RIGA TECHNICAL UNIVERSITY

Faculty of Engineering Economics and Management
Institute of Civil Engineering and Real Estate Economics

Dmitrijs Skoruks

Doctoral Student of the Study Programme "Management and Economics"

MONOPOLISATION PROCESS ASSESSMENT UNDER MODERN ECONOMIC CONDITIONS

Summary of the Doctoral Thesis

Field: Economics
Sub-field: Macroeconomics

Scientific supervisor
Professor Dr. oec.
MAIJA ŠENFELDE
Scientific consultant
Professor Dr. math.
GAIDA PETERE

RTU Press
Riga 2018

DOCTORAL THESIS PROPOSED TO RIGA TECHNICAL UNIVERSITY FOR THE PROMOTION TO THE SCIENTIFIC DEGREE OF DOCTOR OF ECONOMIC SCIENCES

To be granted the scientific degree of Doctor of Economic Sciences, the present Doctoral Thesis has been submitted for the defence at the open meeting of RTU Promotion Council on February 2, 2018, 12:00 at the Faculty of Engineering Economics and Management of Riga Technical University, Kalnciema Street 6, Room 209.

OFFICIAL REVIEWERS

Professor Dr. oec. Inga Lapiņa
Riga Technical University

Professor Dr. oec. Ērika Šumilo
The University of Latvia

Professor Dr. oec. Vytautas Juščius
Klaipeda University, Lithuania.

DECLARATION OF ACADEMIC INTEGRITY

I hereby declare that the Doctoral Thesis submitted for the review to Riga Technical University for the promotion to the scientific degree of Doctor of Economic Sciences is my own. I confirm that this Doctoral Thesis had not been submitted to any other university for the promotion to a scientific degree.

Dmitrijs Skoruks ……………………………. (signature)
Date November 13, 2017.

The Doctoral Thesis has been written in English. It consists of Introduction; 3 chapters; Conclusion and Recommendations; 20 figures; 37 tables; 60 appendices; the total number of pages is 180, not including appendices. The Bibliography contains 185 titles.

INTRODUCTION

With the vast development of the modern business practices and the advent of the globalized trade system, numerous formerly unquestioned and unchallenged visions of the economy functioning paradigms, market mechanisms and conformity of natural laws had already been and still find themselves in a stage of productive transformation, re-evaluated and positively and critically analysed from various scholarly as well as practice perspectives. Based on the classic Adam Smith's theory, John Maynard Keynes' approach and works of Paul Samuelson, economic research is further developing along with the endlessly flexible socioeconomic agenda, causally following and quickly reacting to newly emerging global and regional challenges. As it had been stated in "An Inquiry into the Nature and Causes of the Wealth of Nations" Book IV, Chapter VIII: "Consumption is the sole end and purpose of all production, and the interest of the producer ought to be attended to, only so far as it may be necessary for promoting that of the consumer". Thus, the father of "invisible hand" concept underlines that no form of competition, regardless of its specifics and market conjuncture composition, is free from or can neglect the maximum level of consumption capacity, made available by the current demand (Smith, 2007, *512*).

Complementary, it had been stated by Paul Samuelson that "every good cause is worth some inefficiency" (The Independent, 2009). Thus, it may be argued that for the sake of economic stability maintenance and social utility maximization, a shift from perfect or near-perfect competition can and to some extent, may, if certain contextual conditions are present, be considered tolerable if economically suboptimal. It is further explained in "The General Theory of Employment, Interest, and Money" that "the difficulty lays not so much in developing new ideas as in escaping from old ones". Consequentially, this undoubtedly widely respected author suggests the employing of a non-conventional approach to implementing new elements into the modern economic theory while being able to take a fresh, innovative look at many seemingly common aspects of market interactions (Keynes, 2011, *4*).

While considering the previously mentioned quotations by some of the most notable scholars of modern day founding 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 do find their way and are widely accepted in the modern economist community. Without prejudice to acknowledging certain areas of economic analysis, such as the demand and 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, resource utilization efficiency, 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.

While the presence of the 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 time of economic downslide and external shock occurrences. 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 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 are a potentially negative development, however, in certain situation, such state of affairs may be "the least of two evils" in regard to the only other economically efficient option being public body interference or even nationalization, the latter being highly uncompliant 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 prospect enhancement 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 public competition monitoring bodies to interfere with the goal of deterring further escalation of unfavourable monopolisation process.

The current Doctoral Thesis takes a step towards providing a methodologically comprehensive and scientifically justified answer to the mentioned empirical question, while addressing the relevant problematics via supply-side multifactorial analysis, viewed through the prism of quantitative economic evaluation conduction via implementing a robust and reliable yet risk-aware and reasonably data-undemanding analytical framework.

The aim of the Doctoral Thesis is to conduct an in-depth study on the nature of monopolisation process, the role of market power concentration in monopolisation tendencies' progression and define the contemporary influence factors, which accelerate the mentioned occurrences, while developing a unified methodological framework of monopolisation process analysis.

The Hypothesis of the Doctoral Thesis may be defined as follows: contemporary small open economies undergo a natural, economic reality-shaping factor-based and internal competition supported market consolidation process, which leads to the acceleration of individual monopoly power concentration in specified niches, particularly in those industries and relevant markets, which are excluded from participation in international trade and are therefore constrained in the scale of positive regional convergence and cross-border entrepreneurial cooperation effects, delivered by the interconnectedness of the modern global economy.

The Main Tasks of the Doctoral Thesis may be formulated as follows:
1. to describe and conduct an assessment of the existing substantiations, causes and consequences of monopolisation process;
2. to evaluate and explain the role, taken by market power as an economic phenomenon, in the development and evolution of the monopolisation process;
3. to define the existing market power concentration evaluation methods;
4. to conduct a quantitative experimental study on empirical compatibility and mutual complementarity in terms of their functional applicability;
5. to develop a monopolisation process quantitative assessment methodology, which considers both market power concentration and redistribution trends.

The Object of the Doctoral Thesis is the process of monopolisation, perceived as an economic phenomenon, its concentration trend, their structuring element and main influencing factors.

The Subject of the Current Doctoral Thesis is a framework of monopolistic tendency-driven market power-comprising element, relevant in the case of a modern open market economy.

Empirical Assumptions and Limitations. In order to establish a scientifically clarified field of analysis, the following assumptions are being established and further taken into consideration, while conducting the current research: all market participants, especially the ones operating on the supply side of the established equilibrium, tend to maximize their profits; a crisis situation, both structural and shock-triggered in its essence, does not trigger a significant shift of economic activity from the legally established and clearly defined fiscal field to the realm of "shadow economy"; in order to focus the research effort on those segments on the analysed industries that factually enable a macroeconomic drive for long-term sustainable development, the supply-side market actors with market shares below a five percent benchmark shall be grouped in statistical data cluster units, sufficient to satisfy the mentioned minimum volume criteria.

Theoretical Framework of the Research. The theoretical, analytical and methodological framework of the current research is based on the works and contribution to the modern economic theory by such authors as Arrow K. J., Boehm–Bawerk, E.v., Boettke, P. J., Buchanan, J., Stubblebine, Wm. C., Chamberlin, E. H., Davis, J. B., Dimand, R. W., Fisher, I., Friedman, M., Harcourt, G. C., Kerr, P., Hayek F. A., Jensen, R. T., Miller, N. H., Keynes, J. M., Krilovs, L., Marshall, A., Menger, C., Mises, L. v., Motta, M., Nothbard, M. N., Peitz, M., Valletti, T., Robinson, J., Rutherford, M., Salerno T. J., Samuels, W. J., Biddle, J. E., Say, J.-B., Selgin, G. Shionoya, Y., Sraffa, P., Dobb, M. H., Stiglitz, J. E., Stucke, M.E., Sullivan, A., Sheffrin. S. M., White, L. and others.

Methodological Framework of the Research. The following assessment methods shall be used to conduct the current research: monographic analysis, graphic analysis, mathematical criteria analysis, quantitative economic pattern analysis, qualitative resulting range analysis, data harmonisation and grouping, expert method as well as other technically-suitable methods.

Scientific Novelty of the Research
1. The research provides in-depth insight into the stance, acknowledgements and attitude of various schools of economic thought towards monopolisation as a dynamic market phenomenon as well as the corresponding rationale behind the positions taken.
2. The current research establishes a fact-based unified comparative summary of consensus between the mentioned schools of economic thought, regarding the defined research object, which serves as an empirical "common denominator" of conceptual understanding of the relevant market phenomenon, thus enabling the creation of a unified definition of both monopoly as an empirical market type and the process of monopolisation as a dynamic market phenomenon, consequentially leading to a fundamental consensus among the variating yet conceptually non-contradicting views of various schools of economic thought on the relevant matter.
3. The research establishes and proposes an innovative, multifactorial framework of market type definition and typological stratification, enhancing the existing scientific literature on the relevant topical issue and simultaneously enabling a more quantitative approach in terms of addressing the corresponding matter in future research.
4. The current research enabled the development of a unified monopolisation process assessment methodology, which had been experimentally proven to be a reliable, low-cost, easy-to-use, robust and efficient tool for conducting typological evaluation of markets via stratification, while quantifying the existing level of monopolisation and evaluating its further progression potential.
5. The research enabled the development of a flexible and functionally versatile monopolisation process assessment tool, which may be beneficially used by both public-sector institutions and private sector organisations, as well as think-tanks and non-profit endowments.

Statements of the Current Doctoral Thesis.
1. The process of monopolisation is a natural economic phenomenon, emerging from and simulated by competing enterprises striving for business process profitability, market position strengthening and gaining the desired entrepreneurial competitive advantages.
2. Monopolisation trends are most likely to emerge in situations of disproportionate individual market power distribution between supply-side market actors, engaged in economic activities within a defined relevant market and mutually competing, while implementing price-related engagement strategies.
3. Contemporary macroeconomic conditions enable the emergence of an empirical situation, in which small open economies undergo an objective business environment, factor-based and internal competition-driven process of market consolidation, which leads to an accelerated concentration of individual monopoly power in specified niches, particularly in those industries and relevant markets, which are excluded from participation in international trade and are therefore constrained in the scale of positive regional convergence and cross-border entrepreneurial cooperation effects, delivered by the interconnectedness of the modern global economy.

4. Monopolisation tendencies may be detected through the analysis of individual market power mutual compensation effect in the context of the business cycle evolution.
5. Applying harmonised quantitatively-analytical methods and their qualitative interpretation algorithms in the context of synergetic modelling proved to be an efficient methodological approach of monopolisation trend detection, recording and evaluation.

Structure of the Doctoral Thesis

The Content and Volume of the Doctoral Thesis. The Doctoral Thesis consists of three chapters:

1. Theoretical context and background of the monopolisation phenomenon.
2. Analysis of methods commonly used to address the relevant problematic.
3. The proposed methodological solutions and their experimental justification.

The volume of the current Doctoral Thesis is 180 pages, not including annexes. The Thesis contains 37 tables, 20 figures and 16 formulas as well as 60 annexes that provide detailed information of the progression of the conducted research that simultaneously transparently reflects the relevant intermediate findings and acquired results. While conducting the research, the information and data of 185 bibliographic sources and other relevant sources were employed, all of which are listed in the bibliography.

Chapter 1 of the Doctoral Thesis provides an analytical overview on the relevant topical issue, while particularly concentrating on providing an in-depth insight into the stance and attitude of various schools of economic thought towards the defined research object and the research subject, resulting in a fact-based unified comparative summary, which enables the creation of a unified trans-scholar definition of both monopoly as a modern market type and the process of monopolisation as a dynamic market process.

Chapter 2 of the Doctoral Thesis provides a combined qualitatively-quantitative overview of the methods currently and commonly used to the widest extent in cases of defining market concentration levels and the levels of monopolisation in the mentioned markets, while providing evidence of their unilateral efficiency, accompanied by an embedded inability to provide positive synergetic effects when applied simultaneously, thus justifying the need for both redefining of the market typological stratification approach, currently in use and a unified model of comprehensive, transparent and functionally versatile monopolisation process assessment.

Chapter 3 of the Doctoral Thesis provides a detailed description of the quantitative outline, the comprising elements, the functional composition and the quantitative principles, embedded in the structure of the developed unified monopolisation process assessment model, followed by an experimental implementation of the proposed analytical instrument, which delivered positive results, while simultaneously reaching the defined research objective (aim) and confirming the defined research hypothesis.

In the final Chapter of the Doctoral Thesis the main finding, empirical acknowledgements and crucial conclusions, obtained during the conducting of the relevant research are summarised in a transparent and comprehensive manner, thus enabling the drafting and presentation of the corresponding proposals.

Practical Significance of the conducted research.

1. The Doctoral Thesis enables a higher level of empirical and methodological consensus between various esteemed historical and contemporary schools of economic thought, enabling a scientific consensus regarding the understanding and applicable utilization of such definition as monopoly power, the process of monopolisation, full monopoly and total level of market monopolisation, all of which had been used as conceptual background of the conducted monopolisation evaluating methodology creation, imbedded in its qualitative components and quantitative elements.
2. The Doctoral Thesis enables the development of a scientifically verified (in both qualitative and quantitative terms) market typological stratification system, which greatly enhances the existing commonly used market type definitions, allowing a higher level of interpretational precision and understating of the existing causality of business process conduct within the evaluated economic environment internal, thus establishing the possibility to conduct a significantly more accurate market conjuncture analysis.

3. The Doctoral Thesis enables the development of a scientifically verified monopolisation process assessment methodology, which governmental institutions and public agencies, especially those entrusted with regulatory and competition protection functions, may make extensive use of for policy planning, implementation and assessment as well as other general analytical functions.

4. The Doctoral Thesis enables the development of a scientifically verified monopolisation process assessment methodology, which private for-profit organisations and enterprises as well as entrepreneurial associations may make extensive use of for business strategy, market screening and analytical purposes of competition environment, particularly while making decision on the possibility of current operation expansion, rationality of entering new markets and conducting a general assessment of operational activity challenges, including that of a regional/local branch level.

5. The Doctoral Thesis enables the development of a scientifically verified monopolisation process assessment methodology, which research institutions, academic bodies, non-for-profit organisations and think-tanks may make extensive use of for business environment, competition intensity and industry/market studies in order to enhance the available analytical and methodological capacities, providing an opportunity to utilize a low-cost, robust assessment methodology, while enabling the use of the obtained results in consultations with governmental representatives, public official and/or for lobbying activities and making a case for further progression of the defined organisational agenda.

List of Publications

Generally recognised peer-reviewed publications

1. Skoruks, D., Šenfelde, M. The Empirical Methodology of Modern Monopolization Process Assessment as a Sustainable Consumption Ensurance Tool. No: Economic Science for Rural Development No. 40, Latvia, Jelgava, April 23–24, 2015. Jelgava: Latvia University of Agriculture, 2015, pp. 14–26 ISBN 978-9984-48-183-8. [Indexed in ISI Web of Science]

2. Skoruks, D., Šenfelde, M. Empirical Methodology of Modern Monopolisation Process Assessment: an Extended Commentary. No: Economic Science for Rural Development No. 45, Latvia, Jelgava, April 27–28 2017. Jelgava: Latvian University of Agriculture, 2017, pp. 360–366. ISBN 978-9984-48-261-3. ISSN 1691-3078. [Indexed in ISI Web of Science]

3. Skoruks, D., Šenfelde, M. Econometric Methodology of Monopolization Process Evaluation. Business, Management and Education, 2014, Vol. 12, No. 1 (2014), pp.47–59. ISSN 2029-7491. e-ISSN 2029-6169. Available from: doi:10.3846/bme.2014.04 [Indexed in EBSCO]

4. Skoruks, D., Nazarova, J., Šenfelde, M. Monopolistic Trend Analysis in the Context of Efficient Entrepreneurial Decision Making. *Journal of System and Management Sciences*, 2015, Vol. 5, No. 2., pp. 33–58. ISSN 1816-6075. e-ISSN 1818-0523.

5. Skoruks, D., Nazarova, J., Šenfelde, M. Monopolisation Trend Conditionality under Modern Economic Conditions: A Case Study of Road Construction Public Procurement Conjuncture. Procedia Engineering, 2017, Vol. 172(1), pp. 1007–1014. ISSN 1877-7058. doi:10.1016/j.proeng.2017.02.151.

6. Skoruks, D., Nazarova, J., Šenfelde, M. Evaluating Monopolisation Tendencies through Quantitative Analysis of Market Power Distribution. No: MMK 2015: International Masaryk Conference for Ph.D. Students and Young Researchers, Czech Republic, Hradec Králové, December 14–18, 2015. Hradec Králové: Magnanimitas, 2015, pp. 614–623. ISBN 978-80-87952-12- 2. e-ISBN 042-15-75-12- 9.

