Organisation for Economic Co-operation and Development

DAF/COMP/WD(2021)42

Unclassified **English - Or. English**

10 June 2021

DIRECTORATE FOR FINANCIAL AND ENTERPRISE AFFAIRS
COMPETITION COMMITTEE

Cancels & replaces the same document of 3 June 2021

Methodologies to measure market competition – Summaries of contributions

11 June 2021

This document reproduces summaries of contributions submitted for Item 3 of the 135th OECD Competition Committee meeting on 9-11 June 2021.

More documentation related to this discussion can be found at
https://www.oecd.org/daf/competition/methodologies-to-measure-market-competition.htm

Please contact Mr Antonio Capobianco if you have questions about this document.
[Email: Antonio.CAPOBIANCO@oecd.org]

JT03478028

Table of contents

Brazil

CADE employs different methodologies to assess the level of competition to fulfil its role in preventing antitrust violation and promoting competition. The analysis of market competition encompasses a combination of qualitative and quantitative methodologies, according to the particularities of the transaction or market at issue.

This document briefly describes the main tools used by CADE and its Department of Economic Studies (DEE) in merger control, including market concentration indicators, rivalry variables and other tools such the Upward Pricing Pressure (UPP); the Gross Upward Pricing Pressure Index (GUPPI); the Proportionally Calibrated Almost Ideal Demand System (PCAIDS) to mergers simulation; and the Coordinated Price Pressure Index (CPPI). Besides, the DEE has been trying to deepen its analyses by examining different scenarios and efficiencies.

To better illustrate CADE's efforts, case examples are highlighted. Amongst the examples, there are cases in which the quantitative information enables the application of indexes and econometric models to measure competition level; and cases that require the design of different scenarios for the analysis, including information from qualitative analyses.

Relying in complementary methods, CADE has been more accurate when defining relevant markets, detecting barriers to entry, understanding brand relevance and diversion ratios, for example. As a consequence, the competition authority has been made progress in its merger review procedures.

Greece

Concerns over the rising power of retailers in the food sector have led many competition authorities to use existing rules or adopt new rules on superior bargaining power, these rules either forming part of competition law statutes or of other functional equivalents. Supermarkets are the main channel through which households buy a wide range of food products and other consumer goods. The particular importance of purchasing food products and other consumer goods for daily consumption (supermarket items) in terms of social welfare increases the interest for better understanding of how the terms and conditions of supply of firms operating supermarket chains are defined, as they relate to the formation of the final prices offered to consumers. The paper presents the methodology used in a recent sector inquiry of the Hellenic Competition Commission (HCC) regarding basic consumer goods in order to assess vertical market power. First, we present the theoretical contours of the vertical market power concept. Second, we explain the metrics used in the context of this study to measure the degree of vertical competition. Third, we present the empirical results of the implementation of this new approach in the supermarkets sector inquiry recently completed (March 2021) by the HCC.

Korea

1. Indicators to measure market competition

In assessing whether competition in an interested market is sufficient, we can use various indicators for market structure and performance.

Market structure	Market concentration	Concentration ratio(CRk), Herfindahl-Hirschman Index (HHI)
	Entry barrier	Regulations: Approval for business, Restriction on the scope of business, etc.
		Actual barriers: Advertising intensity, Capital intensity, Minimum efficient scale, Amount of secured input, Access to sales and distribution channels, etc.
	Others	Market share variation-fluctuation index, Company ranking variation-fluctuation indicator, etc.
Market performance	Price	Price level, Price fluctuation, etc.
	Profit	Ratio of operating income to sales, Price-cost margin, Tobin's q, etc.

2. KFTC's analysis on market competition

The Korea Fair Trade Commission ("KFTC") biennially conducts an analysis on the domestic market structure in order to understand the overall market competition, and announces the market concentration (CR3, HHI) of each industry. On a market of daily life necessities, in particular, the KFTC conducts a more thorough analysis based on various indicators, and draws policy implications.

