DETECTING MONOPOLISATION TENDENCIES IN THE CONTEXT OF MODERN BUSINESS CYCLES: A QUANTITATIVE PERSPECTIVE

Dmitrijs Skoruks¹, Mg.oec., Jekaterina Nazarova², Mg.oec., Maija Senfelde³, Dr.oec.

1, 2, 3Faculty of Engineering Economics and Management, Riga Technical University

Abstract. The research “Detecting monopolisation tendencies in the context of modern business cycles: a quantitative perspective” 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 on 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 effect, occurring within various stages of business cycle development. The introduced methodology shall be structured in a coherently-comprehensive manner, enabling a constituent analysis of a possibly monopolistic market trend, followed by a corrective adjustment of the acquired result by crucial secondary influence factors, deriving from the conjuncture specifics of competition in the relevant market and the empirical consequences, which are rooting from the current stage of respective industry’s business cycle maturity. The current research employs a system of economic situation-reflecting ratios, based of authentic calculations, conducted within the framework of the relevant industry’s structural conjuncture analysis, while projecting the acquired corrective coefficient on the competitive situation in the evaluated market, described through the prism of market power distribution between the involved supply-side actors.

Key words: monopolisation process, market power distribution, business cycle, competitive environment, competition development trends.

JEL code: 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 aspect 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, need satisfaction in the context of market functioning efficiency.

As it had been previously argued, while the presence of a truly full monopoly undoubtedly brings unrecoverable (deadweight) losses to the society, 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 occurrences² (Skoruks, 2014). 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 (Stucke, 2013).

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, creating a sufficient basis for competition monitoring public body interference with the goal of deterring further escalation of unfavourable monopolisation process.

The objective of the current research is the conduction of a full–scale 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 evolution and its current development stage.

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 modern evolution of the empirical monopolisation process;

• development of a quantitative monopolisation process assessment methodology, which considers both the current level of market

²Corresponding author. Tel.: +37129946837, E-mail address: Catherine.Nazarova@gmail.com; ¹Corresponding author. Tel.: +37129184578, E-mail address: Maija.Senfelde@rtu.lv
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.

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

1. Theoretical background of the conducted research

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 (US 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 incompliant and lack synergetic capacities, while remaining highly useful in terms of unilateral application (Skoruks, 2014).

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 deducted 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 incompliant 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 (The Council of the European Union, 2003). Consequentially, a 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, compliant with the 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 market power phenomenon descriptive features 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.

Consequently, it may be concluded that the currently existing scientific literature and legislative commentary provides a solid basis for development of a quantitative analysis of competition structural composition in various heterogeneous product relevant markets and the establishment of a conceptual methodology for the previously mentioned evaluation conduction seems empirically possible.

2. Concept of the developed monopolisation process evaluation 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 market total short-term equilibrium consumption capacity, 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
state of monopolistic trend development and, if a dynamic trend is analysed, enable the calculation of such occurrence future emergence probability. It other words, the objective economic reality disables the relevant market from tending to transform into a state of perfect competition, thus, limiting the maximum value of dispersed market power concentration, decreasing the

Jelgava, LLU ESAF, 21-22 April 2016, pp. 197-201 actual high end value of optimal cumulative market power distribution, which, while taking into account the constant value of the originally generated quantitative results, causes it to proportionately shift between the quantitative interpretation of the mentioned value, expressed as the proximity value ranges, reflected in Figure 1.

Source: compiled by authors

Fig. 1. The concept of generated result adjustment by business cycle corrective influence from the external (business cycle) perspective

As reflected in Figure 1, if quantitative outcome values, provided by the developed methodology based analysis are altered, their correspondent qualitative interpretation and perception grading scales are simultaneously adjusted to adequately fit the newly detected economic reality, thus, making the proposed approach suitable for evaluating both endogenous and exogenous factors, influencing the analysed competitive environment.

3. The quantitative 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 Formula 1:

\[
\text{MCI} = \frac{\text{MSH}_1}{\text{MSH}_e} \cdot \frac{\text{MSH}_2}{\text{MSH}_e} \cdot \frac{\text{MSH}_3}{\text{MSH}_e} \cdot \ldots \cdot \frac{\text{MSH}_n}{\text{MSH}_e} = \prod_{i=1}^{n} \left[ \frac{\text{MSH}_i}{\text{MSH}_e} \right]
\]

(1)

where

MCI – mutual compensation index, %;
MShi – de facto individual market share of a supplier, %;
MShHe – nominal individual market share of a supplier in case of perfect competition, %.

While taking into account the information, made available in Section 2 and Section 3 of the current research and more specifically outlined in Figure 1 and Formula 1, it would be beneficial in terms of raising the cumulative efficiency of the conducted analysis to incorporate the according conditions and influence factors into the composition of the proposed methodology, while simultaneously taking into account the external macroeconomic pressure, emerging from the relevant developments in the continuous business cycle evolution.

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). However, certain approaches had proven ineffective or the prevalent common practices, dominant in a certain institution, organization or region (Hansen, 1985; Kitchin, 1923; Lee, 1955). However, certain approaches had proven ineffective.