7. Skoruks, D., Nazarova, J., Šenfelde, M. Detecting Monopolisation Tendencies in the Context of Modern Business Cycles: a Quantitative Perspective. No: Economic Science for Rural Development No. 43, Latvia, Jelgava, April 21–22, 2016. Jelgava: Latvian University of Agriculture, 2016, pp. 197–205. ISBN 978-9984-48-255-5. ISSN 1691-3078. [Indexed in ISI Web of Science]

8. Skoruks, D., Nazarova, J., Šenfelde, M. Detecting Monopolisation Tendencies in the Context of Modern Business Cycles: Elaboration via Implementation. No: Economic Science for Rural

Development No. 45, Latvia, Jelgava, April 27–28, 2017. Jelgava: Latvian University of Agriculture, 2017, pp. 367–374. ISBN 978-9984-48-261-3. ISSN 1691-3078. [Indexed in ISI Web of Science]

9. Skoruks, D., Nazarova, J., Šenfelde, M. Countervailing Market Power Analysis: an Assessment of Monopolisation Tendencies in Modern Business Environment. No: CER Comparative European Research 2015, UK, London, October 26–30, 2015. London: Science Publishing, 2015, pp. 67–71. ISBN 978-0-9928772-8-6.

10. Skoruks, D., Nazarova, J., Šenfelde, M. Countervailing Market Power Analysis: Assessing Monopolisation Tendencies in Business Environment of the Modern Financial Service Sector. CER: Comparative European Research 2016, UK, London, March 26–30, 2016. London: Science Publishing, 2016, pp. 89–93. ISBN 978-0- 9928772-9-3.

11. Skoruks, D. Complex Econometric Model of Monopolization Process Evaluation. Procedia – Social and Behavioral Sciences, 2014, Vol. 110, pp. 202–214. ISSN 1877-0428. doi:10.1016/j.sbspro.2013.12.863

12. Šenfelde, M., Skoruks, D., Nazarova, J. Multifactorial Assessment of Monopolisation Trends through the Analytical Prism of Price-Based Market Power and Business Cycle Fluctuation Quantitative Evaluation. Inzinerine Ekonomika-Engineering Economics. Inžinerinė ekonomika – Engineering Economics, 2016, Vol. 27, No. 5, pp. 538–545. ISSN 1392-2785. e-ISSN 2029-5839. doi:10.5755/j01.ee.27.5.14921. [Indexed in ISI Web of Science and SCOPUS]

Other publication:

13. Skoruks, D. Monopolizācijas process mūsdienu ekonomikā. No: Rīgas Stradiņa universitātes 2014. gada zinātniskā konference: tēzes, Latvija, Rīga, 10. –11. aprīlis, 2014. Rīga: Rīgas Stradiņa universitāte, 2014, 401. –401. lpp. ISBN 978-9984-793-52-8.

List of Conferences:

1. Riga Technical University, 54th International Scientific Conference "Scientific Conference on Economics and Entrepreneurship: SCEE'2013", 2013, October 11–16, Riga, Latvia, paper "*Monopolization Process Evaluation under the Modern Market Conditions*".

2. Riga Stradins University, 6th Interdisciplinary Scientific Conference "Eiropas Savienība un Latvija: uzņēmējdarbības sociāli ekonomiskie aspekti", 2013, May 9–10, Riga, Latvia, pape*r "Monopolizācijas process mūsdienu ekonomikā"*.

3. *Vilnius Gediminas Te*chnical University, International Scientific Conference "Contemporary issues in Business, Management and Education '2013", 2013, November 14–15, Vilnius, Lithuania, paper "*Complex Econometric Model of Monopolization Process Evaluation*".

4. *Riga* Stradins University, 13th Scientific Conference-2014, 2014, April 10–11, Riga, Latvia, paper "*Monopolizācijas process mūsdienu ekonomikā*".

5. Vilnius Gediminas Technical University, 8th International Scientific Conference "Business and Management' 2014", 2014, May 15–16, Vilnius, Lithuania, paper "*Econometric Methodology of Monopolization Process Evaluation*".

6. Riga Technical University, 55th International Scientific Conference "Scientific Conference on Economics and Entrepreneurship: SCEE'2014", 2014, October 14–17, Riga, Latvia, paper "*Globalization as a market failure remedy: the case of modern monopoly*".

7. Vilnius Gediminas Technical University, International Scientific Conference "Contemporary Issues in Business, Management and Education 2015", 2015, November 12–13, Vilnius, Lithuania, paper "*Monopolistic Trend Analysis in the Context of Efficient Entrepreneurial Decision Making*".

8. Latvia University of Agriculture, 16th International Scientific Conference "Economic Science for Rural Development-2015", 2015, April 23–24, Jelgava, Latvia, paper "*Quantitative Methodology of Modern Monopolization Process Assessment as a Sustainable Consumption Insurance Tool*".

9. Riga Technical University, 56th International Scientific Conference "Scientific Conference on Economics and Entrepreneurship: SCEE'2015", 2015, October 14–16, Riga, Latvia, paper „*Economic integration as a market failure remedy: the issue of monopolisation*".

10. SCIEMCEE, International Scientific Conference "Comparative European Research: CER-2015", 2015, October 14–16, London, UK, paper "*Countervailing Market Power Analysis: an Assessment of Monopolisation Tendencies in Modern Business Environment*".

11. International Masaryk Conference for Ph.D. Students and Young Researchers: MMK-2015, 2015, December 14–18, Hradec Králové, Czech Republic, paper "*Evaluating Monopolisation Tendencies through Quantitative Analysis of Market Power Distribution*".

12. Latvia University of Agriculture, 17th International Scientific Conference "Economic Science for Rural Development-2016", 2016, April 21–22, Jelgava, Latvia, paper "*Detecting Monopolisation Tendencies in the Context of Modern Business Cycles: a Quantitative Perspective*".

13. SCIEMCEE, International Scientific Conference "Comparative European Research: CER-2016", 2016, March 28–31, London, UK, paper "*Countervailing market power analysis: assessing monopolisation tendencies in business environment of the modern financial service sector*".

14. Latvia University of Agriculture, 18th International Scientific Conference "Economic Science for Rural Development-2017", 2017, April 27–28, Jelgava, Latvia, papers "*Detecting monopolisation tendencies in the context of modern business cycles: elaboration via implementation*" and "*Empirical Methodology of Modern Monopolisation Process Assessment: an Extended Commentary*";

15. Sapienza University of Rome, 22nd Eurasia Business and Economics Society Conference, 2017, May 24–26, Rome, Italy, papers "*Evaluation of Monopolisation Trends in Contemporary Markets: Employing Price-Based Market Power and Business Cycle Fluctuation Assessment Methods to Generate Analytical Synergy*" and "*Non-Parametric Techniques of Spectral Analysis as a Corrective Factor of Stock Price Forecasting Combined Stochastic Models*".

1. THEORETICAL CONTEXT AND BACKGROUND
OF THE MONOPOLISATION PHENOMENON

The word "monopoly" (formed from the Greek μονο (mono) – one and πωλέω (poleo) – to sell) in the broadest sense is used as a concept that describes a unique and in a sense peculiar situation in a country, sector or organization, which makes it possible to take advantage of the given state of affairs. It is widely believed that such situation is desirable for every entrepreneur because the mentioned position allows, firstly, to avoid the open market competition – related problems and risks, leverage the rising marginal costs of production and utilization of the limited available resources, and, secondly, through occurring benefits of imposing a certain, dominant position enhancing and, therefore, beneficial behaviour and decision making pattern on their potential and effective competitors, not rarely – public and governmental bodies, even, to a certain extent, to the consumers, who make up the seemingly dominant and by far the largest structural cluster of any liberal market community (Friedman, 1962, *119–137*).

Nevertheless, in the realm of the economic science the phenomenon of monopoly is treated ambiguously, with the empirical descriptive perceptions of the origin, nature, functioning causality, logical outputs and outcomes, caused by the relevant state of market composition vary considerably, depending on the basic postulates and preferred research paradigms of a given school of economic thought, scholar of competent individual. Simultaneously, the economic phenomenon of a full or complete monopoly is defined as a distinct market position, enabling the so called excessive gain generation and subsequent extraction, resulting in an almost guaranteed profit with the "excessive exploitation" of the "leading market position", frequently referred to as the monopoly advantage (Friedman, 1962, *112–114*).

The above given characteristics of the full monopoly, from the modern point of view, is not entirely correct, which inter alia had been verified by various national and international experts (see Annexes 57–59) during the rounds of consultations, conducted over the course of current research development. The monopolist remains dependant on the final consumer's total level of income, therefore, from a wider perspective, it is impossible to surpass the aggregated consumption amount above the cumulative level of goods, services and adjunct benefits that each individual consumer is able to afford, in other words, it is economically unjustified to claim the appearance of "endless" monopoly due to the generally present limits on availability of both financial and natural resources.

However, the stereotype of the monopoly – imposed "price dictation" as evidenced by all the recent years of social studies, has been deeply enriched into social subconscious, resulting in a trend of instant negative reaction to the very definition used without reference to scientifically justified and conceptually provided evidence of the absolute and unexceptional economic harm, imposed by the existence of the monopoly phenomenon in each and every market type, conjectural form and trading system.

The current doctoral thesis is devoted to consistent evaluation of the phenomenon of monopoly as a market occurrence, the case of full monopoly as a divisional type of the former and the process of monopolisation as a strictly economic and causally justified conduction of the liberal trading process. Furthermore, Chapter 1 of the doctoral thesis provides an in-depth insight of the above mentioned general problematic, taking a theoretically qualitative approach in order to determine, evaluate and consequentially systematise the currently dispersed and mutually irreconcilable perceptions of the empirical phenomenon of monopoly, developed by a number of schools of economic thought with the specific purpose of developing a commonly – objective analytical framework, which is deriving from the individually subjective scientifically philosophical research paradigm, thus establishing a single evaluation system, aimed at achieving a greater level of conceptual coherence between various scholarly approaches, simultaneously demonstrating the need to distinguish between the two closely related definitions of a complete monopoly and monopolised industries.

Considering the research topic – relevant information, provided in Section 1.1. of the current Doctoral Thesis, it may be concluded that the conducted analysis had enabled the possibility of coherent assessment of monopoly as an economic phenomenon, while providing scientific reasoning for distinguishing between full monopoly as a type market conjuncture structuring,

monopolisation as a consistent order of economic conduct and monopoly power as an objective rationale for the emergence, prevalence and development of the above mentioned process and its final form of elaborate economic expressionism.

Before a conclusive statement, regarding the separation of the analytical issues, mentioned in the previous paragraph of the current Section, contextualized on a wider scale of disputed methodological approaches to monopoly as an objectively realistic form of a market conjuncture composition may be made, an executive summary of persuasive evidence has been developed (see Table 1.1.).

Table 1.1.

The conclusive definitions of full monopoly and the process monopolisation, derived from the conceptual positions on the addressed issue by various schools of economic thought

School of Economic Thought	Definitions	
	full monopoly	**monopolisation**
Classical (Smithian) School of Economic Thought	A privileged single supplier trading position, similar to one of scares and indispensable production means possession, leading to a distortion in the state of perfect competition that results in artificial market understocking with the goal of raising the sales prices far above their natural and, therefore, economically justified rate levels, which culminates in both free trade system's configuration counterproductive disturbance and consumer disposable income level reduction.	The process of market competition level consequent diminution, rooting from artificial economic process distortion and governmental restriction imposture on self- organizing trading interaction system, resulting, in its final development stage, into the emergence of monopoly as a typological form of market conjuncture structuring, consequentially leading to even further marker inefficiencies due to the highest possible and utterly unnatural level of goods sales prices.
Neoclassical School of Economic Thought	A single supplier market conjuncture composition form, similar to the case of external economic process disruption, presenting a situation of imperfect competition extreme escalation, resulting in synthetic market understocking by the enterprise that, in fact, is the entire industry and consequent rise of sales process, which culminates in both counterproductive functioning of trading system's configuration and significant reduction of consumer net disposable income level.	The process of imperfect competition consequent diminution to an extreme and minimum, if not zero, level, based on either external economic process conduction distortion or internal failure of the market to overcome the short-term functioning inefficiencies, often stimulated by governmental restriction imposture on self-organizing trading systems, resulting, in its final development stage, into the emergence of full monopoly as a typological form of market conjuncture with all the outgoing negative consequences of such an extreme case of imperfect competition prevalence as the established typological economic process structuring.
French Liberal (Laissez – faire) School of Economic Thought	An empirical state of unnatural, often artificially imposed market conjuncture that constitutes of a supplier, providing a good or a service by the means of concentrated position of the relevant means of production and a group of consumers, whose natural freedom of economic interactions is being actively limited by the imposition of the monopoly structure, preventing the market from further shifting to a more efficient, competition-based functioning level, while, simultaneously neglecting the involved economic agents, both of supply and demand camp, to participate in its self-organization	The process of counterproductive economic development that may best be described as artificial of quasi-natural market conjuncture imposition, leading to the limitation of competition which, in the final stage of conduction, will result in the creation of a full monopoly, depriving the market of the necessary efficiency provision in the form of self – organization, which, as a natural economic mechanism, is possible only while the involved market agents and parties are fully free in their actions or inactions as well as economic engagement within the said market or industry.
Keynesian School of Economic Thought	A market of imperfect competition, consisting of a single supplier and various consumers, which, as a cluster unit, constitute the founding basis for the emergence of aggregate demand, often developed in case of a competition-undermining market failure or external under the influence of economic shocks, which leads to inefficiencies in wages and unemployment, having a grossly negative economic effect, unless it takes the form of a public monopoly, created by legislative means with the goal of redeeming existing market failure in a consumption-stimulation and economic activity promoting manner	The process of an individual private enterprise gaining excessive market power by exploiting influence, induced in its own provided products, cumulating in the acquisition of profit levels surpassing those rationalized by operational marginal costs and, therefore, regarded as a market failure or, in the alternative case, the process of public monopoly establishing with the use or regulatory and legislative power with the goal of ensuring critical industry supply output maximization in order to stimulate consumption in the wider context of precluding the market failure and/or economic recession-caused negative consequences.
Austrian School of Economic Thought	A state of underdeveloped or artificially imposed market conjuncture that constitutes of a supplier, providing a unique and indispensable good by the means of concentrated position of the relevant means of production and a group of consumers, limited by the imposition of fixed monopoly price vis-a-vis their purchasing financial abilities, while all the market participants unconsciously act as economized individuals.	A process of retrospective economic development that may best be described as regressive evolution of the market conjuncture, leading to the naturally or artificially imposed limitation of competition which, in the final stage of conduction, will result in emergence or creation of a full monopoly.

As it may be concluded from the previous analysis, conducted in Subsection 1.1 of the current Doctoral thesis, the results of which had been transparently summarised in Table 1.6., each of the established schools of economic thought has its own, to a certain extent, unique vision of the full monopoly, its sources of emergence, specifics of development and structural long-term economic effects, deriving from a fundamentally-methodological approach of market conjuncture, resource allocation and trading of goods analysis. To state the former differently, each school of economic thought had developed and established its own philosophy of economic process evaluation and those unique features that distinguish more or less related paradigms of fundamental Economics are the direct cause of presumption variations, which take place in terms of separately defined perception and, if it may be described in such a way, individual or subjective judgment of the

common or objective reality. However, what is especially important to note in the related context, is the quasi-common position, taken by all of the analysed schools of economic thought, regarding the matter of monopolisation, being a unified vision of its structural and functional characteristics.

None of the analysed schools of economic thought provide a clear and duly specific definitions of monopolisation process, monopoly power or full monopoly, sufficient in both empirical and applicable terms. They do, however, come to a common ground when evaluating the process of monopolisation, defining it, more or less consensually, as a market-wide full monopoly establishment process, rooting from the ability of distinct enterprises to influence market conjuncture composition and employ the major competition structure shaping factors to meet their respective goals and general benefit. What is especially important, is the fact that all of the researched paradigms of economic philosophy elaborately specified that the main rational and functional base of the above mentioned process conduction is the willing loyalty or imposed lack of alternative choice of the consumers that form the client cluster of a certain profit-orientated equity, consequentially suggesting that the power of engaging in the development of the process of monopolisation is directly correlated to the ability of a certain supplier to retain and preserve the share of the effective solvent demand, which he may then expand by elimination of the closest competitors and ceasing the now under-supplied market niches.

