive collusion exists between the undertakings. The main aim of these tests are to model prices in the market and check if there are substantial changes in the underlying data generating processes.

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[1] OECD (2002), "Report on the Nature and Impact of Hard Core Cartels and Sanctions against Cartels under National Competition Laws" p. 75-76.

[2] SCORDAMAGLIA, A. (2010), "Cartel Proof, Imputation and Sanctioning in European Competition Law: Reconciling Effective Enforcement and Adequate Protection of Procedural Guarantees", the Competition Law Review, Vol:7 Issue 1 p. 5-52.

[3] CAN, B. (2011), Rekabet Hukukunda Kartellere İlişkin İspat Standardı, Competition Article, Turkish Competition Author.

[4] Camacho and Rodrigues (2010), https://www.concorrencia.pt/sites/default/files/imported-magazines/CR06_-_Cristina_Camacho-Jorge_Rodrigues.pdf, p.301.

5.   Variance, on the other hand is a measure of distribution and shows how dispersed the data from its mean, i.e. the lower the variance the smaller the average distance of data points from the mean of the data set. The idea behind the use of variance or moment analysis in cartel cases mainly stems from the results of a number of studies in the literature[5] associating the cartel periods with an increased mean of prices accompanying a decrease in variance, i.e. smaller coefficient of variation.

6.   Before moving to the case experience of the TCA on economic evidence in cartel cases, we have to mention that in studies intending to examine the effects of shocks (such as policy changes or alterations in the current situation) on market behavior of firms, the difference-in-differences (DID) designs can also be employed. The difference-in-differences method requires both a treatment group that is subject to the shock's effect and a control group with similar characteristics (parallel pre-treatment trends) but assumed not to be affected by the shock. In this context, DID is an econometric method that can be used to reveal cartel overcharges, if any, or, for mergers/acquisitions, relative price increases after the transaction. According to the analysis in question, average prices of the market with the competition infringement (treatment group) is compared to those in the competitive market with similar characteristics (control group)[6]. The TCA has not performed such an analysis in cartel cases yet, however considering to employ in future cases.

7.   One of the most noteworthy behavioral analyses for cartel detection is the use of tests that examine structural breaks in prices, with the motivation that such breaks can indicate the presence of a competition-restricting agreement. While these tests may not serve as definitive evidence on their own, they provide important signals regarding which sectors may require more in-depth analysis[7] or assist other types of evidence in a particular case.

8.   TCA initiated an investigation[8] in February 2016 against 32 insurance companies and the Insurance Association of Türkiye on allegations of anti-competitive agreements or concerted practices through jointly raising prices and market allocation, which are prohibited by Article 4 of the Law No. 4054 on Protection of Competition.

9.   In this case, a statistical test, the Chow Test, was conducted to examine whether there was a structural break in the pattern of data set since the second half of 2015. The test results indicated that there was a structural break in the average nominal premium levels for the "motor insurance" branch starting from August 2015.

10.   Variance analysis was conducted to closely examine the second half of the year 2015 on a monthly basis when a parallel increase in traffic insurance premiums was observed, with the aim of identifying any potential agreements or tacit collusion among undertakings. The variance analysis revealed that there was no evidence of collusion among the undertakings in regard to insurance premiums.

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[5] For instance, see ABRANTES-METZ, R.M., FROEB,, L.M., GEWEKE, J. and C.T. TAYLOR (2006) "A Variance Screen for Collusion", in International Journal of Industrial Organization, 2006, 24, pp. 467-486; Harrington, J.E (2006) "Behavioral Screening and the Detection of Cartels", in European Competition Annual 2006: Enforcement of Prohibition of Cartels, pp. 51-68.

[6] CHAPSAL, A. and D. SPECTOR (2009), What can be learnt from econometric studies in cartel cases?", Law and Economics Concurrences No: 1–2009, Accessed: 08.1.2019, p. 44.

[7] CREDE, C.J., 2019 "A Structural Breal Cartel Screen for Dating and Detecting Collusion", *Review of Industrial Organization, 54:543–5574*

[8] The Board's decision dated 19.07.2017 and numbered 17-23/383-166.

