

DETECTING MONOPOLISATION TENDENCIES IN THE CONTEXT OF MODERN BUSINESS CYCLES: ELABORATION VIA IMPLEMENTATION

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Abstract. The research "Detecting monopolisation tendencies in the context of modern business cycles: elaboration via implementation" is the next step in empirical evidence gathering and applicability verification of a methodological framework, developed and disclosed in previously conducted study by the authors (Skoruks, Nazarova, Senfelde, 2016), aimed at providing new quantitative methods of monopolistic trend analysis, while simultaneously considering the economic effects, induced by modern business cycle progression. The research provides a multi-perspective in-depth description of the nature, the occurrence sources, the development procedure and the internal conjuncture specifics of the present day monopolisation process as well as provides an example of modern econometrical method application within a unified framework of market competition analysis for the purpose of conducting a quantitative competition evaluation of an industry – level, resulting in applicable outcomes, suited for both private and public actors in terms of investment/business activity strategic analysis for the former and policy/regulatory action planning for the latter. The main scope of the aforementioned research is devoted to developing and further enhancement of monopolistic tendencies' detecting and quantitative analysis practices, while simultaneously considering the broader context of macroeconomic volatility and the corrective market effects, occurring within various stages of business cycle development. The current research employs a system of economic situation – reflecting ratios based on authentic calculations, conducted within the framework of the chosen industry's structural conjuncture analysis, described through the prism of market power distribution between the involved supply – side actors, while attempting to conduct a robustness and applicability verification test of the empirical methodology via its practical implementation.

Key words: monopolisation process, market power, business cycle, competitive environment, methodology testing.

JEL codes: D42, D43, D47, D52, E32

Introduction

With the vast development of modern business practices and the advent of the globalised trade system, numerous formerly unquestioned and unchallenged visions of the economy functioning paradigms, market mechanisms and causality of business conduction processes had already been and still find themselves in a stage of productive transformation, re-evaluated and positively – critical analysis from various scholarly as well as professional perspectives. Based on the classic Adam Smith's theory (Smith, 2007), John Maynard Keynes (Keynes, 2011) alternative approach and works of Paul Samuelson (Samuelson, 1939), economic research is continuously developing along with the endlessly flexible social and market agenda, causally following and quickly reacting to newly emerging global and regional challenges. While considering the research, conducted by some of the most notable scholars of modern day economic theory, one may reasonably argue that certain aspects of

market interaction are justly defined as empirically – fundamental and thus may not be subjected to any sort of revisionary agendas, which occasionally do find their way onto the discussion issue lists of the modern economist community. Without prejudice to acknowledging certain areas of economic analysis, such as the demand – supply based market equilibrium or the law of diminishing returns, as indubitably empirical, a certain area of market functioning is indeed being addressed diversely by various scholars, professionals and interest group representatives due to the structural controversy, imbedded in the very essence of the relevant phenomenon. The issue in point is the process of monopolisation, taking place in an open market economy and seemingly contradicting with both the economic reasoning for competition – bases resource utilization, product distribution as well as means of production allocation, and the core benefit to society, brought by consumer choice possibilities, namely, needs' satisfaction in the context of market functioning efficiency.

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As it had been previously argued, while the presence of a truly full monopoly undoubtedly brings unrecoverable (deadweight) losses to the society (Motta, 2004), the process of monopolisation is a natural state of affairs, based on both resource limitations and enterprise struggle for profitability, with the mentioned tendencies becoming excessively persistent and particularly visible in times of economic downslide and external shock occurrences (Skoruks, 2014), (Skoruks, Nazarova, Senfelde, 2016). The first deviation from the situation of competition, sufficient in terms of intensity and efficiency, is the obtaining of a dominant market position, which is recognized by the European Union Competition Law as not an infringement per se but rather as a potentially risky situation of possible future negative market trend development. As defined in the Article 102 of the Treaty on the Functioning of the European Union: "any abuse by one or more undertakings of a dominant position within the common market or in a substantial part of it shall be prohibited as incompatible with the common market insofar as it may affect trade between Member States" (TFEU, 1958). Therefore, it may be concluded that monopolisation tendencies constitute a potentially negative economic development, forever, in certain situation, such state of affairs may be "the least of two evils" in regards to the only remaining economically efficient option being a public body interference or even nationalisation, the latter being highly incompliant with the current developments in the European single market.