Therefore, it may be argued that the driving force of the process of monopolisation is the dynamics of market share shifting, which results in a zero-sum imbalances of market influence and economic power. For the purpose of the current research, the aforementioned type of economic process influence, combined with the power of market conjuncture reshaping, deriving from the willing or unwilling, but, in either case, consistent customer loyalty, resulting in the control over a solvent share of a certain market, shall be further referred to as the individual monopoly power.

The current stage of market monopolisation may be assessed as the sum of non-affiliated legal equities individual monopoly power concentration that significantly differs from the optimal state of equal or near equal individual monopoly power distribution between the suppliers in a certain industry, sector of a national economy, market, market segment or even a market niche. In this respect, a perception of competition intensity being reversely correlated to the level of net monopoly power concentration in a certain supplier or supplier groups' field of influence or, looking from a different perspective, its deviation from a state of leveraged and relatively equal distribution between the involved economic agents, acting on the behalf of personal or third party liability, presents a solid verifying argument. Thus, on the ground of analytical logic continuation, it may be ascertained that a cartel deal, being deemed as illegal in almost every modern-day country, is a competition undermining practice precisely due to the excessive concentration of individual monopoly power in a mutually-bidden group of enterprises. In the same manner, a conglomerate would present a situation of individual power delegation to a common overviewing body that, in line with the theory of neo-institutionalism (Rutherford, 2001, 185–190), for even the non-written contracts of the "shadow economy" are the founding ground for business relation institutionalising via interaction formalisation, however illegal in this particular case, will seek to establish a continuation of the authority delegation by merging the individual competency into a common and unified mechanism of power, which only it may and effectively can wield.

In other words, all of the analysed schools of economic thought indirectly, taking a "read-between-the-lines" approach (the consulted experts in the relevant field share a consensus that there is no direct correlation between the stances, taken by the analysed schools of economic thought, however found that finding a "common methodological ground" would greatly benefit both the existing theoretical framework and their respective practical work, for details see Annexes 57–59), emphasize the role of individual equity influence in the formation of a competitive market environment, based on the principles of free-willed interactions between the involved parties.

Thus, if individual market power is the fundamental cause of monopolisation process development and the phenomenon of full monopoly is an extreme case of imperfect, arguably, non-existent alternative choice scenario, the direct opposite of such order of conduct would be a high level of competition. Therefore, individual monopoly power and free competition are the "Yin" and "Yang" of economic theory's realm-direct opposites in terms of proceeding and caused effects, while being fundamentally and irreversibly interconnected justified market functioning- composing phenomena.

Consequentially, the author of the current research proposes the following unified definition of monopoly power, the process of monopolisation, full monopoly and the general level of market current monopolisation.

Monopoly power – the ability to influence the composition of market conjuncture and conduct of the competition-related processes with the goal of achieving certain individually required outputs and, if the above-mentioned degree of influence is sufficient, desired outcomes, rooting from the exercised supplier long-term control over income flows, deriving from a cluster of solvent demand amount, commonly referred to as the enterprise's individual market share.

The process of monopolisation – an industry-wide or sectorial economic process of supplier individual market share consolidation, caused by either internal (conjecture) or external (trend) influence factors, followed by directly proportionate growth in monopoly power of the process-involved individual suppliers.

Full monopoly – an extreme case of monopoly power concentration, achieved via fully conducted and effectively concluded process of monopolisation, enabling a certain enterprise to eliminate all efficient competition and deprive new potentially successful competitors from engagement in economic interaction within a certain industry or market, leading to a de facto rise in the level of prices through customer alternative consumption opportunity deprivation.

Total current (general) level of market monopolisation – the resulting (total) sum of individual monopoly power, measured as relative deviation from the state of its absolutely equal distribution between an industry/market supply amount forming equities within the framework of a certain reference time period in the broader context of a positive or negative industry/market consolidation trend.

The definition, provided above, shall be further used in the conduction of the current research both as unified economic process, factor and phenomenon describing terminology and the theoretical basis for the developed quantitative monopolisation level assessment model, while simultaneously being incorporated in the confound of the verifying experiment, aimed at confirming of refuting the main hypothesis of the current research, while directly addressing the fundamental aspects of the systematically analysed economic problem spectrum. Therefore, while taking into account the collected, analysed and consistently evaluated information as well as the acquired expert opinions (see Annexes 57–59), provided in Chapter 1 of the current Doctoral Thesis, it would be most beneficial to implement the established theoretical framework for further applicable research conduction, regarding monopolisation process conduction, output and outcome analysis with the empirical goal of developing and scientifically testing a quantitative model of market level of monopolisation evaluation. The relevant actions shall be comprehensively described in Chapter 2 of the current doctoral thesis.

2. ANALYSIS OF THE METHODS COMMONLY USED
TO ADRESS THE RELEVANT ISSUE

While analysing the ground-breaking significance of fundamental works by highly esteemed scholars such as Joan Robinson (Robinson, 1978, *3–271*) and Edward Chamberlin (Chamberlin 1947, *11–115*), a certain understanding of markets of imperfect competition emerges. It may be expressed in the following statement: each economic process is driven by more or less hidden logic even in those cases, when the market reactions seem full of irrationalism and contradiction.

Therefore, each truly market process is bound by influence factor of interactional interrelation, which are subject to certain patterns, shaped by both internal and external causality within a multilevel functional framework. In the case of monopolisation, two basic full economic monopoly establishing scenarios may be observed – positive and negative. As an important side note, it must be mentioned that public monopolies, integrated into a certain welfare system and monopolies, aimed at securing "national strategic interest" are administratively installed and therefore may have various degree of self-reliance and functional efficiency. Thus, Section 2 of the current doctoral thesis focuses on purely market reality-driven process of monopolisation and its economic order of conduct.

In the former case, a certain type of goods or services is deemed obsolete, its representation in the market begins to weaken and the amount of sales steadily decline. Regardless of subjective (preferential) or objective (functional obsolescence) reasons, stimulating the mentioned decline in demand amount, the only potent way of resolving such crisis with differentiation tactics failing is the introduction of a derivative product, significantly improving its additional functionality while essentially preserving the relevant core value or presenting a conceptually new way of the original need satisfaction, possible only through research and innovation. Thus, the first supplier to meet the transformed demand, effectively creates a new market or niche and becomes a de facto monopolist, regarding its innovative product.

In the latter case, the market is subjected to negative macroeconomic influences, it is unable to meet the needs of consumers, leading to supplier withdrawal from the market due to sharp reduction or absence of profit.

Consequentially, a gap emerges, which may only be filled by those companies that managed to remain in the market implementing cost-saving and productivity-rising preserving a relatively pre-crisis position. As the crisis passes and the drastic effect of the recession begins to vanish, the remaining suppliers, who had survived the shock, either consolidate their efforts to lock the market from new entrants and potential outside competition, or one of the still functional enterprises acquires or merges with its remaining competitors, in both cases creating a full economic monopoly, intended to compensate the previously sustained loses by exploiting its newly occupant dominant market position.

Therefore, in the case when at least one company with sufficient financial resources available for its further development had been able to remain in the market, it has a possibility to resume production or services provision, ensured by either taking over both the material and the financial resources of its weaker competitors or simply expand its operations over the unsatisfied portion of the growth-restoring demand, which in both of the former cases leads to a rapid growth in individual monopoly power and, consequentially, to monopolizing of the market, using mass production and extensive distribution techniques.

In the period of post-crisis expansion into the void of recovering unsatisfied demand, an excessively high premium on goods is rarely imposed as the risks of action in the context of triggering a competition revival are not met by a correspondingly adequate potential level of profit. The company may generate revenues from the rapid increase sales as it expands into the hollowness of the recovering market, consistently concentrating on establishing a dominant position and closing the market from external infiltration, followed by reinventing itself as a full economic monopoly and beginning the exploitation of such lucrative position only after sustainable stability had been achieved.

Following the empirical economic logic of the period, when a potential monopolist is trying to take over a possibly largest market share, while simultaneously establishing a system of product

distribution, which excludes external competitors from entering the market, the public interest is being used for the purpose of strengthening the mentioned emerging system, namely production quantities are being sold at "friendly prices" or products are supplied that formerly could have been less available, thus satisfying consumer needs at higher-than-pre-crisis level. Therefore, the "middle" stage of the process of monopolisation, which is notably characterised by sharp and extensive competition, may be described as more favourable to the consumers as their needs are, paradoxically due to the strength of the commencing monopolisation process, satisfy at a lower cost, which from the political and public point of view may be defined as undoubtedly socially beneficial. Thus, the negative scenario of the monopolisation process conduction implies a significant economic shock as the cause and the starting point, followed by deep recession and individual enterprise wide-scale market expansion on behalf of the recovering demand, which starts with low, sometimes dumping pricing policies and ends with establishing of a full economic monopoly with general economic justification for such state of affairs embedded in favourable short-term prices as part of a deliberant monopolisation strategy.

On the contrary, in the case of positive scenario of monopolisation process conduction, in times of consistent and more of less rapid growth, large companies that are efficiently managed allocate part of the profits to research and innovation activities, creating attractive conditions for the development of new technological and operational solutions. Such actions are dictated by the need to prepare the economising entity for the inevitable decline phase of the market development cycle, ensuring that alternative products are available at affordable prices in times of solvency crisis.

Product differentiation, according to J. Robinson, is one of the most efficient and from business conduction point of view low-risk way to attract additional clientele in markets of monopolistic competition and to avoid the so-called price war in an oligopoly market (Robinson, 1934, *671–674*) However, the market commercialization of a fundamentally new product for which no complementary replacements are available, takes the relevant supplier to a higher-level activity in competitive security until the other supply-side market participants will be able to offer a similar product, that is, to reach the same level or, to be more precise, enter the same niche, thus eliminating its effective monopoly, backed by the outcomes of the scientific research investments. In order to maintain its leading position and uphold the state of "unchallenged monopoly" position, profits are directed to the improvement of the innovations created, thus enhancing the conditions for further applicable research conduction and successful development of more efficient need satisfaction techniques.

Thus, it can be seen that the process of monopolisation may stimulate the creation of fundamentally new products by creating new types of businesses, innovation-related services and the implementation of reality, as well as create the innovations that will guide the consumer satisfaction to new, higher level. Whether this option will be executed, or the company will resolve to standard price-based competition practices depends solely on a given enterprise's corporate policies, budget limitations and strategic vision of operational functioning.

The author argues that the modern process of monopolisation is subjected to a certain dualism, due to the complex economic nature of the studied market phenomenon. Each type of economic activities has a distinguishing specificity that, while creating a unique competitive environment, is closely related to the general macroeconomic background, which shapes the context of business conduction trends.

Competitive microeconomic environment requires each individual company to implement management styles, operation planning schemes, a settlement remuneration of inventory and development are coherently integrated into a unified framework of an efficient organization structure that sooner or later creates a fundamental variation pattern of economic dynamics. Simultaneously, the impact of the constantly changing external business environment is forcing companies to prepare for the inevitable advent of the crisis stage of the macroeconomic cycle, which has a tremendous significance in terms of competition strategy choice. With the goal of a fully scientifically and analytically transparent reflection of the monopolisation process' conduction, stages, positive and negative scenario progression causes and the relevant influence factors significance, a causal algorithm introduced in Fig. 2.2. was developed by the author of the current doctoral thesis.

```
┌──────────────────────┐      ┌──────────────────────────┐      ┌──────────────────────┐
│ Internal environment │      │ Monopolistic competition │      │ External environment │
└──────────────────────┘      └──────────────────────────┘      └──────────────────────┘
```

Figure with boxes and ovals:

- **Internal environment**
- **Monopolistic competition**
- **External environment**
- *Fierce differentiation-based competition* (oval)
- *Severe economic crisis, resulting in gradual series of negative shocks* (oval)
- **Oligopoly**
- *Development of innovation* (oval)
- **Market consolidation** (green oval)
- **Implementation of innovations** (green box)
- **Market share acquisition and customer attraction** (box)
- **Full monopoly**
- *Market recognition* (oval)
- *Development of a closed market* (oval)
- *Profit generation by increasing sales prices, cost optimization, reduction in production and sales volumes, operating diversification, promotion of research for diversification purposes* (red box)
- *Rising prices, lower sales volumes, the neglection of potential competitors from joining the market, social deadweight loss* (red box)
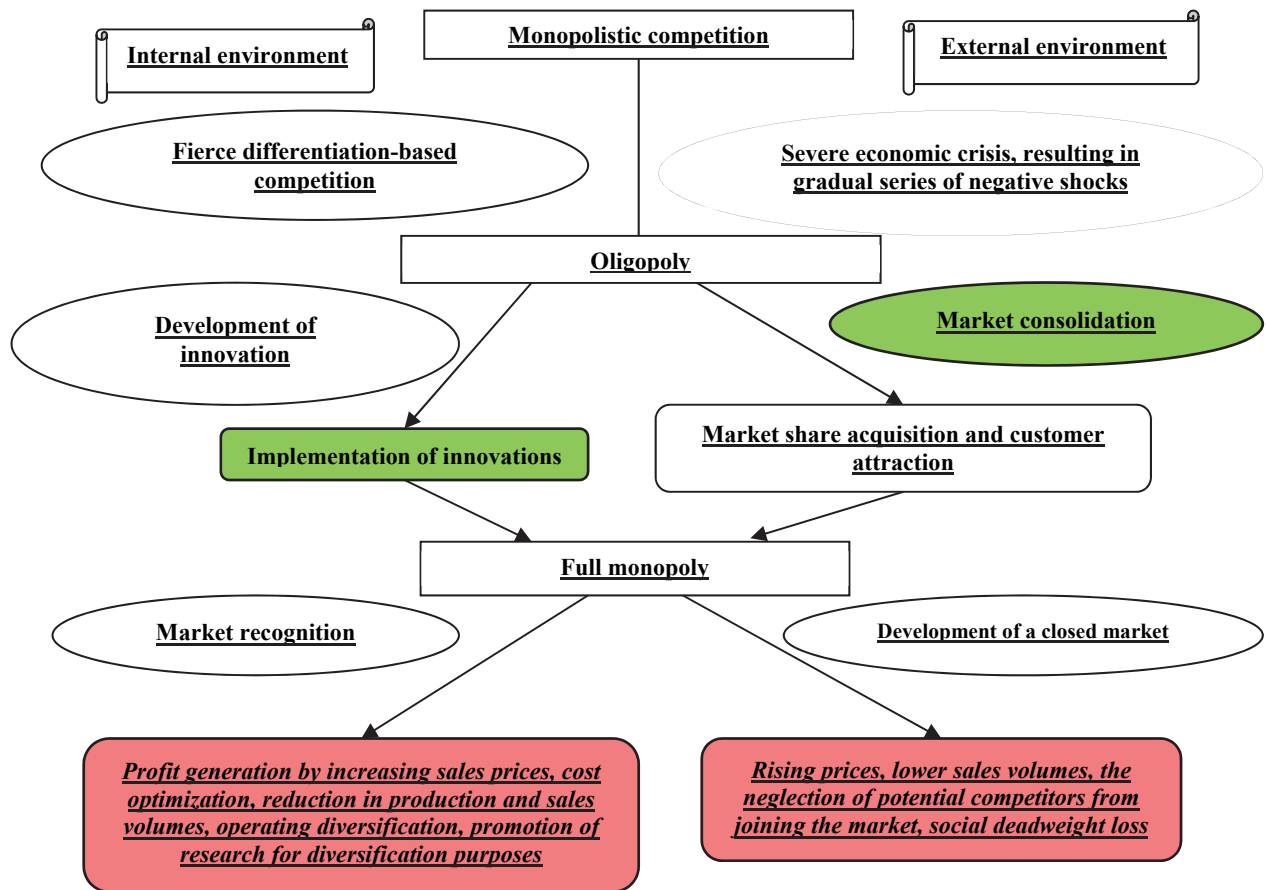
Fig. 2.1. Order of conduct and effects of the process of monopolisation

(Source: developed by the author)

The stages of the processes of monopolisation, reflected in the analytical algorithm, available in Fig. 2.1, that deliver positive socioeconomic effects are coloured green, while the respective negative effects such as social deadweight loss, rising prices and artificially created deficits, are coloured red.

The algorithm may serve as a generalized model, reflecting the consequential stages of the monopolisation process conduction, while emphasising not only the gradual nature of the studied phenomenon, but highlighting monopolisation as changes in a company's market position in direct correlation with its individual market share and an incremental increase in the corresponding concentration of individual monopoly power until the critical level, required to alter the structure of the industry in order to fundamentally reformat the conjuncture of the business environment to an extent of creating a functionally new type of market with a lower level of internal competition.