Correspondingly, the following five economic indicators had been chosen to represent the external effect the maturity and development of the general business cycle has on internal market power distribution conjuncture: (1) market consumption capacity dynamics; (2) dynamics of external investment amounts in the analysed industry; (3) dynamics of employment in the analysed industry; (4) dynamics of share of the analysed industry in the GDP of the relevant national economy; (5) market capacity dynamic relative to GDP growth/decline. For the purpose of the current paper, the mentioned corrective coefficient hereafter shall be referred to as the external adjustment ratio. While taking into account the previously mentioned information, the external adjustment ratio may be calculated in the manner, reflected by Formula 2:

\[
K = \frac{\sum_{t=1}^{n} MCC_t}{n} \cdot \frac{\sum_{t=1}^{n} INV_t}{n} \cdot \frac{\sum_{t=1}^{n} EMP_t}{n} \cdot \frac{\sum_{t=1}^{n} \Delta GDP_t}{n} \cdot \frac{1 + \Delta MPC}{n}
\]

where
K – external adjustment ratio, scalar values;
MCC – market consumption capacity, currency values;
INV – external investment amount in the analysed industry, currency values;
EMP – employment in the analysed industry, natural value or percentage;
GDPPr – 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 2, the external macroeconomic pressure (explained in Figure 1) alters the value ranges, further defined in Table 1, thus adjusting the qualitative interpretation of the affected qualitative reference benchmarks, while enabling a more accurate analytical perception of the addresses issue to be implemented as a coherent methodological approach.

The detection of existing or potential monopolisation tendencies in a given relevant market comprises from both individual market power distribution and the actual number of suppliers, financially able and strategically willing to compete for redistribution of the relevant economic asset in the context of business cycle constituent conduct. Consequently, monopolisation trend presence in a relevant market may be quantitatively detected by employing the method, for the purpose of the current paper further referred to as the...
competition level index, which is econometrically described in Formula 3:

\[
\text{CLI} = \frac{N^2 - \frac{MCI \times K}{N^2}}{N^2} = \frac{N^2 - X}{N^2}
\]

where

\(\text{CLI}\) – competition level index, \%;
\(N\) – number of suppliers in the market within the analytical period, scalar values;
\(MCI\) – 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 elaborately describe the qualitative interpretation of the competition level index generated quantitative results, it would be rational to create a summary of the proposed methodology’s functionality and applicability. The mentioned description had been made available in the form of Table 1:

<table>
<thead>
<tr>
<th>Value range</th>
<th>(-∞; 55%)</th>
<th>(55%; 30%)</th>
<th>(30%; 0)</th>
<th>[0]</th>
<th>(0; 30%)</th>
<th>(30%; 75%)</th>
<th>(75%; 100%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of competition</td>
<td>Regressive competition</td>
<td>Stably regressive competition</td>
<td>Increasingly regressive competition</td>
<td>Point of divergence</td>
<td>Declining progressive competition</td>
<td>Volatile progressive competition</td>
<td>Sufficiently progressive competition</td>
</tr>
<tr>
<td>Form of competition</td>
<td>Excessively regressive competition</td>
<td>Strong</td>
<td>Moderate</td>
<td>Struggling</td>
<td>Weak</td>
<td>Emerging</td>
<td>Non-existent</td>
</tr>
<tr>
<td>Monopolistic trend endurance</td>
<td>Powerful</td>
<td>Strong</td>
<td>Moderate</td>
<td>Struggling</td>
<td>Weak</td>
<td>Emerging</td>
<td>Non-existent</td>
</tr>
<tr>
<td>Probability of monopolistic trend development</td>
<td>Certain</td>
<td>Very high</td>
<td>High</td>
<td>Medium</td>
<td>Low</td>
<td>Dubious</td>
<td>Insignificant</td>
</tr>
</tbody>
</table>

Source: compiled by authors

As it may be seen from Table 1, the type of competition may be described as either tending towards individual market power mutual compensation on a level, enabling further market entry barrier elimination and existing supplier intensified multilateral engagement or, on the contrary, showing a trend of enhancing market structure stagnation and further individual market power disproportionate consolidation, the former case obtaining the title of progressive competition, while the latter being dubbed regressive competition. From the perspective of private market actors, progressive competition indicates varying degrees of market consumption capacity saturation and suggests a market entry is possible or, from an internal perspective, reflects relatively equal further profit generation opportunities on the basis of fair and transparent competition, while regressive competition indicates significant economic market entry barriers, which question the financial rationality of such attempts, simultaneously pointing out an imbalances market structure with possible internal discrimination of the modest by the mighty. Additionally, regressive competition may be defined as the situation of monopolistic trend already occurring and consequentially, if left unchallenged, having the potential of further expanding its negative influence over the entire market structure via continues individual market power disproportionate concentration in a certain supplier cluster or influence field of an individual supplier. Simultaneously, if the number of suppliers is limited and the market structure is in a state of de facto oligopoly or quasi – oligopoly,
low values of competition level index in the regressive competition range reflect a clustered concentration of market power, meaning that a high probability of prohibited horizontal agreement is present.

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;

2) monopolisation tendencies may be altered by both business cycle caused external economic pressure and macroeconomic development trends of a certain national or regional economy;

3) monopolisation tendencies may be detected through the analysis of individual market power mutual compensation effect in the context of the aforementioned business cycle evolution;

4) applying harmonised quantitatively-analytical methods and their qualitative interpretation algorithms in the context of synergetic econometric modelling proved to be an efficient methodological approach of monopolisation trend detection, recording and evaluation.

Bibliography