The question arises in defining the limits of monopolisation process remaining an economically natural and mostly tolerable, in terms of market functioning efficiency, development, adjusted by the consideration of the present stage of business cycle evolutionary maturity and the correspondently generated economic shocks, both endogenous and exogenous, and defining a boundary, which, if

crossed, leads the industry down the path of excessive market power concentration and counterproductive entrepreneurial practices, thus creating a sufficient basis for interference of competition monitoring public body with the goal of deterring further escalation of unfavourable monopolisation process.

The objective of the current research is the conduction of a study on the nature of monopolisation process, the role of market power concentration in monopolisation tendencies' progressive escalation and the defining of the degree of external factor influence in accelerating the mentioned occurrences, contextualised within the existing business cycle theories.

The hypothesis of the current research may be defined as follows: monopolisation tendencies in modern open market economies are driven by excessive individual market power concentration and may be detected and quantitatively measured by evaluating the relevant competition environment, while taking into account the relevant external influence of the business cycle evolutionary progression.

The scientific object of the current research may be defined as market power, perceived as an economic phenomenon, affected by both the internal competitive environment of a modern open market economy and the external influence of constituent business cycle evolution.

The main goals of the current research may be defined as follows:

- description and assessment of the existing substantiations, causes and consequences of modern monopolisation process with an emphasis on evaluation and explanation of the role, taken by market power as an economic phenomenon in the development and evolution of the empirical monopolisation process;
- development of a quantitative methodology of monopolisation process assessment, which considers both the current level of market

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power concentration and its prevalent redistribution trends;

- incorporation of business cycle delivered adjustments to market power *de facto* distribution patterns, which reshapes the final evaluative perception of monopolisation process development in a relevant market into the structure of the previously mentioned methodology;
- testing the robustness and applicability of the developed methodology via its practical implementation in a challenging economic environment.

The following assessment methods shall be used in order to conduct the current research: monographic analysis, econometrical modelling, mathematical criteria analysis, quantitative economic pattern analysis, analysis of qualitative indicator structure and value ranges as well as data grouping method.

1. Theoretical basis of the developed methodology

In terms of economic evaluation, a monopoly is defined as a specific market situation that enables the obtaining of a higher profitability level of economic activity on the behalf of price growth and production cost cutting with the use of the so-called monopoly position advantages (Freedman, 1962). A vast variety of singularised methods of monopolisation level assessment currently exist and are widely implemented for a variety of analytical purposes, such as, for example, the Lerner Index (Lerner, 1934), the Herfindal – Hirshman Index (U.S. Department of Justice..., 2010) or the evaluation of price elasticity. However, the above mentioned methods are either focused on a single legal equity individual monopoly power measurement or target a zero-momentum, "time-frozen" market cluster, which, in both cases, is inappropriate for conduction of a medium-term industry-level holistic monopolisation trend evaluation. Furthermore, the mentioned methods are often mutually inkompliant and lack

synergetic capacities, while remaining highly useful in terms of unilateral application (Skoruks, 2014), (Skoruks, Nazarova, Senfelde, 2016).