The algorithm reflected in Fig. 2.1. provides the necessary scientifically-empirical justification to perceive the process of monopolisation as economically rational, natural market process which, in several phases of its development brings certain social benefits, based on the proceeding of the addressed phenomena, while simultaneously, under specific external and/or internal market conditions may become the only sustainable option of crisis overcoming, providing no administrative, thus artificial in its essence, public intervention into the natural conduct of liberal market processes is favourable, affordable and available. In other words, if a market, being a truly free trade and liberal economic interaction system, becomes monopolized, the process of monopolisation may not be scientifically defined as "illogical" or "irrational" as objective economic reasons had driven the development of the relevant process, despite it being socially unfavourable and required non-economic administrative intervention in order to change the undesirable natural outcomes to predictable welcomed outputs, for, as stated by P. Samuleson: "Every good cause is worth some inefficiency" (The Independent, 2009).

It would be analytically beneficial to examine the inverse process of de-monopolisation, namely the loss of the monopolistic position in the context of the developed algorithm, reflected in Fig. 2.1.

and the respectively stated hypothesis validation. In terms of graphical interpretation, the previously described stages of regressive monopolisation process may be reflected in a manner similar to the author's developed Fig. 2.2.
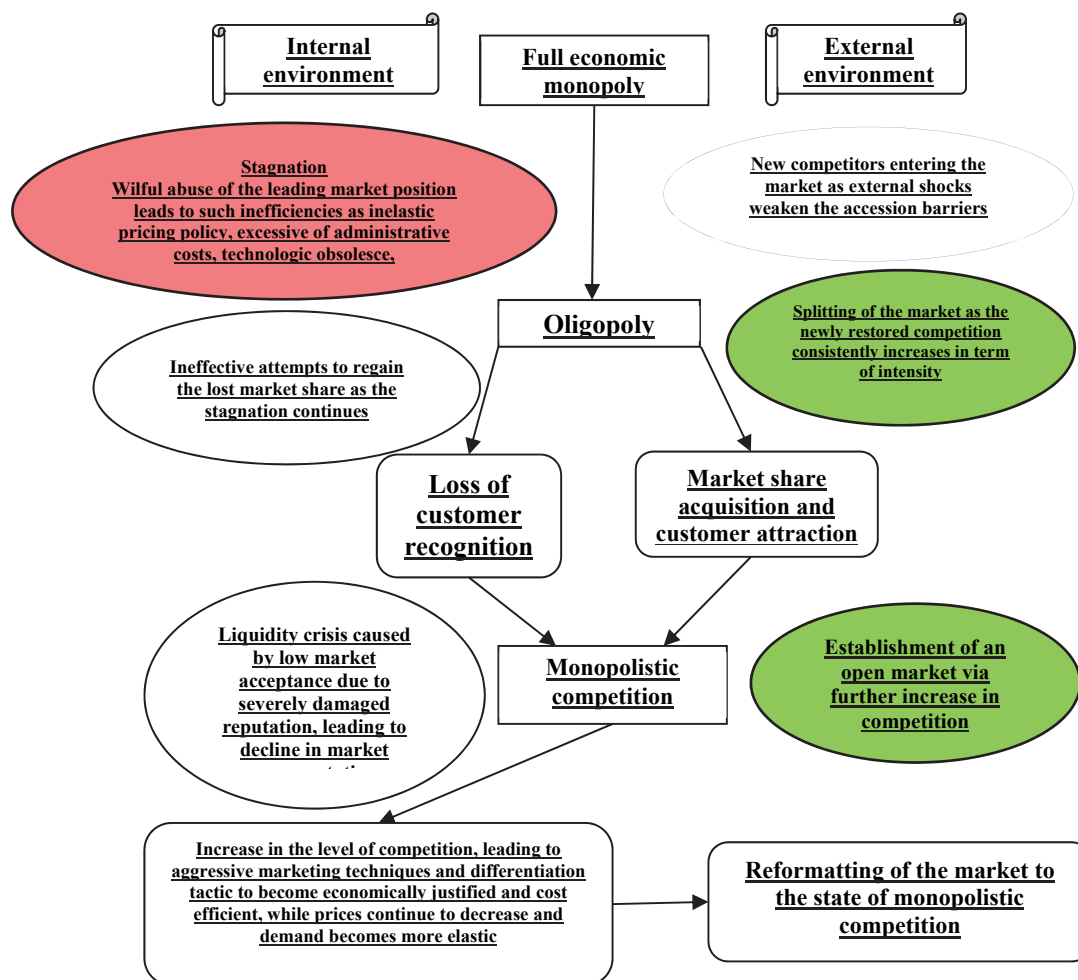

Fig. 2.2. Order of conduct and effects of the process of regressive monopolisation

(Source: developed by the author)

As seen from Fig. 2.2. the internal environment of "Stagnation" stage is reversibly proportional to the "Closed market development" stage, representing the final resultant phases of the process of monopolisation and justifying current events caused by social negations, while the "Splitting of the market" and "Establishing of an open market" phases reflect the loss of the individual monopoly power, consequentially proving that even a full economic monopoly is subject to managerial flaws and does not poses an immunity from objective market environment changes as well as repercussions for its actions.

Considering the analysis, conducted in Section 2 of the current doctoral thesis, the following notion had been proven as valid and economically justified: the process of monopolisation under modern market conditions may be defined as an economic phenomenon that can be triggered both by innovations via the creation of a fundamentally new market or the turmoil of a corporate governance crisis era, based on specific market events, justified by delivering notable benefits to the society at certain stages of its development, while, regardless of the causes and development scenarios, inflicting severe social loses and costs at the final stage of its conduct, a full economic monopoly, due to entrepreneurial profit seeking logic with full correspondence to the rational market actor principle.

Due to the volume limitation of publishable space, the elaboration on the defined analytical framework as well as its conduct had been made available in Annexes 54–56, while the current section provides the findings and results of the corresponding assessment.

19

From the previously conducted analysis of the commonly used methods of market monopolisation level assessment, the following conclusions may be made. Both elasticity of demand concept and the Lerner index are not suited for an industry-level evaluation of the current monopolisation process development magnitude as the mentioned methods are rooted in difficultly acquired input data due to its confidentiality and lack of objective historical retrospective, while providing biased and fragmented outcomes, which may simultaneously fall out of the analytical scope of the expected outputs. The mentioned methods, however, have a reasonably high potential of desecrate application for individual enterprise needs, most efficiently – in the fields of strategic planning and current market strength determination. It may be argued that due to the mentioned method's concentration mainly of a microeconomic level of analysis, their performance of the macroeconomic level is insufficient at best.

On the other hand, the Herfindahl-Hirschman Index was designed specifically for a more general evaluation, making it more than suitable for industry-level monopolisation process development analysis, however, it has proven to be an *ex post* analysis tool that reflects the current or past situation without future insight or any sort of prognosis made available, while addressing the issue of possible hidden monopolisation trends. The mentioned indicator had provided quantitative evaluation of the Latvian mobile telecommunication industry with a corresponding qualitative interpretation of a „high concentration" market, which is the obvious case for an oligopoly situation, yet it failed to deliver a more conclusive result on whether there might be a trend of further oligopoly structure strengthening with possible duopoly formation or weakening and potential opening of the market. Simultaneously, the Herfindahl-Hirschman Index does not enable the assessment of possible cartel agreement of hidden monopoly, not elaborating on the possible effects of one of the oligopoly conjunctures' participants is in fact being an undisputed leader with a dominant market share. While such data may partly, though no fully, be acquired otherwise, the Herfindahl-Hirschman Index itself reflects the general state of competition within a certain period in the context of nominal monopoly power concentration and nothing more.

All of the three previously analysed methods have a low level of complementarity and mutual integrity potential, while their implementation is time consuming and the delivered results are incoherent and inconclusive with no prognosis capabilities with exceptionally low combination possibilities in context of multi-factor quantitative modelling and quantitatively-analytical tool application, therefore, it may be consequentially concluded that modern theoretical literature and common market monitoring practices lack both analytical cohesion and a unified quantitative approach, thus creating a need for an easy-to-use yet sophisticated in its internal structure assessment tool that delivers transparent, unbiased and quantifiable results, while providing the opportunity to be used for the need of both *ex post* and *ex ante* market monopolisation level analysis.

It must be noted that the consulted experts in the relevant field had unanimously agreed that unilateral application of the previously analysed indices brings no added values in the analysis of monopolistic trend, while more than seventy percent (72.73 %) of the mentioned specialists had stated that the assessed indices have a low level of mutual compatibility, while 9.09 % had referred to their synergetic capacities as very low, which in the context of the discovered consensus in the expert community, regarding the benefits of developing a unified methodological approach of monopolisation process evaluation (all of the consulted experts had expressed positive opinion about such research conduction) enables an understanding that the existing methods, while being individually robust and trustworthy, lack the necessary level of mutual compatibility, required by the need to address the existing modern analytical challenges (for details, see Annexes 57–59).

The development, layout, composition, quantitative functioning principles and experimental implementations results of the developed methodology, shall be described in Chapter 3.

3. THE PROPOSED METHODOLOGICAL SOLUTIONS AND THEIR EXPERIMENTAL JUSTIFICATION

The singularised methods of monopolisation level assessment described in the previous section are arguably mutually incoherent and therefore do not enable a prevalence of fully consistent combination of simultaneously applicable evaluation tools. Therefore, it would be rational and most beneficial for both private market actors and public supervisory bodies to have access to a quickly disposable, scientifically justified and easily applicable quantitative model, allowing the conduction of an industry or market level analysis of monopolisation tendencies, providing both numerical benchmarks and their qualitative interpretations within a defined annual framework.

The developed methodology will combine existing methods of both specialized monopoly and quantitative data assessment with author's proposed innovation, consequentially designing a combined quantitatively-qualitative tool with cheap installation, easy implementation and demonstrative result outputs, suitable for use in both state sector for regulatory reasons and private equities with the goal to improve business planning or managerial task performance.

The use of already existing methods will allow to benefit from previously gained international experience, while implementation of newly developed correlations and additional influence factors shall provide a topical transformation of the necessary nature, inflicted by globalized merging market clustered composition units, thus, creating a synergetic effect, consequentially improving the existing approaches while preventing innovative tool of assessment from untested and questionable fluctuation, reasoning scientific heritage with rational updates on a scalar scale, reaching far more flexible, transparent and coherent methodological composition.

The main foundation of the developed complex model of monopolisation process evaluation is the step-by-step assessment of available data from a quantitative perspective with the perspective acquired scalar result qualitative evaluation, allowing the conduction of a complex, multi-scale analysis, suitable for all economic field of activity, meaning that the current model shall be suitable for evaluations of any national economy industry.

The composition of the developed model is further described in the following sections in order to provide a complete insight and sufficient understanding of the internal quantitative correlations between the model's composing structural elements, as well as working out a steady implementation algorithm, while creating a qualitative interpretation methodology for assessing the quantitative scalar outputs of the conducted multi-factor analysis.

In order to verify the research hypothesis of the current Doctoral Thesis, consequentially approving or declining its conceptual formulation, the developed model will be implemented, tested and statistically leveraged in order to prevent any minor calculation imprecision on the bases of market data, reflecting the economic situation in the five following industries of the Latvian national economy.

1. Industries unaffected by import flows:

    1.1. mobile telecommunication market;

    1.2. banking sector;

    1.3. multi-purpose retail trade market.

2. Industries affected by import flows:

    2.1. brewing industry (excluding microbreweries);

    2.2. pharmaceuticals production market.

The reason for selecting the above-mentioned industries is the need for situational environment testing of the developed model, which can be reached only by implementation testing within the framework of different and partially unrelated sectors of the economy, while defining the effect of

import on market consolidation processes and, consequentially, more rapid monopolisation trend strengthening.

Additionally, in order to objectively verify the universality of the developed model, while conducting a test of its international and anti-situational applicability, the banking sectors of Estonia and Lithuania will be used in a supplementing experiment that either confirms or denounces the versatility of the mentioned quantitative monopolisation process evaluation tool.

The reason for the previously stated industry choice as the market data source is based on close convergence of the mentioned countries' national economies, which share a common political past and are closely interconnected in the context of regional historic retrospective, while simultaneously taking a quite different approach to ensuring consistent economic development and placing emphasis of severely distinct branches of their national economies. The three banking sectors of the mentioned Baltic states have a crucial role in ensuring business stimulus and economic growth as the accumulators and providers of the necessary financial flows, thus serving as the most transparent indicators of monopolisation tendencies, (possibly) present in the chosen economic systems, while proving to be a reliable source of objective information in terms of access due to strict auditing regulations regarding the financial statements of commercial banks, operating within the currently analysed European region.

The mentioned approach to analytical system creation and development has a number of advantages most important of which is the singularised operation required to obtain the results provided by the unified monopolisation process evaluation model. In other words, the input data cluster is the only information, necessary for entering into the previously described quantitative calculation structure harmonised within a single electronic file, which automatically and instantly delivers the acquired outputs and reflects both quantitative calculation results and their corresponding qualitative interpretation in the form of textual description of the analysed situation previously encrypted in numerical values.

Taking into account the multi-scale research conducted within the framework of the analytical methodology assessment section of the current Doctoral Thesis, it would be scientifically beneficial to update each of the studied methodologies by creating a more transparent quantitative basis for the relevant influence factor groups and integrating them into a single confound of a unified multi-functional analytical model.

The cumulative outcomes obtained from the qualitative interpretation of the automatically conducted quantitative analysis are obtained by using correlatively-weighted data evaluation scale that enables to determine both current degree of market monopolisation and the most possible further development of the discovered situation, based on objective consolidation potential of a given market, consequentially resulting in a multi-scale summary of the analysed sectors' general degree of monopolisation viewed as a constantly developing trend, which may be progressive, regressive of inconsistent.

The indexes are additionally integrated into the structure of the current model using statistical weights system, which adheres to the current practice employed by the European Commission when addressing the issue of effective and potential competitive pressure consideration in handled cases and conducted market inquiries, as well as taking into account the opinion of the consulted experts regarding the significance of each monopolisation process comprising and facilitating influence factor, consequentially enabling the synergetic effect of indices' coherence to take place.

The developed methodology inflicts a dually complex method of data analysis, quantitatively assessing both current monopolisation status and future monopolisation process development potential in a coherent way within the framework of integrated index system.

As an elaboration on the provided description of the currently developed model, aimed on further reflection of the employed quantitative logic behind the involved components and their mutual functional complementarity, it would be useful to create a single implementation algorithm, which served as methodological guidelines for practical utilization of the developed methodological tool application.