In this regard, the KFTC analyzed the competition intensity of the online music service market and the online lecture(for students) market. Both were oligopoly markets with high concentration by a few top companies, but details were different from each other. When it comes to the online music service market, the entry barrier and the profit levels were unexpectedly low. Therefore, we should review the dominant company's sales strategy and its hidden anti-competitive effects. The online lecture market, on the other hand, was a typical oligopoly market with a high entry barrier and high profit levels. Thus, we have been monitoring the dominant company for abusing market power.

Mexico

This note aims to share methodologies and tools to measure competition in the Mexican telecommunications and broadcasting (T&B) sectors used by the IFT, for the purposes of obtaining a diagnostic of the current state and evolution of competition in the different markets within these sectors. These measurements include the use of indicators such as market shares, the Herfindahl Hirschman Index (HHI), erosion of shares through time, price indexes and profit margins, among others, based on international recommendations, and considering that the estimation of those indicators are highly dependent on the kind and quality of information available.

This note also presents the Telecommunications Information Bank (BIT, by its acronym in Spanish) as one of the tools that allows the IFT to monitor the development of the T&B sectors and to estimate market competition. The BIT is an interactive tool that was developed with an intelligence and business analysis perspective and that provides information regarding the macroeconomic environment of T&B in Mexico; the degree of number portability; operators' incomes and investments; indicators related to different services (fixed and mobile telephony, fixed and mobile broadband, and restricted television); the degree of participation of each of the economic agents, among other data that can be consulted, analyzed and downloaded to generate variables, carry out complex sector analyzes, construct dashboards indicators and graphically analyze series in a period.

New Zealand

This paper contributes to the Competition Committee's Hearing on "Methodologies to Measure Market Competition" in June 2021. It focuses on work done by the New Zealand Commerce Commission (NZCC) to measure market competition and apply the results of that measurement.

The NZCC is New Zealand's competition agency, mandated by the Commerce Act 1986 to protect and enhance competition across New Zealand markets and to directly regulate some infrastructure sectors. The NZCC's functions have expanded in recent years, including into market studies and a broader role in the development of policy. To support these and related functions, the NZCC has initiated research into how the level of competition in a market can be assessed quantitatively.

The NZCC's analysis builds on a 2019 study by the researchers Richard Fabling and David C. Maré, in which they computed several competition indicators in order to investigate the link between competition and productivity.1 These included margin indicators (profit elasticity and price-cost margin) and structural indicators (HHI and concentration ratio).

In 2020, the NZCC gained access to the most granular industry-level estimates of margin indicators used in that study. The NZCC analysed these indicators to glean insights into the state of competition in New Zealand markets and into the quality and consistency of the competition indicators themselves. This paper presents an overview of the NZCC's analysis, a discussion of the data and method challenges faced, and potential applications of this type of analysis to the NZCC's future workstreams.

Chinese Taipei

This paper presents different measures, which have been applied to real-life cases in Chinese Taipei, to assess the level of competition intensity in a market. It also touches on the data required for each measure and relevant practical experiences gained from law enforcement.

Measuring the degree of competition in a market requires various data, for example, market shares of individual firms, market concentration, product price, marginal cost and profit margins. As collection of data around marginal cost is relatively difficult, the CTFTC often uses indirect measurements, such as market shares and concentration ratios (CR4 and the HHI) to assess the level of competition in a relevant market. Direct measurement approaches, such as the Lerner index and marketing margin analysis are applied to fewer cases.

The above-mentioned example involving the soybean import and the processing markets is one of the few cases where the CTFTC adopted both the cointegration analysis and the marketing margin analysis. These two methods only require price data on processed soybean products. Given the data collection is relatively easy, the CTFTC can carry out an empirical economic analysis to assess the state of market competition.

Turkey

Competition is the major component of the market economy that provides an allocation-efficient result and thus a welfare optimum. Lack of competition in a market that cause waste of resources, productive and allocative inefficiencies, is considered as market failure. To avoid market failure and/or to reveal potential anticompetitive practices that bring similar results, it is important to measure the level or degree of competition in the market.