In this respect, it is important to note that the European Union Competition Law in the form of the European Commission Regulations and the European Court of Justice Decisions, addresses the issue of competition enhancements and the counterfactual process of monopolisation, defined as market consolidation, via the prism of the relevant market definition, emerging from the mutual overlapping of geographical and relevant product markets (European Commission, 1997). As it may be deduced from the previously stated information and additionally conducted legal text analysis (The Council of the European Union, 2004), the main emphasis in the European Union Competition Law is based on the effective and/or potential competition distortion mitigation, which is strictly prohibited as inkompliant with the conditions of the Treaty on Functioning of the European Union and the conditionality of the Single Market functioning (TFEU, 1958). However, it is crucially important to underline the fact that even a case of *de facto* dominant position acquisition by a private organization is not a *per se* violation of the legislation in place – only the proven abuse of such position generated advantages forms a sufficient legal basis for public body interference. Therefore, it may be concluded that certain market imperfections are considered less harmful by the European Commission that direct administrative action caused distortion of natural economic process conduction (Council of the European Union, 2003). Consequentially, the current European context defines the necessity of quantitatively analysing monopolisation tendencies within relevant markets with a notion of tolerance for minor and, more importantly, economic by their nature cases of market power distribution imperfections, to an extent of accepting a dominant market position, obtained via good willed and fair competition, kompliant with the

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rules, regulating the functioning of the European Single Market.

If addressing monopolisation trend quantitative detection through the prism of market power distribution, concentration and reconfiguration, one must first define the relevant phenomenon and describe its crucial, influence-shaping characteristics. The definition of market power varies among scholars and professionals, being interpreted according to individual commentators' experience, background and affiliation (White, 2012; Council of the European Union, 2004; OECD, 1993). However, several parallels may be drawn, in particular, regarding descriptive features of market power phenomenon and its essential economic structural components, leading to an empirical conclusion that market power enables enterprises to grow their presence in the relevant market and to an extent which is directly proportionate to the market power volume in point, unilaterally alter price levels.

2. Elaboration on the concept of the developed empirical methodology

Reiterating the empirically-theoretical concept mentioned in the first section of the current research, individual market power of an enterprise consists of its ability to unilaterally implement an independently-favourable pricing policy and its current market share, defined as a fraction of the total short-term equilibrium consumption capacity of the market, composed of the corresponding supplier's economic activities within the mentioned relevant market. Therefore, an in-depth analysis of the two relevant crucial factors would greatly benefit the incorporation of market power phenomenon assessment in the addressed broader problematic of monopolisation trend detection in modern globalised open markets.

Individual supply amount is critically affected by the existing or potential demand amount, with both of the mentioned fundamental economic factors being equalised or, econometrically

speaking, mutually balances out by the common denominator of competitive market price. Therefore, it may be concluded that the effective size of an enterprise, measured by its presence in a market, is determined by the symbiosis of its individual supply amount and the corresponding sale price. It may be deduced that the individual supply amount multiplied by the relevant existing sale price would equal the turnover of the mentioned enterprise over a defined timeframe.

Therefore, if an industry level market power distribution analysis is being conducted or the required perspective dictates an evaluation, only focusing on a certain product type or non-supplementary market structures, the turnover of the supply-constituting enterprises shall deliver the required accurate and objective results. (Dierker, Grodal, 1996).

In cases of imperfect or as defined by Chamberlin, monopolistic competition (Chamberlin, 1947), which is the source of monopolisation process development and monopolistic trend emergence, market power is unevenly distributed between the suppliers, active in a relevant market, and the trend of exercising the available influence causally derives from the ability to either neglect or predetermine the retaliation actions of the existing effective competitors, which consequentially leads to monopolistic trend strengthening and potential dominant position establishing. Following such logic, the ratio of cumulative individual market power distribution in case of the existing monopolistic competition to the equivalent value in situation of perfect competition would objectively and rationally reflect on the current state of monopolistic trend development and, if a dynamic trend is analysed, enable the calculation of such occurrence future emergence probability. A detailed elaboration on the current issue may be found in the authors' previously elaborated works (Skoruks, Nazarova, Senfelde, 2016).