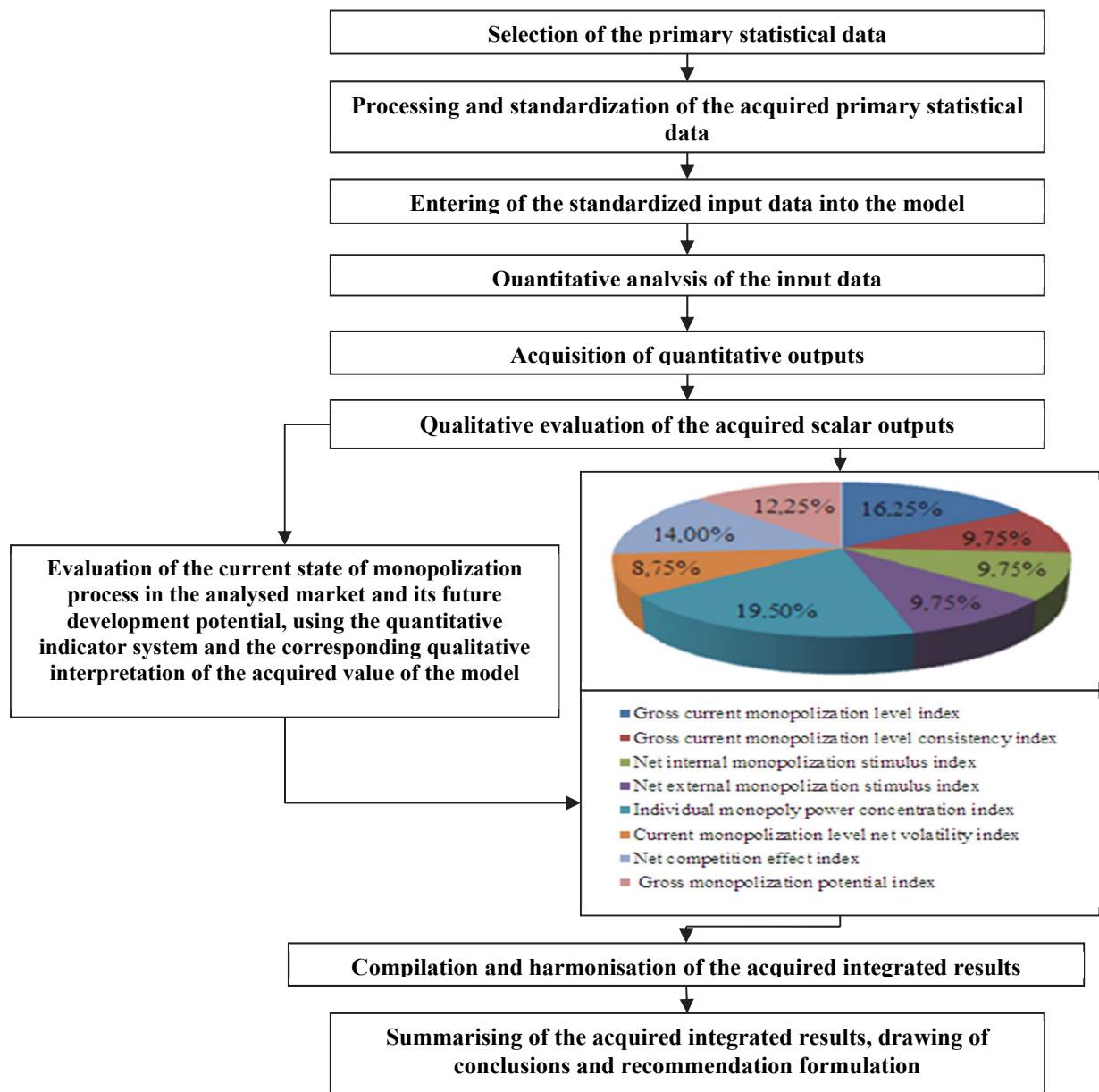The mentioned methodological scheme is provided in Fig. 3.1.

Fig. 3.1. Implementation algorithm of the unified methodology
of monopolisation process evaluation

(Source: developed by the author)

As it can be seen in Fig. 3.1., the relevant analysis is being carried out in the consequence of several methodological stages, while the entered input data is being consistently processed, reformatted, harmonised, evaluated and reissued in the form of cumulative (quantitative and qualitative) results, thus ensuring a rapid and objective interpretation of the acquired outputs.

The developed model enables a two-dimensional analysis of the monopolisation progress, conducted in the form of qualitative interpretation of quantitative data processing of the obtained results, followed by a singularised evaluation of the analysed development, consequentially providing scientifically objective perspective of a given market's degree of monopolisation, rooting from an interaction between internal and external influence factors.

The developed model foresees an additional option of separate analysis of defining indicator of range of individual value and determines the development of the process of monopolisation on a maturity phase level through the direct interpretation of the input data without using the result stratification of weighted qualitative analysis, thus providing the opportunity to address district areas of interest within or outside the general context of dominant market tendencies.

While addressing the issue of monopolisation process evaluation, especially of the level of markets or industries, a certain dominant pattern becomes visible: a trend of considering multiple

23

influence factors adhering to a single cluster of involved economic elements that exclude alternative analytical approaches due to either substantially low mutual complementarity, or objective and trustworthy data unavailability consequentially limiting the research perspective to a one-dimensional perspective in each of the mentioned cases.

However, for an objective and scientifically verified analysis of monopolisation process development, at least two main influence factor clusters need to be taken into account: the current stage of monopolisation process maturity and its future development prospects. The mentioned approach enables a multi-pillar analytical perspective on the addressed complex problematic, thus greatly contributing to the improvement of the entire evaluation process and the relevant topical issue management, consequentially creating fertile ground for quantitative tool implementation. It would be discreetly beneficial for the further conduction of the current research to provide a more detailed overview of the previously mentioned influence factor clusters.

The maturity of current stage monopolisation process is most adequately and fully described by the following characteristics.
- ✓ The distribution of market share between the suppliers involved in the relevant industry, regardless of individual choice of competition strategy and origin.
- ✓ The prevailing differences between the current distribution of individual market shares and the situation of absolutely even dispensation of monopoly power among the suppliers.
- ✓ The level of market maturity and demand sophistication in the context of industry's total consumption capacity.
- ✓ Market share redistribution opportunities based on individual competition strategies most suitable for the current situation in the industry;
- ✓ Natural changes of individual market shares directly proportionate to the dynamics of the market total consumption capacity.

The future prospects and development potential of monopolisation process is most accurately described by the following characteristics.
- ✓ Dynamics of individual market shares in the context of competition intensity.
- ✓ Dynamics of individual sale amounts caused by predictable and actual changes in the total market consumption capacity.
- ✓ Frequency of changes in the number of suppliers involved in the market;
- ✓ Prospective changes in the level of economic freedom regarding entry or exit from the market.

The mentioned market characteristics are common to all segments of any modern industry, regardless of the relevant analysed object's operational or regional specificities. The current state of affairs ensures the objectivity of the conducted analysis, consistently reflecting the current distribution of monopoly power within a market and the potential for change of the situation in the near future.

Given the need to include both the current market situation and the corresponding potential for future change into the structure of an objectively conducted research, interdisciplinary combined data performance groups were incorporated into composition of the developed unified monopolisation process evaluation model, reflecting the concentration of monopoly power in all of its dialectical essence within the wider context of economic environmental dynamism.

In order to transparently clarify the individual functionality of the indicators, coherently integrated wit in the framework of the developed methodology, while simultaneously elaborating on their mutual complementarity enabled analytical opportunities, it would be beneficial to focus on each of the mentioned indexes and provide in-depth description of their structure, functioning principles and affiliation in order to clearly define the quantitative methodological basis, the output scalar value range and the qualitative evaluation of the obtained results that form the empirical operational basis and the data processing possibilities of the developed quantitative model.

The calculation methodology regarding individual market share quantification remains analogical to the paradigm established in Formulas (3.1) – (3.8) of the current Doctoral Thesis, while the total number of enterprises involved in the analysed market is taken at the numerical face value based on the official statistics available for the relevant industry and only includes the legitimately operating and legally registered companies. The value range of the current indicator lies between zero and infinity per cent.

An analytical summary of the provided information is available in Table 3.1.

Table 3.1.

The Harmonized Indicator System Used in the Developed Methodology

Indicator title	Calculation methodology of the indicator	Indicator value range, %
Gross current monopolisation level index (GCMI)	$GCMI = \sqrt{\sum_{i=1}^{n}\left(MSH_{r_i} - MSH_{e_i}\right)^2}$	[0;100]
Gross current monopolisation level consistency index (GCMCI))	$GCMCI = \sum_{i=1}^{n}\left(\frac{MSH_{r_i} - MSH_{e_i}}{MSH_{e_i}}\right)^2 \Big/ n$	[0; ∞)
Net internal monopolisation stimulus index (NIMSI)	$NIMSI = \sqrt{\sum_{i=1}^{n}\left(MSH_{t_{ri}} - MSH_{(t-1)_{ei}}\right)^2}$	[0; 100]
Net external monopolisation stimulus index (NEMSI)	$NEMSI = \sqrt{\sum_{i=1}^{n}\left(MSH_{(t-1)_{ri}} - MSH_{t_{ei}}\right)^2}$	[0; 100]
Individual monopoly power concentration index (IMPCI)	$IMPCI = \sqrt{\sum_{i=1}^{n}\left(MSH_{t_{ri}}\right)^2}$	[0; 100]
Current monopolisation level net volatility index (CMLNVI)	$CMLNVI = \frac{\sum_{i=1}^{n}(1-(1+\Delta MSH_{ri_{(t;t-1)}})^{-\theta}}{n}$	(-∞; ∞)
Net competition effect index (NCEI)	$NCEI = \sqrt{\sum_{i=1}^{n}\left(\Delta MSH_{r_{i(t;t-1)}} - \Delta TMC_{(t;t-1)}\right)^{2\theta}}$	[0; ∞)
Gross monopolisation potential index (GMPI)	$GMPI = \left(\frac{\left(\sum_{i=1}^{n} MSH_{r_{ti}}\right)(n+1)}{MSH_{e_{ti}}*n^2}\right) - 1$	[0; 100]

As it may be concluded from the information, available in Table 3.1., the system of quantitative indicators used in the unified monopolisation process evaluation model is strongly linked to monopoly power concentration point detection as well as the internal structure of the industry, while the total impact of the relevant influence factors is being measured in the context of defining the prevailing competition conduction specifics and dominant market influence utilization trends. The eight quantitative indicators address the issue of monopolisation development stage stratification, their potential and characterizing *de facto*, thus coherently supporting the numerical calculations with empirical qualitative acknowledgements, which are strictly individual for each indicator even within a single functional cluster group, successively creating an integrated multi-dimensional quantitative output and qualitative result displaying operationally autonomous input data processing system.

The main goal of the developed unified model of monopolisation process evaluation was to achieve coherent analytical functionality, which had been consistently incorporated into the structure of the created automatized calculation system consequentially leading to embedment of the following features into the composition of the employed electronic tool: (1) cost-efficiency; (2) functional reliability; (3) operational universality; (4) quantitative autonomy; (5) qualitative interpretation of the acquired results; (6) mutual complementarity of all structural elements; (7) high level of flexibility; (8) high level of reparability; (9) transparency of delivered results; (10) user-friendly interface.

The previously mentioned system has been incorporated into an electronic file, thus enabling the used autonomous implementation of statistically-technical base and analytical operation facilitation, while the obtained resulting data is being displayed transparently and unbiased, leading to the development of a cost-efficient and fully functional quantitative model on the basis of MS Excel software (see examples in Annexes 3–53).

The developed methodology is conceptually designed to analyse one market situation at a time, not to find correlation between monopoly power of firms, operating in different or various industries. It has a strong affiliation with a heterogeneous yet originally singularized input data approach and had not been calibrated to assess the individual monopoly power of various enterprises, operating in completely unrelated fields of economic interest. It is a cost-efficient and convenient analytical tool, fully suited for mutually complementary quantitative and qualitative evaluation of the current stage of market monopolisation and the potential further development of the relevant process. However, the interpretation of the acquired results is not possible without a structured system of indicators composition enabling the establishment of a transparent conclusion

making framework with a standardized and non-prejudiced set of references. The mentioned analytical framework had been developed over the course of experimentation with the set of quantitative indicators and real (simultaneously, sensitive) market data, used in the relevant model, thus ensuring that the executed calculations are rational and quantitatively accurate, while the corresponding qualitative scales enable an objective interpretation of the obtained scalar outputs.

In order to fully systematize the previously provided information while putting it in the context of stratifying the mentioned indicators into functional groups with the goal of achieving a greater level of analytical transparency, the relevant information had been additionally summarized in Table 3.2.

Table 3.2.

Quantitative Value Ranges and the Corresponding Qualitative Interpretational Scales of the Indicators Employed in the Developed Methodology of Monopolisation Process Evaluation

Indicator	Functional group	Weight, %	Value range, %	Level of monopolisation
Gross current monopolisation level index	Evaluation of the current stage of monopolisation process development	*16.25 %*	(73;100]	High
			[50;73]	Medium
			[0;50)	Low
Gross current monopolisation level consistency index		*9.75 %*	(69;∞]	High
			[39;69]	Medium
			[0;39)	Low
Net internal monopolisation stimulus index		*9.75 %*	[73;100]	High
			[31;73]	Medium
			[0;31)	Low
Net external monopolisation stimulus index		*9.75 %*	[71;100]	High
			[23;71)	Medium
			[0;23)	Low
Individual monopoly power concentration index		*19.50 %*	[61;100]	High
			[37;61)	Medium
			[0;37)	Low
Current monopolisation level net volatility index	Evaluation of the prospects and potential of monopolisation process further development	*8.75 %*	(-∞;-33.33)∪(20;∞)	High
			[-33.33;20]	Low
Net competition effect index		*12.25 %*	(47;∞)	High
			[0;47]	Low
Gross monopolisation potential index		*14.00 %*	[61;100]	High
			[23;61)	Medium
			[0;23)	Low

As it may be concluded from the information in Table 3.5., all of the market current level of monopolisation determining indicators are assigned three possible qualitative interpretation scenarios directly correlated to their quantitative values: low, medium or high, thus reflecting the present state of affairs in the analysed industry in the context of monopolisation process development assessment. Two out of three indicators defining the future potential of the relevant situation escalation are qualitatively interpreted as either low of high, consequentially acknowledging the possibility of further market monopolisation level to grow, viewing the mentioned development as an increasing or declining opportunity curve. The mentioned occurrence is directly correlated with the operational goals of functional group of each indicator set, enabling a higher data processing efficiency level and excluding the potential irregularities, which, unless the currently described system in implemented, may lead to operation overlap and the consequential risks of functional calculation gaps and time lags when processing a particularly large set of input data.

In order to clearly outline the implemented solution to possible indicator functional overlap made possible by employing the mentioned functional group stratification approach, the relevant concept is fully described in Figure 3.3.
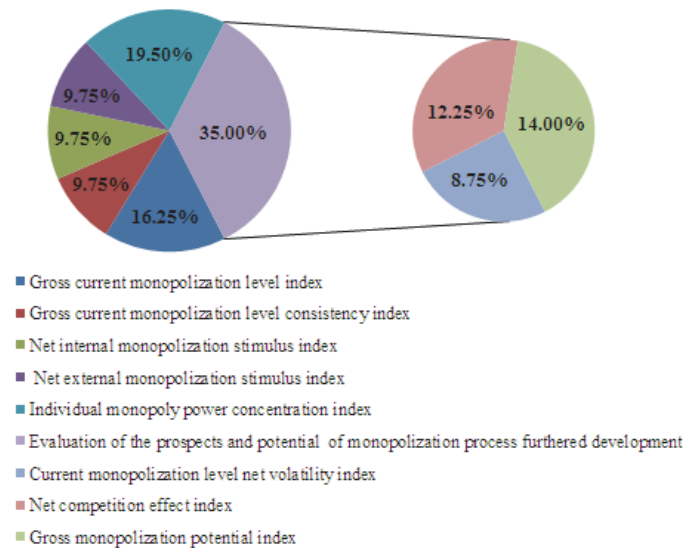
Fig. 3.3. Indicator functional groups and operational affiliation of individual indexes

(Source: developed by the author)

As it may be seen from the information in Fig. 3.3., each indicator functional group is aimed at achieving a specific strategic goal, while the individual indicators perform singular tasks within their respective operational cluster, thus contributing to the achievement of the general goal to an extent defined by the statistical weights assigned to each index in order to leverage their performance and harmonize their cooperation with separate functional groups, which, at their own level, are quantitatively integrated into a single analytical framework, thus enabling collaboration between the assessment tools of various influence factors at strategic, tactical and operational level, creating a highly favourable condition for an assessment of multi-scale monopolisation process development conducted from the perspective of both quantitative and qualitative economic evaluation paradigm.

Acknowledging the need to further enhance the possibilities already provided by the developed model, the author proposes a new market typological classification to be introduced and coherently incorporated into the structure of the created monopolisation process assessment tool, enabling the automated determination of the relevant market type according to the level of individual monopoly power concentration among individual economic actors or groups of actors. The proposed market typology will be founded on direct correlation between possibilities of individual influencing of economic process by the current market actors and the existing market structural conjuncture. In order to enhance the transparency of the empirical concept from which the proposed typological market stratification is rooting, Fig 3.3. had been developed.
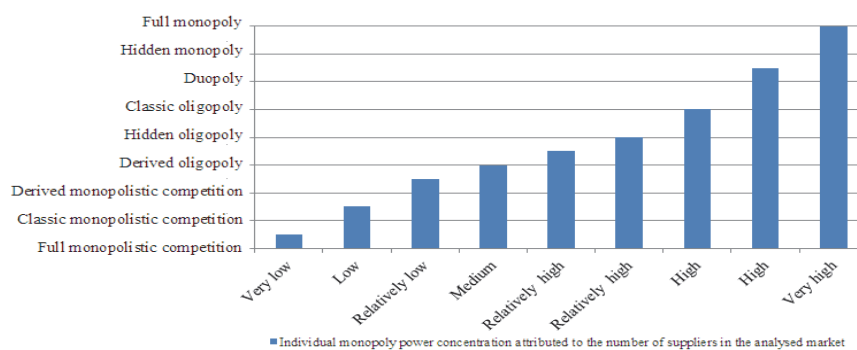

Fig. 3.3. Typological market stratification by individual monopoly power concentration

(Source: developed by the author)

As it may be seen in Fig. 3.3., the proposed typological market form stratification is based on the singularised concentration of monopoly power within a certain supplier group or its disproportional distribution between a low number of non-affiliated private enterprises, which leads to competition undermining business conduction practices based on the objective economic reality of excessive market influence capability clustering. It may be stated that the proposed typology, to a certain extent, reflects both the state of competition in a given market and the relevant monopolisation process acceleration tendencies or, if viewed from an empirically theoretical perspective, reflects the main characteristics of a certain market conjuncture structuring features through the prism of health of competition environment in the wider context of general state of market development and its overall maturity.