Despite the progress in data collection and developments on methods such as new algorithms to process data, and the industrial organization (IO) theory as well, however, it is still far from being an easy task to measure the degree of competition within a market precisely.

As competition is not directly observable, economists usually try to measure competition by indicators through empirical studies or by simulations, which are believed to be related with competitiveness. In this context, occasionally a single indicator is used to evaluate market competition, while a group of indicators are used more often to determine the degree of competition in that market accurately. Concentration measures, such as HHI and C4 ratios, are the most common indicators in use. Due to the complexity of the real world, however, using concentration indicators alone is not usually sufficient to measure competition within a market accurately. Researchers also refer other economic evidences such as mark-up estimations and their evolution in time, as prominent indicators for the intensity of competition in markets.

In this note, we aim to provide a very brief overview of the common methodologies to measure market competition and some techniques used in the Cement Sector Inquiry as an interesting example of the Turkish Competition Authority's (the TCA) experience on the topic. In the study, the TCA conducted price-cost-demand analyses, joint pricing behavior simulations, efficiency and competition analyses to reveal and evaluate the competitive structure of the sector in question, firm behavior, and thus the intensity of the competition in the market.

Ukraine

Antimonopoly Committee of Ukraine (hereinafter - the AMCU) measures competitive intensity of a market and applies quantitative methods for competition analysis in market studies, antitrust investigations (abuse of dominance cases, merger control, etc.), and merger analysis.

According to established practice, the market analysis includes:

- structure and volume of product markets;
- analysis of the market share of individual producers and buyers in the turnover of products;
- assessment of administrative or economic entry barriers entry barriers.

During the conduct of market study the AMCU usually applies statistical methods of information analysis, main types of which include the following:

- Correlation analysis (which enables us to detect and assess the direction of connections between researched parameters).
- Cluster analysis (which enables us to divide group of objects into several groups, which are mutually disjoined in terms of the set of quantitative and qualitative characteristics, The main purpose is the market segmentation).
- Comparative analysis.

But still, the AMCU requires the generalized approach to measure market competition during the market analysis, and for this purpose the AMCU started a project of the development of the calculation methodology of the Competitive Environment Monitoring Index which will conclude four dimensions:

1. entry barriers (capital investments/turnover, market entry/exit);
2. market concentration (HHI or CR);
3. market dynamics (market growth, stability of market shares);
4. prices/profits (profitability level and its dynamics, price analysis).

You may find additional information in our contribution and the draft Index Calculation methodology via the following link.

United States

In enforcing the US Antitrust Laws, the United States Federal Trade Commission ("FTC") and the Department of Justice Antitrust Division ("DOJ") (collectively, the "Agencies") are primarily tasked with identifying whether certain actions or events would tend to lessen competition, which is a central question in merger investigations. While this marginal analysis can present some significant challenges, it sometimes can allow the action or event to be analyzed under approximately a *ceteris paribus* assumption. For example, when investigating how a merger between two nearby hotels may affect competition in that market, it may be appropriate to assume that other factors such as the cost functions of the hotels, the supply of rooms by competing hoteliers, and the demand for hotel rooms in the market are not affected significantly by the merger. To the extent some of these factors are expected to change in particular ways due to the merger, an analysis may be able to account for those changes. The methods used to study the potential lessening of competition from a merger, a marginal effect, have received considerable attention, so we will not revisit that topic here.

Investigation of the competitive effects of the hypothetical hotel merger mentioned above would not require a comparison of the competitiveness of this specific hotel market to a hotel market in some other location where costs and demand conditions may differ significantly. Nor would it necessitate a comparison of the current market to that same hotel market many years ago when important characteristics of the market may have been different. These comparisons would require an assessment of the level of competition using an estimation procedure for a competition metric that could separate out the effect of differing intensities of competition from changes in other market characteristics that may affect market outcomes. While economists at the Agencies are most often required to assess marginal changes in competition, the Agencies have followed the developing literature on methods to measure levels of competition in the economics literature, and have found many informative resources, a selection of which is listed below.