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3. The quantitative modifications to the structure and functioning principles of the developed methodology

The further introduced indicator of market power concentration distribution is based on measuring the state of de facto market conditions being divergent from those of a perfectly competitive situation, while taking into account the objective mutual interconnectedness of competing enterprise in the context of supply-side of the general market equilibrium. While presuming that each enterprise is rationally motivated to exploit their maximum market power on a largest possible scale and that every enterprise in a competitive environment theoretically engages every other opponent with the synergetic effect of marker power being a holistic economic phenomenon, the aggregated disproportionality of market power distribution in a relevant market may be determined as the opposite of simultaneous individual market power cumulative mutual compensation, to be more precise, its excessive amount, which is not being cancelled out by a pro rata competitor influence. Therefore, mutual cumulative individual market power compensation may be reflected by what for the purpose of the current research shall be further referred to as the mutual compensation index, which may be calculated in the quantitative fashion, described in the authors' previously developed research paper (Skoruks, Nazarova, Senfelde, 2016).

Business cycle development and constituent maturity stages may be evaluated in various manners, depending on the preferred economic paradigm or the prevalent common practices, dominant in a certain institution, organization or region (Hansen, 1985; Kitchin, 1923; Lee, 1955, Heijdra, 2009; Nazarova, 2014). However, certain approaches had proven themselves as specifically efficient in terms of industry level development analysis in a macroeconomic cycle context (Long, Plosser, 1983; Plosser, 1989; Romer, 2011, Nazarova, Dovladbekova, 2015; Skoruks, Nazarova, Senfelde, 2015). The initial five economic indicators, which had been chosen to represent the external effect the maturity and development of the general business cycle inflicts on internal market power distribution conjuncture, for the purpose of the current research and due to available macroeconomic data credibility issues had been recalibrated to become four methodology-comprising element: (1) market consumption capacity dynamics of the analysed industry; (2) dynamics of employment in the analysed industry; (3) dynamics of the share of the analysed industry in the GDP of the relevant national economy; (4) market capacity dynamic of the analysed industry relative to GDP of the relevant national economy. Correspondingly, the modified external adjustment ratio (Skoruks, Nazarova, Senfelde, 2016) may be calculated in the manner, reflected in Formula 1:

$$K = \frac{\sum_{t=1}^n \frac{MCC_t}{MCC_{t-1}}}{n} * \frac{\sum_{t=1}^n \frac{EMP_t}{EMP_{t-1}}}{n} * \frac{\sum_{t=1}^n \frac{GDP_{Pr,t}}{GDP_{Pr,t-1}}}{n} * \left[\left(\frac{\sum_{t=1}^n \frac{MCC_t}{GDP_{Pr,t}}}{\sum_{t=1}^n \frac{MCC_{t-1}}{GDP_{Pr,t-1}}} \right) * n - 1 \right] \quad (1)$$

where

K – external adjustment ratio, scalar values;

MCC – market consumption capacity, currency values;

EMP – employment in the analysed industry, scalar value;

GDP_{Pr} – real gross domestic product, currency values;

t – sliding consistent annual analytical period, years

n – cumulative timeframe of the conducted analysis, years.

As reflected by Formula 1, the external macroeconomic pressure alters the value ranges, further defined in Table 1, thus adjusting the qualitative interpretation of the affected qualitative reference benchmarks, while enabling

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a more accurate analytical perception of the addresses issue to be implemented as a coherent methodological approach.

Consequently, monopolisation trend presence in a relevant market may be quantitatively detected by employing the proposed method, further referred to as the competition level index, which may be calculated in the manner, presented in Formula 2 as well as in the previously conducted research (Skoruks, Nazarova, Šenfelde, 2016) (also refer to for elaboration on qualitative interpretation of the acquired quantitative value ranges):

$$CLI = \frac{N^2 - \frac{N}{MCI \cdot K}}{N^2} = \frac{N^2 - X}{N^2} \quad (2)$$

where

CLI – competition level index, %;

N – median number of suppliers in the market within the analytical period, scalar values;

MCI – average mutual compensation index, scalar values;

K – external adjustment ration, scalar values;

X – market power x – factor: the quotient of N and the product of MCI and K, scalar values.