The proposed typological stratification assumes that a newly created market in a liberal economic environment and a low level of governmental interference as well as a reasonable degree of business registration administrative procedures, hereafter referred to as the "normal economic condition", has a general tendency of being highly competitive due to a great potential for future growth and excellent profit extraction possibilities. While maturing, the booming industry becomes less competitive due to the loss of investor interest as the natural growth rates decrease and the industry reaches its peak of development. Under modern economic conditions the process of monopolisation is then triggered by either external internal competition or external shocks (see Figs 2.1. and 2.2.), and the concentration of individual monopoly power inevitably grows as the market goes through constituent maturity stages. The relevant typology had been coherently incorporated into the electronic template of the developed unified monopolisation process evolution model and is used for defining the current market type under analysis, describe its main economic characteristics and issue general prognosis of likely trends of the future situation development. The general typological forms and their corresponding empirical characteristics used in the developed typology are reflected in Annex 2 of the current Doctoral Thesis, while its consolidated version is available in Table 3.6.

Table 3.6.

The Proposed Market Stratification Typology, Based on Competition Environment Maturity and Market Demand-side Concentration Level

		Total number of market suppliers (N)						
		$N = 1$	$N = 2$	$N = 3$	$N = [4;7]$	$N = [8;10]$	$N = [11;15]$	$N > 15$
Total level of monopolization (TLM)	**Very low**	-	-	-	Classic monopolistic competition	Full monopolistic competition	Full monopolistic competition	Full monopolistic competition
	Low	-	-	-	Derived monopolistic competition	Classic monopolistic competition	Classic monopolistic competition	Full monopolistic competition
	Relatively low	-	-	Oligopoly in a state of price war	Derived monopolistic competition	Classic monopolistic competition	Classic monopolistic competition	Classic monopolistic competition
	Medium	-	Duopoly in a state of price war	Oligopoly in a state of price war	Derived oligopoly	Derived monopolistic competition	Classic monopolistic competition	Classic monopolistic competition
	Relatively high	-	Duopoly	Classic oligopoly	Hidden oligopoly	Derived oligopoly	Derived oligopoly	Derived monopolistic competition
	High	Full monopoly	Hidden monopoly	Classic oligopoly	Classic oligopoly	Hidden oligopoly	Hidden oligopoly	Hidden oligopoly
	Very high	Full monopoly	Hidden monopoly	Hidden monopoly	Hidden oligopoly	Hidden oligopoly	Hidden oligopoly	Hidden oligopoly

While considering the relevant information regarding the empirical concept, theoretical basis, structure, quantitative composition, processing techniques of information of functioning principles and interpretation system of the result of the unified monopolisation process evaluation model provided in Section 3.1. and Section 3.2. of the current Doctoral Thesis, it would be scientifically and academically beneficial to conduct an implementation experiment and execute a practical approbation of the developed model in order to test its functional applicability and operational accuracy in the context of verifying the proposed research hypothesis in an objective, non-prejudiced and unbiased manner. The order of conduct and results of the mentioned verifying

experiment are be described in Section 3.3. of the current Doctoral Thesis. It must be noted that the empirical concept, analytical layout, structural integrity, configuration and functionality as well as the practical applicability and significance of the developed methodology had been positively verified, confirmed and deemed sufficiently robust by both the consulted experts-practitioners (see Annexes 57–59) as well as the focus group consisting of business, industry, academic and public sector representatives (see Annex 60).

In order to compose a comprehensive, transparent and scientifically objective analytical summary of the results acquired during the course of the conducted research, an approach of informative incremental visualisation had been taken by the author, enabling a sequential display of both the quantitative data and its corresponding interpretation generated by the experimental modelling described it Section 3.3. of the current Doctoral Thesis, simultaneously employing several mutually complementary graphical tools, which sufficiently reflect on the scale and magnitude of the detected trends, discovered consistency patterns and disclosed causalities existing in the analysed markets, while seeking a sufficient factually-scientific basis for confirmation or rejection of the defined research hypothesis in the wider context of empirical studies of monopolisation process. While assessing the aggregated quantitative outputs generated by the aforementioned experimental modelling, it would be beneficial in terms of visual comprehensibility to display cumulative values taken by the system of employed indicators in all of the analysed industry. Furthermore, an elaboration on the differences between the progression state of current monopolisation process and the future monopolisation process progression possibility indexes should be made before constructing a final summary of the fluctuation ranges of quantitative value and the numerical thresholds reached by the mentioned structural elements of evaluation system of the developed monopolisation process. Hence, the relevant information is graphically displayed in full accordance with the declared principle of incremental visualisation, implying a sequential disclosure of the undertaken analysis.
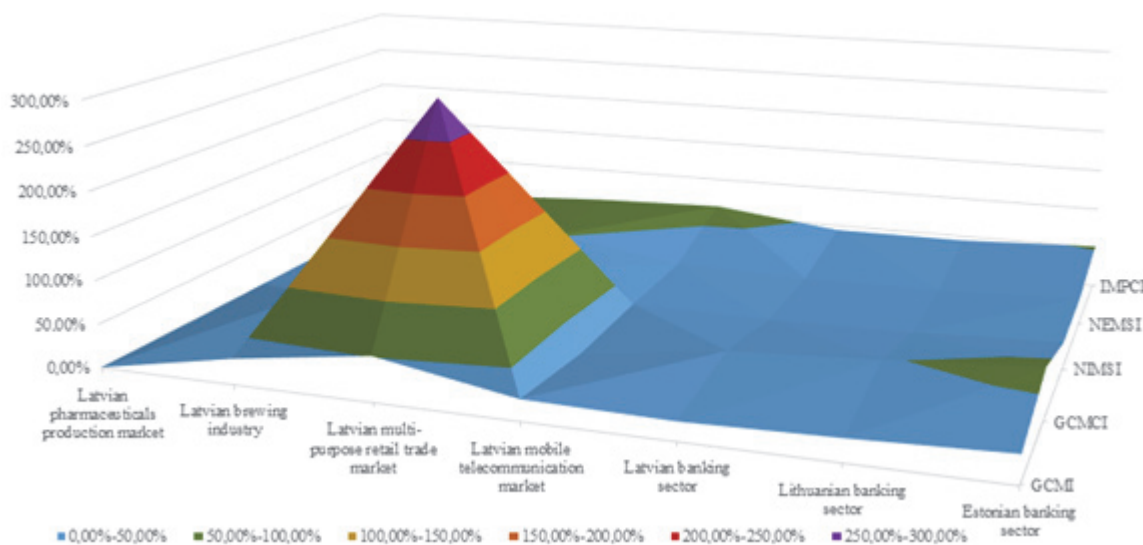

Fig. 3.4. Inter-market average value ranges of the current
monopolisation process progression state indexes

(Source: developed by the author)

As it may be seen in Fig. 3.4., the average cumulative values of current monopolisation process progression state indexes had been limited to a cross-market fluctuation ranges from zero to sixty percent during the entire analytical period, such statement holding true for all of the analysed markets and industries with the notable exception of the GMCI in the Latvian multipurpose retail trade market, which remained in the volatility range of 250.00–300.00 % with an average value of 292.43 %, disclosing a visibly divergent trend of exceptionally high consistency of the current state of quasi-oligopolistic market structure, thus leading to the following conclusion: an intermediary link in a supply chain established in a small open economy, providing distribution services and upholding an accessibility convenience channel, consisting of vertical flows of diversified product

29

assortments, has a tendency to interlock the established level of monopolisation and the static nature of an external pressure-exempt market, essentially locking the market from potential competition conversion into actual entry, which consequentially leads to a niche-based clientele segregation and, eventually, to a higher cumulative level of monopolisation process progression. In other words, retailers benefit from an absence in classic external pressure as they by definition operate in a domestic market, to be more precise in a certain geographic area, which combined with a lack of external competitor challenges may lead to a higher level of individual market power concentration, thus consequentially creating solid ground for incremental escalation of monopolistic tendency.

Hence, it may be stated that the progression of monopolisation process in the mentioned types of markets is likely to have a higher consistency level and their further development is highly reliant of the overall potential of future consolidation prospects, which are in direct relation with the individual profitability and growth opportunities in a given market. Therefore, in order to elaborate on the mentioned issue, it would be rational to summarize the data on future progression possibility of monopolisation process.
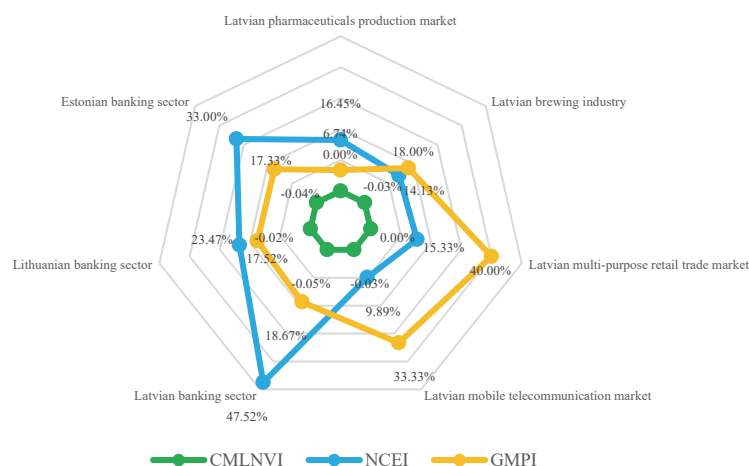

Fig. 3.5. Inter-market average value ranges of the future monopolisation
process progression possibility indexes

(Source: developed by the author)

As it may be seen from Figure 3.5., the quantitative fluctuation value ranges of the future monopolisation process progression possibility indexes vary considerably, depending on the type of the analysed market, however three notable consistency patterns may be detected. Firstly, the cross-market CMLNVI value range had been severely close to a neutral (zero) value in all industries during the entire analytical period, disclosing a trend of minimal rapid changes in the current market structure in terms of individual market power volatility escalation, thus enabling a suggestion of small open economies operating on a scale level, which does not uphold an exceptionally high number of domestic supply-side participants due to higher limitations in both the total market consumption capacities and their speed of expansion, if compared to their larger counterparts, consequentially leading to import amounts and involvement in international trade being crucial to ensuring the existence of sustainable competitive environment in the long run. Secondly, both NCEI and GMPI reflected a visible if indirect mutual correlation, thus upholding the assumption of competition effects being inversely-proportional to the potential of future monopolisation process escalation possibility, hence it may be held confirmed that the efficiency of a given competitive environment is leveraged by the fragmentation of the corresponding market structure (as an industry consisting entirely of small business is more vulnerable to macroeconomic shocks than its counterpart comprised of a reasonable if marginally fewer medium enterprises), thus allowing to consider the phenomenon of excessive competition a possibly damaging one in the long-terms, if the market is sealed-off from new competitor entry and/or import flow establishing as the most economically sensible ways of increasing the extent of consumer choice possibilities by purely market levers. Therefore, involvement in international trade and the existence of sufficient and

consistent import flow once again may be found crucial to mitigate the potentially negative market consolidation possibilities in its domestic supply-side actor segment.

Thirdly, the value ranges of both NCEI and GMPI had been substantially wider and the upper thresholds higher in cases of markets and industries, which had limited if any import amounts, thus repeatedly confirming the positive effects of cross-border trade in terms of monopolisation process escalation prevention.

Having analysed the inter-market quantitative value range configuration of the indicator system, employed in the developed monopolisation process progression assessment methodology, it would be rational and scientifically justified to turn to their actual aggregated values, obtained during the conducted experimental modelling, and reflect on the discovered peculiarities of the structure and substance of economic processes behind the obtained numbers.
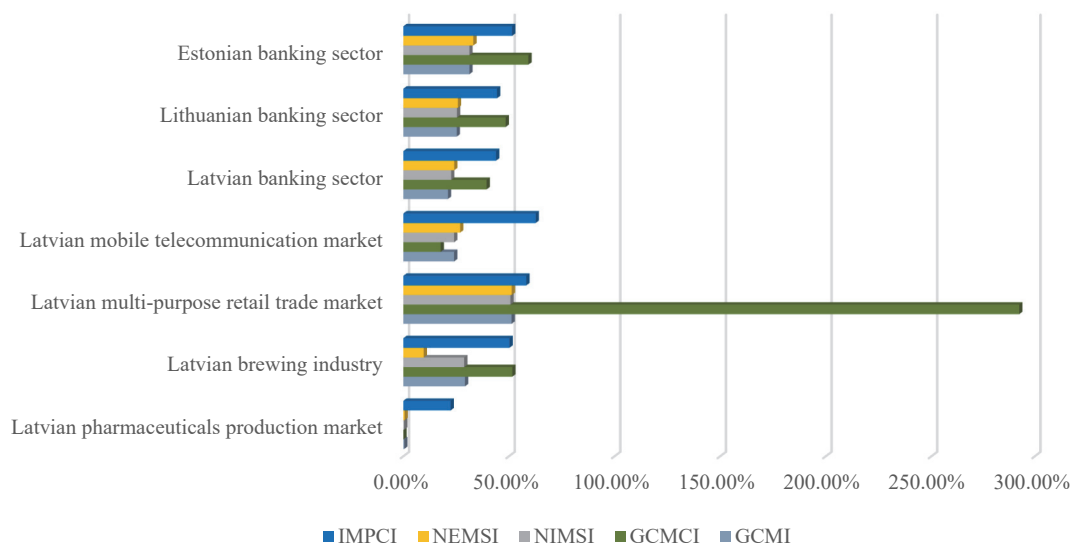

Fig. 3.6. Cumulative average values of current monopolisation process progression state indexes

(Source: developed by the author)

As it may be seen in Fig. 3.6., the cumulative average values of the current monopolisation process progression state indicator group-comprising indexes had shown a notable level of variance across the analysed market, which may be dubbed as exceptionally visible in the case of GCMCI, which ranges from zero in the Latvian pharmaceuticals production market to over 290 % in the case of the multi-purpose retail trade market of the same country. The explanation of the reviled trend is rather obvious: different markets are characterised by varying levels of competition, conjuncture structuring paradigms, stages of development and other structural specifics, although the banking sectors of all three Baltic States seem to share many similarities, especially in the case of bilateral mutual comparison between situations in Estonia and Lithuania if assessed through the prism of volatility levels among the five relevant indexes in general, while magnitude trend seems to be overall consistent, thus reflecting a notable degree of convergence between the analysed banking sectors of the relevant region (as a side note, it may be pointed out that the Estonian banking sector had a higher cumulative average current level of monopolisation, when defined as a relevant market, compliant with the methodology, employed by the current research).

A more important conclusion, highly relevant for the purpose and reasoning of the conducted research, may be formulated as follows: the Latvian brewing industry and the Latvian pharmaceuticals production market had reflected a significantly lower level of both individual and aggregated indicator values, focused on identifying and quantifying the current state of monopolisation process progression, which is especially visible in the latter case. If the Latvian brewing industry reflected an existing if comparatively mildly established current level of monopolisation process continues development, the Latvian pharmaceuticals production market had been visibly less prone to uphold a level of monopolistic tendency persistence sufficient to form a sustainable basis for the analysed process further escalation. This becomes especially clearly

visible if the situation is compared to that of the Latvian multi-purpose retail trade market and all three of the analysed banking sectors, all of which the conducted analysis had disclosed to retain a stable and, to a certain extent, notable levels of current monopolisation process maturity and development. Given that the two of the analysed markets, which had been the only ones observing a stable, sustainable and lasting flow of imports, had been found to reflect a clearly lower level of monopolisation process development than their counterpart not engaged (for conjuncture, macroeconomic, physical, infrastructural or other reasons) in international trade on a non-negligible scale, it may be stated that the current level of monopolisation progression in modern small open economies is directly interconnected with their sufficient involvement in cross -border economic activity and trade processes, hence a conclusion of the currently conducted assessment results confirming the research hypothesis may be made.