11.   It was found that, due to the nature and the structure of the traffic insurance services market, undertakings sometimes appear to have similar insurance premium levels and exhibit trends of following each other in insurance premium fluctuations. However, no absolute economic finding was made regarding potential anticompetitive collaboration among all undertakings or various groups of undertakings in the market. As a result, the Turkish Competition Board (Board) decided that the companies concerned had not engaged in any anti-competitive behavior and, accordingly, did not impose administrative fines on the companies subject to the investigation.

12.   In the investigation[9] that was initiated to reveal if undertakings operating in the wheat flour market had colluded on prices, several methods mentioned above also employed. Monthly price data covering approximately 10 years, spanning from 2010 to 2020 (121 months), for the wheat flour industry was monitored to study whether there was a structural break in the underlying data generation process of the price series. Within this scope, reduced-form price equations were developed for different types of flour, and they were tested for structural break using the OLS-CUSUM (Ordinary Least Square Based Cumulative Sum) test. In the analysis, moment analysis was also applied to mark-up rates, calculated based on individual price data of the investigated enterprises and weighted average price series for the overall markets, taking into account monthly domestic and imported wheat prices.

13.   The analyses conducted concluded that, the regression analyses for bread wheat flour and special purpose wheat flour price series within the Northern Anatolia Group and the bread wheat flour price series within the Southern Anatolia Group did not reveal any structural break findings during the observation period.

14.   On the other hand, for both groups, the moment analysis conducted on individual and weighted average real prices of undertakings for the 42 months before and following July 2013, which is assumed to be the initial evidence date of a possible violation, has generally shown that during the assumed violation period, (1) real prices were statistically significantly higher compared to the assumed non-violation period, and during the same period, (2) price variations decreased. In this respect, the observations aligned with the expected price movements typically seen during agreement periods in theory and literature.

15.   TCA initiated another investigation[10] concerning undertakings that are active in the welding sector, to uncover if the parties had been acting together to determine their prices. In welding sector case, (i) Regression analysis (ii) Structural break tests (iii) Stationarity tests (iv) Variance screening analyses were conducted, covering the period from 2011 to 2019.

16.   As a result of the graphical, statistical (variance and t-test), and econometric (structural break analysis) analyses conducted for the three undertakings involved in the investigation, which were primarily engaged in the welding sector and had had the highest sales in the top 5 products, it was deduced that:

- Prices in the sector were not exactly the same but moved at close levels and parallel to each other over time. However, some differences in this trend had begun to be observed by the beginning of 2018.

- Patterns for some products exhibited structural break periods that could not be explained by cost and exchange rate factors in the models explaining their prices.

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[9] The Board's decision dated 07.01.2021 and numbered 21-01/18-8.

[10] The Board's decision dated 08.04.2021 and numbered 21-20/247-104.

However, these breaks occurred downward due to the prices being realized lower than predicted.

- For some products, no structural breaks were observed, and price movements were found to be explainable with cost and exchange rate factors.

- Profit margin analysis indicated that in the second period that included 2018, variable cost-plus pricing/margins increased and fluctuated simultaneously.

17.   Therefore, based on the findings obtained from the analysis of the available data, while it was observed that prices moved in a parallel and close manner during the examined period, and while profit margins increased in the recent period, the impact of a possible collusion behavior, stripped of these effects, could not be observed due to the explanatory effect of cost and exchange rate on changes in market prices.

18.   In the investigation[11] concerning whether six undertakings active in fertilizer industry violated the law by increasing prices together, the pricing behavior of those undertakings were also assessed by means of statistical and econometric analysis. The examination within the case primarily involved monitoring monthly price data for the fertilizer market for approximately 6 years (71 months) in an attempt to determine whether there was a structural break in the underlying process of these price series. The OLS-CUSUM test was chosen as the structural break test for this purpose.

19.   The regression analyses conducted for compound fertilizer and urea fertilizer did not reveal any structural break findings during the observation period that could indicate an explicit or implicit price agreement for these fertilizer types. It was considered that the observed price changes in these fertilizer types during the analyzed time frame could be explained by changes in the explanatory variables (such as cost shifters). At the end of the investigation, the Board decided that the six investigated undertakings had not violated the law.

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[11] The Board's decision dated 26.11.2020 and numbered 20-51/718-317.