In order to verify the practical applicability of the developed methodology, its quantitative composition had been tested via its implementation in the Latvian mobile communication market, which had been in a state of a three supplier-based oligopoly, undergoing a continuous price war since at least 2010. A calculation, adhering to the principles, laid out in the developed methodology and based on the available macroeconomic statistics (CSB, 2016a, 2016b) as well as on THE annual reports of the relevant enterprises (Lursoft data base, 2016a, 2016b, 2016c), was conducted, generating intriguing results, which had been summarised in Table 1.

Table 1

Results of the conducted experiment: analytical summary

Indicator	2012/2011	2013/2012	2014/2013	2014/2011
N	3	3	3	3
MCL	0.751503	0.787279	0.826801	0.755768266
K	1.233877	0.992597	1.114451	1.183149567
CLI	64.05 %	57.34 %	63.82 %	62.72 %
Form of competition	Volatile progressive competition	Volatile progressive competition	Volatile progressive competition	Volatile progressive competition
Monopolistic trend endurance	Emerging	Emerging	Emerging	Emerging

Source: compiled by the authors

As it may be seen from Table 1, the number of suppliers remained unchanged during the entire analytical period of four sequential years, so did the form of competition and monopolistic trend endurance qualitative indicators, implying that the relevant market remains in a constant competitive clinch, which, given its oligopolistic nature, leads to a state of price war continuation and price-based competition tool utilization. The MCL had reflected some minor fluctuation, generally revolving around ~0.75577 in terms of the relevant indicator's quantitative value, disclosing a situation of aggressive competition

and sharp mutual engagement between the suppliers, suggesting that consumer prices may generally be lower than they would have been if no price war had existed below its current scale and magnitude. The external adjustment ration had reflected a visible level of volatility, especially in 2012-2013 period, mostly due to a slowdown in both GDP and market consumption capacity growth, creating a paradigm of limited new competitor entrance possibilities, thus further entrenching the existing oligopolistic market structure. The competition level index had revealed a state of consistency in

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progressivity and volatility of the current competitive environment, which if seeming biased at the first glance, corresponds fully to a situation of competition being driven by a price war in a lasting oligopoly, meaning that the mentioned competition stays progressive and beneficial for consumers for as long as the price-based suppliers' individual market share redistribution's practices are adhered to by the involved service providers (the "progressivity" component), while presenting a significant risk of situation's stabilisation with possible eventual stagnation if the price-war is replaced with a "price-truce" (the "volatility" component). As a side note, it must be mentioned that the acquired results of the conducted experiment generally correspond and do not contradict the findings of the Latvian Competition Council's conducted inquiry into the competitive environment of the relevant market (CC, 2015). Therefore, it may be stated that the developed methodology had been proven to generate both quantitative outputs and qualitative outcomes, which are empirically logical and scientifically correct, while remaining statistically significant and clear in terms of their interpretation.

Conclusions

Taking into account the conduct, results and findings of the current research, one may conclude the following:

- 1) monopolisation tendencies are most likely to emerge in situations of disproportionate

individual market power distribution between suppliers, conducting economic activities within a defined relevant market and may be altered by business cycle-caused external economic pressure and general macroeconomic development trends;

- 2) monopolisation tendencies may be detected through the analysis of individual market power mutual compensation effect in the context of the aforementioned business cycle evolutionary progression, specifically by applying harmonised quantitatively-analytical methods and their qualitative interpretation algorithms in the context of synergetic econometric modelling;
- 3) the developed methodology proved to be a robust and efficient approach to monopolisation trend detection, recording and evaluation, which performed well under challenging economic and market structuring conditions;
- 4) furthered implementation and testing of the developed methodology may positively contribute to enhancing its analytical record and functional credibility;
- 5) furthered implementation and testing of the developed methodology should be conducted under different economic and market structuring conditions that were described in the current research in order to make a positive contribution to the empirical credibility of the relevant analytical approach.

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