Having confirmed the research hypothesis at the level of current monopolistic trend progression index group, it would suit the scientific logic of the conducted assessment to now turn to the future monopolisation process progression possibility evaluating indicator group, while retaining the general context of the incremental analytical process, employed in the conduction of the current research as well as in its results reflection manner.
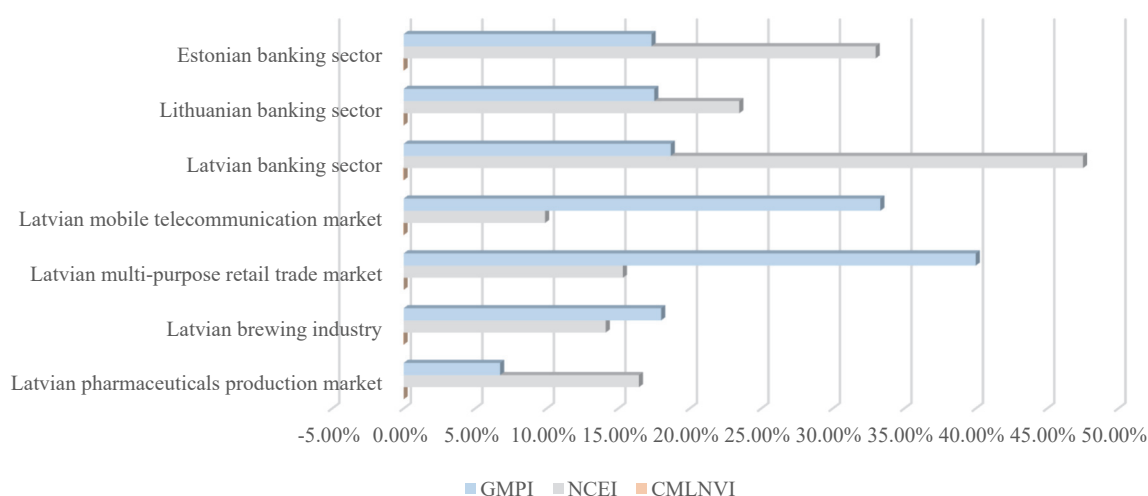

Fig. 3.7. Cumulatively average values of monopolisation process
future progression possibility indexes

(Source: developed by the author)

As it may be seen in Fig. 3.7., the cumulatively average values of the monopolisation process future progression state indicator group-comprising indexes had shown a notable degree of disproportionality and numeric value heterogeneity if comparing GMPI and NCEI, while the CMLNVI retained values of dramatic mutual similarity, which does not come as a surprise when compared to the rather high values of GCMCI and the inverse relations of the two indexes (see Section 3.1. for details). In all of the analysed banking sectors NCEI surpassed GMPI, while the situation in non-financial markets had been the opposite, with the exception of the Latvian pharmaceutical market.

The disclosed trend has at least two reasonable explanations: first, the sully side in the relevant markets with higher NCEI values by a large portion is comprised of internationally-orientated yet foreign-based companies, which operate a domestic subsidiary or import into the domestic markets, this being the case in all of the analysed banking sectors (subsidiary scenario) and the Latvian pharmaceutical market (the high-volume import scenario).

The mentioned situation consequentially provokes a higher level of competition as the defined relevant markets in a geographic sense are yet another area of business interest overlap zone, hence the competition of the parent enterprises is being projected on local economic environments.

Secondly, a higher level of international representation in a given market indicates than there are no significant entry barriers and that the entrepreneurial system is indeed open for competition, new entrants and has a reasonable level of profitability expectations. Thus, it may be concluded that

involvement in international trade and cross-border economic activity, both directly (imports) and indirectly ("foreign" representation in "domestic" markets) constitutes a higher level of competition effects.

However, the magnitude of the mentioned competition may be such that the positive effects turn negative and the competitive environment becomes regressive: the level of competition generated a sufficient level of pressure that eliminated certain enterprises from engaging in operation within the market (see Section 3.1.). None of the analysed markets represents a case of regressive competition, although it may be stated that the level of competitive pressure in the Latvian Banking sector may be growing if addressed as a quantitative average value dynamic phenomenon. Consequentially, it may be argued that the mentioned pressure may result in consolidation, possibly an acquisition by a larger bank one/several of its smaller counterparts, however, given the peculiarities of the regulation of the mentioned sector and the need for "pressure release" on a considerable level, a merger of two "middleweight" competitors seem more likely.

Given that Fig. 3.8. reflects a segment of the Latvian Banking sector, which is comprised of domestically orientated financial organisations (see Subsection 3.3.5.), it would be rational to conclude that the possible merger, *ceteris paribus,* shall take place between two sufficiently yet not overwhelmingly greatly represented Scandinavian subsidiaries in the period of 2017–2018. Regarding the general assessment of the disclosed data, it may be stated that two of the three indexes, reflecting monopolisation process future progression possibility, in most cases had been subject to reflecting a higher monopolistic tendency escalation in those markets, which had not sufficiently involved in international trade, while the third revolved around zero values in all cases, indicating a continuation of the previously uncovered paradigm: a higher level of international representation in the market as well as a significant amount of import indicates a lower level of current monopolisation process development and a generally lower level of monopolistic tendency future escalation possibility, the latter being subject to a minor level of provisional deviation due to the unavoidable component of uncertainty and unforeseen changes, including shock risks and paradigm reshaping probability, that is ever present in all models, attempting to deliver any type of prognosis, while being based on retrospective data.

In order to enable an unbiased understanding of the quantitative result obtained during the conducted experimental modelling and ensure a coherent interpretation of the numerical values taken by the employed indicators comprising both of the monopolisation process evaluating analytical index groups, a summary of the previously delivered incremental analysis is available in Fig. 3.8.
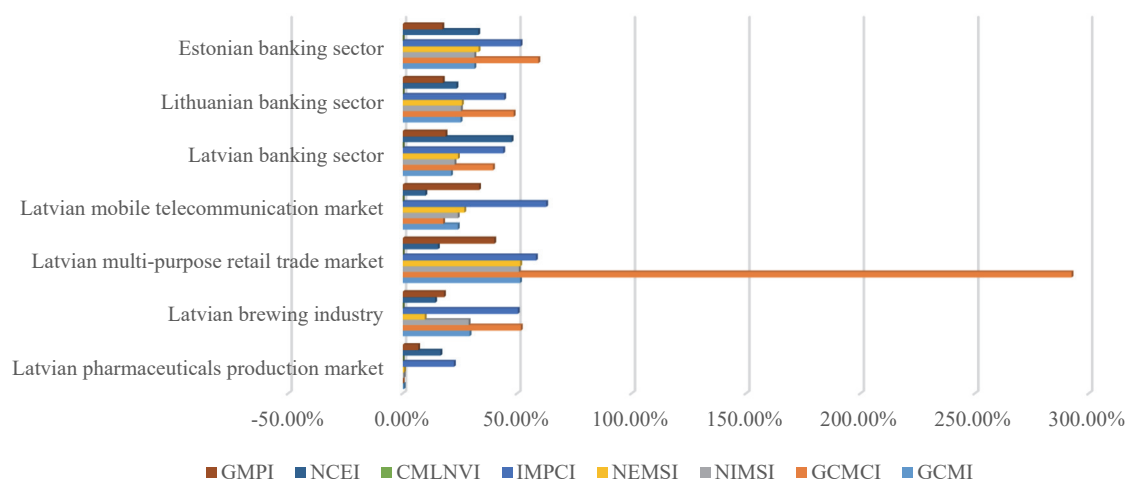

Fig. 3.8. Compilation of cumulatively average values of the employed
monopolisation process assessment indicator system

(Source: developed by the author)

As it may be seen in Fig. 3.9., the empirical conclusions relevantly displayed in Figs 3.7. and 3.8., are to be hold true in the wider context of the conducted analysis as indeed those industries, which had a higher degree of involvement in international trade and regional cross-border economic activities, had shown a visibly and, to an extent, severely lower levels of both current and potential of monopolisation process progression, enabling the research hypothesis to be held true and positively verified in term of its numerical dimension.

In order to fully uphold the research hypothesis, a consideration of the qualitative (in terms of the acquired numerical results interpretation) aspects of the conducted quantitative modelling would be beneficial in terms of ensuring a sufficient level of scientific transparency and analytical coherence.

An illustrative reflection of the qualitative evaluation of the current monopolisation process progression level in the analysed relevant markets (as determined by the employed indicator system) is available in Fig. 3.9.
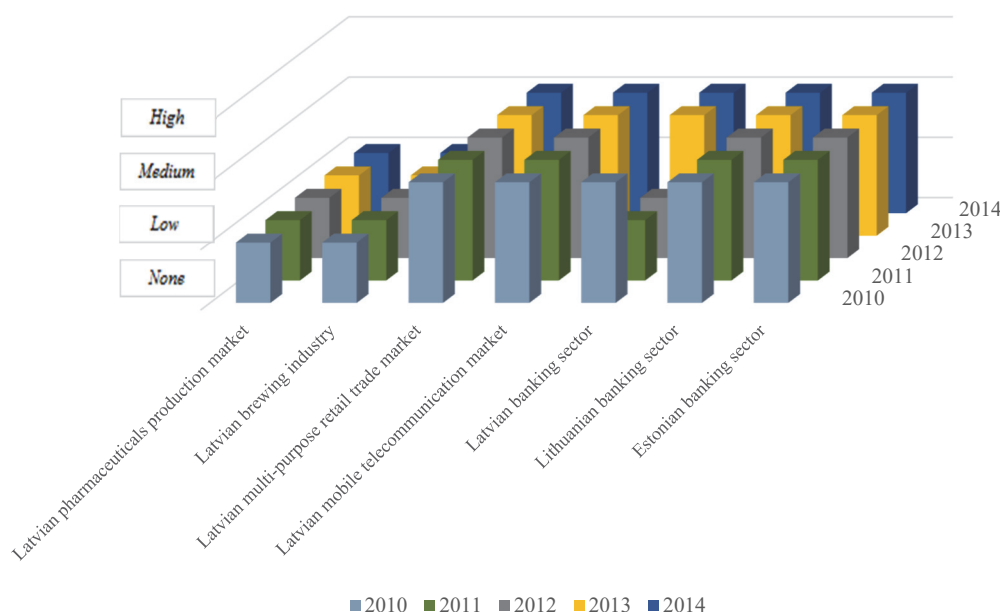

Fig. 3.9. Monopolisation process in the analysed market: cumulative current progression

(Source: developed by the author)

As it may be seen in Fig. 3.9., the cumulative level of monopolisation process current progression level had been qualitatively defined as "medium" in all of the analysed markets, except for the Latvian pharmaceuticals production and Latvian brewing industries, while from the dynamic retrospective point of view the situation remained largely unchanged and unchallenged by the internal development processes taking place in the relevant economic environments, with a mild exception of the Latvian banking sector, which had seen a two year decline to "low" levels, although made a fast and stable return to the "medium" level in 2013.

In terms of verification of the research hypothesis, it may be clearly seen that those analysed markets, which had a notable share of imports and had been extensively involved into both regional and international trade, had been deemed of having a consistently "low" level of current monopolisation process progression, while their more isolated and strictly domestic consumption-orientated counterparts had a cooperative "medium" level of the same quantitative indicator. Hence it may be stated that the defined research hypothesis had been upheld and verified as remaining true in both quantitative and qualitative terms, while addressed through the prism of monopolisation process multifactorial analysis.

Complementary, a reflection of the qualitative evaluation of the future monopolisation process further progression potential and possibility, combined with the previously conducted evaluation of its current development and procedural maturity levels, enables a coherent dynamic retrospective of the total level of monopolisation in the analysed relevant markets, which had been made available in Fig. 3.10.
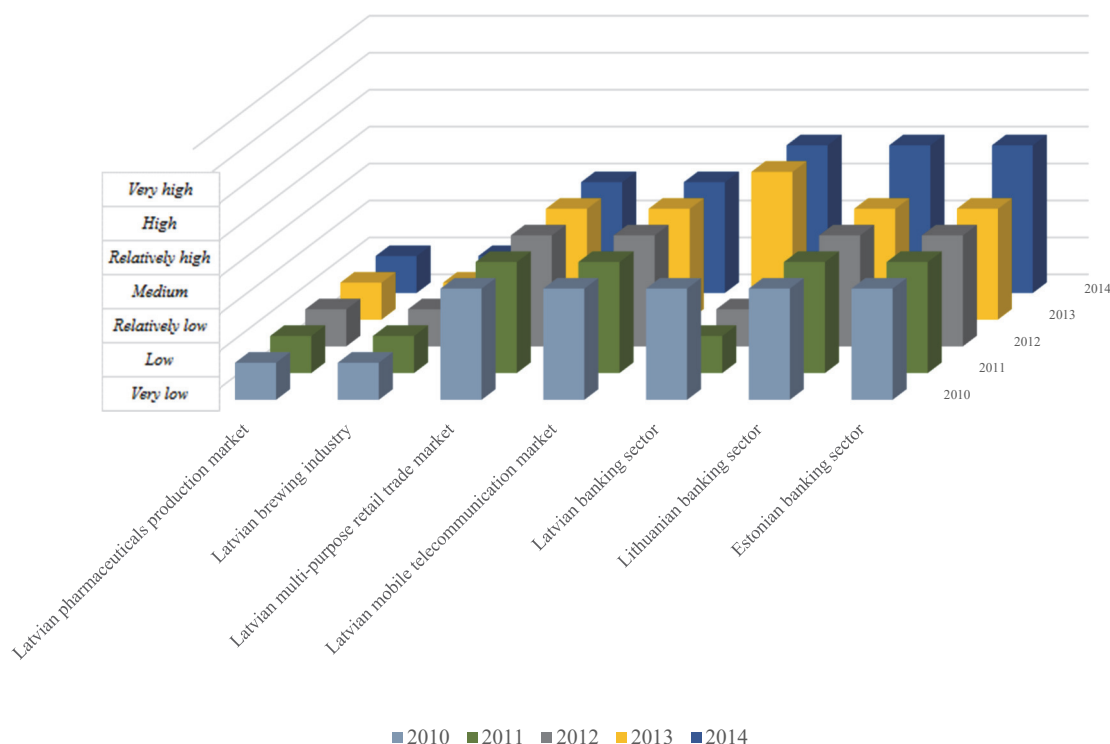
Fig. 3.10. Total level of monopolisation in the analysed market: the qualitative dimension

(Source: developed by the author)

As it may be seen in Fig. 3.10., according to the methodological approach developed, proposed and taken by the current research (see Section 3.1. and Section 3.2. as well as Annex 1 and Annex 2), the Latvian pharmaceuticals production market and Latvian brewing industry had retained a "very low" cumulative total level of monopolisation in terms of both the relevant economic processes' current progression scale and future further escalation potential, while the Latvian multi-purpose retail trade and mobile telecommunication markets had a consistently "relatively low" total level of monopolisation.

A more dynamic situation had been observed in the Latvian banking sector, which had seen a drop in total level of monopolisation from "relatively low" to "low" followed by an increase to "medium" level, while the banking sectors of Estonia and Lithuania had retained a "relatively low" level of monopolisation, which increased to "medium" in 2014.

As a side note, it may be acknowledged that such regional convergence of economic processes reflects a case of regressive competition in Latvia and a general correction pressure in the wider, cross-border financial sector, which, while remaining distinct in terms of clientele orientation, is implicationally connected in terms of subsidiary and branch office ownership, hence a conclusion of a looming consolidation in the Scandinavia-affiliated banking sector businesses in the nearest future (2016–2017) may be made.

In terms of verification of the defined research hypothesis, it may be stated that those of the analysed markets, which had a considerably higher level of involvement in international trade and regional economic processes, including occasional cross-border spill-overs in entrepreneurial activity, had indeed reflected a quite notably lower level of total monopolisation process progression and development in both quantitative and qualitative terms. Thus, it may be stated that the research hypothesis had been upheld and is in fact positively verified.

In order to fully comprehend the dynamics of incremental and/or shock-based (as in case of the Latvian banking sector) monopolistic trend strengthening and escalation, a summary, reflecting the cumulative change in monopolisation levels in the analysed markets would be scientifically beneficial and academically supplemental. The relevant goal was met by introducing Fig 3.11.
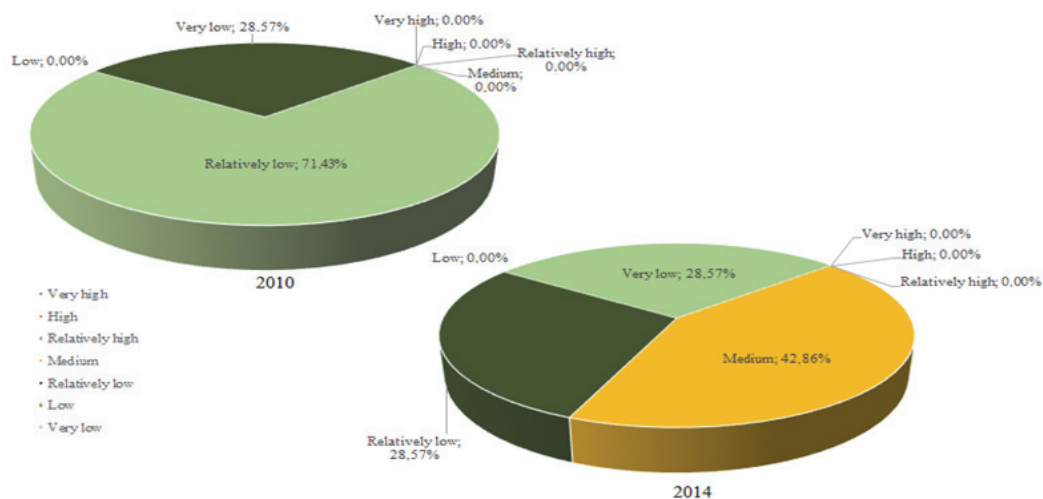
Fig. 3.11. Dynamic progression of the total level of monopolisation over the defined analytical timeframe within the assessed industries

(Source: developed by the author)

As it may be seen in Fig. 3.11., the share of markets with total level of monopolisation (TLoM) of "relatively low" had dropped from 71.43 % to 28.57 % (a decrease by 42.86 %), while those industries with a "medium" TLoM had risen by those very 42.86 %, both processes taking place simultaneously and in the context of TLoM "very low" markets remaining the same. Therefore, it may be concluded that those of the analysed industries, which had and retained a high level of international orientation and a considerable share of imports, retained their "very low" level of monopolistic tendency escalation and monopolisation process development, while their import-deprived and strictly domestically orientated counterparts had undergone a notable increase in monopolisation trend maturity, which additionally confirms the research hypothesis as true, thus enabling it to be upheld and defined as positively verified.

Additionally, to clarify and objectively assess the impact of imports on the total level of monopolisation in the analysed markets as well the importance of the relevant factor as an indicator of sufficiency for the existing level of involvement in international trade in terms of such economic process generated positive competitive effects, which constraining the even present monopolistic trends, a relation between imports shares into and the total level of monopolisation (defined in qualitative terms) within the analysed markets had been reflected in Fig. 3.12.
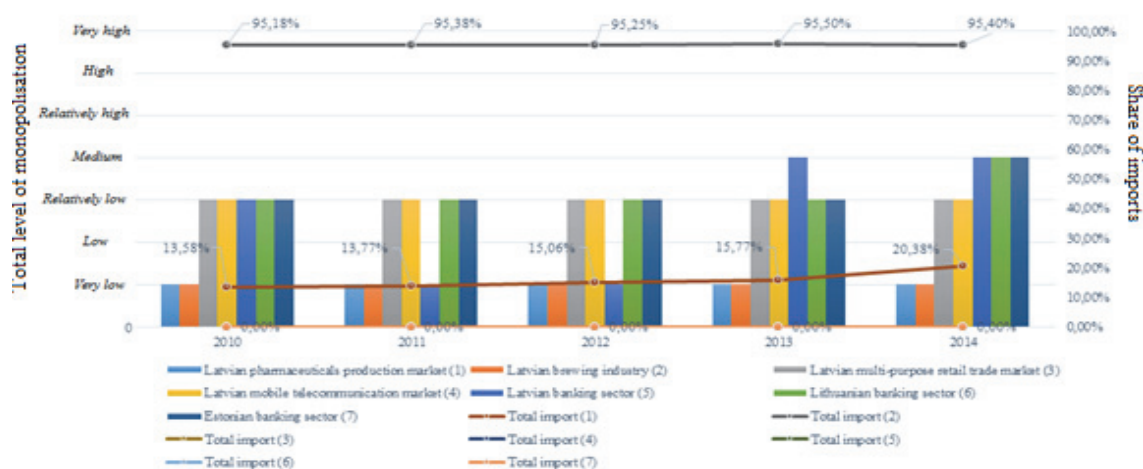

Figure 3.12. Causal consistency pattern between the level of imports and the total cumulative level of monopolisation within the analysed markets

(Source: developed by the author)

36

As it clearly may be seen in Fig. 3.12., those of the analysed industries, which had a significant amount of imports, tended to have a visibly lower total level of monopolisation, thus upholding the theory of international trade playing a positive role in development of competition environments, hence the process of monopolisation if addressed through the prism of multi-factorial analysis as an economically natural, ever present phenomenon, may be considered as the regressive counterpart or "the flip side" of competition, meaning that both monopolistic trend escalation and competitive strive strengthening are simultaneously present in every truly market economy and its industries (except for the public monopoly cases), while being directly-proportionately reversely orientated in terms of their maturity and conduct. The fact that had proven to be even more intriguing is the acknowledgement that even mild presence of imports (as in the case of the Latvian brewing industry) seems to stimulate a higher level of competition and a significantly diminished strive for monopolistic tendency progression, which may be explained by the fact that the presence of imports not only indicates a sufficient degree of market openness to new entry, but, more importantly, delivers a clear message of actual involvement into cross-border economic activity and at least regional trade, thus making the relevant market a more attractive option for international investment and further non-domestic market actor involvement, resulting in emergence, rational functioning and constituent development of modern, converging and financially attracting industries, which are simultaneously competitive, diverse and adaptive in terms of their macroeconomic conjuncture structuring.

Therefore, while taking into account the reasoning, analysis and outline of the research, conducted and described in detail in Chapters 1, 2 and 3 of the current Doctoral Thesis as well as the national and international expert opinion on the relevant issue (see Annexes 57–59), the following may be concluded.

1. All five of the analysed esteemed historical and contemporary schools of economic thought acknowledge that monopolisation process emerges, matures and progresses more swiftly in cases of excessive market power concentration within certain economic clusters, which is a trait, commonly found in markets with limited internal resources and consumption capacities, especially in situation of significant barrier (to external supply-side market actor entrance) existence.

2. All of the renowned national and international experts in the relevant fields had acknowledged that monopolisation trends in contemporary small open economies are more likely to emerge in those relevant markets, which have higher entry barriers and are generally less engaged in international and/or regional trade and cross-border economic cooperation (for details, see Annexes 59–60).

3. The analysis, conducted in Chapter 3 and the corresponding generated results summarised in Subsection 3.7, had verified that current level of monopolisation in those industries, which are for objective or subjective reasons excluded from international trade representation and cross-border competitive pressure had been significantly higher than in the case of those counterfactual counterparts with a significant level of inclusion into economic activity at least on regional level.

4. The analysis conducted in Chapter 3 and the corresponding generated results summarised in Subsection 3.7 had verified that potential of monopolisation process further progression in those industries, which are for objective or subjective reasons excluded from international trade representation and cross-border competitive pressure, had been significantly higher than in the case of those counterfactual counterparts with a significant level of inclusion into economic activity at least on a regional level.

5. The analysis conducted in Chapter 3 and the corresponding generated results summarised in Subsection 3.7 had verified and proven via implementation of the developed market typological stratification system that the cumulative level of monopolisation in those industries, which are for objective or subjective reasons excluded from international trade representation and cross-border competitive pressure, had been significantly higher than in the case of those counterfactual counterparts with a significant level of inclusion into economic activity at least on regional level.

Hence, it may be stated that the defined research hypothesis had been positively verified and confirmed: contemporary small open economies indeed undergo a natural, economic reality-shaping factor-based and internal competition supported market consolidation process, which leads to the acceleration of individual monopoly power concentration in specified niches, particularly in those industries and relevant markets, which are excluded from participation in international trade and are therefore constrained in the scale of positive regional convergence and cross-border entrepreneurial cooperation effects, delivered by the interconnectedness of the modern global economy.

CONCLUSIONS AND RECOMMENDATIONS

Considering the analytical results and empirical findings of the conducted research, the following may be concluded:

1. Though showing a visible level of individual interpretation, the prominent economic schools of economic thought share a certain degree of conceptual consensus on the research objects of the current Doctoral Thesis, thus enabling the developments of a unified definition of monopolisation process, empirically suitable for adherents of any of the mentioned paradigm of economic research.

2. The unified definition of monopolisation process may be formulated as follows: a sufficiently wide or sectorial economic process of supplier individual market share consolidation, caused by either internal (conjecture) or external (trend) influence factors, followed by directly proportionate growth in monopoly power of the process-involved individual suppliers.

3. If fair and equal opportunity competition is defined as the "Yin" of globalised open economies, the process of monopolisation is its corresponding "Yang" – an undesirable yet inseparable comprising element of a holistic and fundamental economic process.

4. The research hypothesis had been confirmed: contemporary small open economies indeed undergo a natural, economic reality-shaping factor-based and internal competition supported market consolidation process, which leads to the acceleration of individual monopoly power concentration in specified niches, particularly in those industries and relevant markets, which are excluded from participation in international trade and are therefore constrained in the scale of positive regional convergence and cross-border entrepreneurial cooperation effects, delivered by the interconnectedness of the modern global economy.

5. Origins of monopolisation process may be traced to the disproportionate distribution of individual market power within a defined relevant market, while being closely related to the overall interaction intensity between specific clientele group-targeting suppliers.

6. Monopolisation process is most likely to develop in situations of disproportionate individual market power distribution between suppliers conducting business operations and involved in economic activities within a defined relevant market.

7. Monopolisation tendencies may be altered by both external economic pressure and macroeconomic development trends of certain national or regional economy with a higher level of involvement in international trade, and/or regional cross-border business activities tend to undermine the factors, causing monopolistic tendency escalation and mitigate the possibly negative effects of potentially excessive individual market power concentration.

8. The empirical relationship between an industry's (or an economy's, regional or national, if the relevant perspective is extrapolated to a macro-level perspective) monopolisation potential and its actual escalation possibilities *vis-à-vis* the corresponding engagement into international/cross-border economic activities and the cumulative openness of the business environment had been found to generally be inversely proportionate in terms of their mutual empirical causality.

9. Economic environments present in contemporary small open economies had been found to generally behave in the following fashion: the more (in a purely economic sense) internationally engaged and regionally integrated an industry or an economy is, the less "monopolisable" and monopolisation risk-exposed it seems to be.

10. Monopolisation trends may be empirically detected by multi-factorial evaluation of individual market power distribution conjuncture through the prism of comparative analysis of independent and mutually unaffiliated supplier market share dynamics.

11. Applying harmonized quantitative analytical methods and their qualitative interpretation algorithms in the context of synergetic modelling proved an efficient methodological approach to detecting monopolisation tendencies via screening test implementation, while simultaneously enabling the development of an evaluation approach, which enhances the understanding of internal dynamics as well as the main influencing factors of the relevant economic phenomenon.

While considering the methodological basis, the analytical framework, the experimental conduct and the acquired results of the conducted research as well as their interpretation, the following may be recommended:

1. Governmental institutions and public agencies, especially those entrusted with regulatory and competition protection functions, may make extensive use of the developed methodology for policy planning, implementation and assessment as well as other general analytical functions.

2. Private for-profit organisations and enterprises as well as entrepreneurial associations may make extensive use of the developed methodology for business strategy, market screening and competition environment analytical purposes, particularly while making decision on current operation expansion possibility, rationality of entering new markets and conducting a general assessment of operational activity challenges, including that of a regional/local branch level.

3. Non-for-profit organisations and think-tanks may make extensive use of the developed methodology for business environment, competition intensity and industry/market studies in order to enhance the available analytical and methodological capacities, providing an opportunity to utilize a low-cost, robust assessment method, while enabling the use of the obtained results in consultation with governmental representatives, public officials and/or for lobbying activities and making a case for further progression of the defined organisational agenda.

4. It would be scientifically rational to further enhance the developed analytical framework by creating derivative versions of the empirical model, specifically calibrated and particularly suitable for unilateral analysis of designated segregated industry, thus achieving a greater focus and a detailed scope on peculiarities of predefined relevant markets of scientific interest.

5. It would be scientifically beneficial to further enhance the developed methodology by incorporating external macroeconomic factor influence into its quantitative structure, while concentrating on the effects of business cycle volatility and process of consequent maturing in order to objectively define the possible effects that globalized economic activity may have on regional competition development.

BIBLIOGRAPHY

1. Arrow, K. J. (1994). Methodological Individualism and Social Knowledge. *The American Economic Review*, Vol. 84(2), 1–9.
2. Bass, F., Haruvy, E., Prasad, A. (2006). Variable pricing in oligopoly markets. *Journal of Business*, Vol. 79(6), 2789–2809.
3. Bastiat, F. (2007). *The Bastiat Collection. Harmonies of Political Economy. Two Volumes*. Auburn: Ludwig von Mises Institute. 604.
4. Bellante, D. (2004). Edward Chamberlin: Monopolistic Competition and Pareto Optimality. *Journal of Business & Economics Research*, Vol. 2(4), 17–26.
5. Boehm – Bawerk, E.v. (1890). *Capital and Interest: a Critical History of Economical Theory. trans. William A. Smart*. London: Macmillan. 431.
6. Boettke, P. J. (2010). *Handbook on Contemporary Austrian Economics*. Northampton, MA: Edward Elgar Publishing, Inc. 174.
7. Buchanan, J., Stubblebine, Wm. C. (1962). Externality. *Economica*, Vol. 29(116), 371–384.
8. Chamberlin, E. H. (1947). *The Theory of Monopolistic Competition. Fifth Edition*. Cambridge: Harvard University Press. 282.
9. Coase, R. H. (1937). The Nature of the Firm. *Economica*, New Series, Vol. 4(16), 386–405.
10. Coase, R. H. (1960). The Problem of Social Cost. *Journal of Law and Economics*, Vol. 3(1), 1–44.
11. Coase, R. H. (1972). Durability and Monopoly. *Journal of Law and Economics*, Vol. 15(1), 143–149.
12. Fisher, I. (2005). *The Theory of Interest as Determined by Impatience to Spend Income and Opportunity to Invest it*. Indianapolis, IN: Liberty Fund, Inc. 183.
13. Friedman, M. (1962). *Capitalism and Freedom*. Chicago: The University of Chicago Press. 208.
14. Friedman, M. (1970). *Essays in Positive Economics. Reediting (1953-1970)* [online]. Chicago: University of Chicago Press, 3–43. [accessed 11 October 2015]. Available at: https://campus.fsu.edu/bbcswebdav/orgs/econ_office_org/PowerPoint_Files/2023-Joe_Calhoun/2023_Chapter_01/Friedman-Essays_in_Positive_Economics.pdf
15. Harcourt, G. C., Kerr, P. (2009). *Great Thinkers in Economics Series. Joan Robinson*. Houndmills: Palgrave Macmillan. 270.
16. Hayek F. A. (1945). The Use of Knowledge in Society. *American Economic Review*, Vol. 35(4), 519–530.
17. Hayek, F. A. (1948). *Individualism and Economic Order*. Chicago: The University of Chicago Press. 271.
18. Keynes, J. M. (1919). *The Economic Consequences of the Peace. 2012 Reprinting*. London: Macmillan & Co., Limited. 142.
19. Keynes, J. M. (1924). *A Tract on Monetary Reform*. London: Macmillan & Co., Limited. 209.
20. Keynes, J. M. (1937). The General Theory of Employment. *The Quarterly Journal of Economics*, Vol. 51(2), 209–223.
21. Keynes, J. M. (2011). *The General Theory of Money, Interest and Employment. Reediting*. London: Macmillan & Co., Limited. 472.
22. Kotler, Ph. (2000). *Marketing Management. Millenium Edition.* Upper Saddle River: Prentice-Hall. 718.
23. Ludwig von Mises Institute [online]. The Economics of Destutt de Tracy [accessed 12 December 2015]. Available at: https://mises.org/library/economics-destutt-de-tracy.

24. Marshall, A. (1888). Wages and Profits. *Quarterly Journal of Economics*, Vol. 2(2), 218–223.

25. Max Weber (2004). *The Vocation Lectures: Science as a Vocation; Politics as a Vocation. Edited, with Introduction, by David Owen and Tracy B. Strong Translated by Rodney Livingstone.* Indianapolis, IN: Hackett Publishing Company, Inc. 176.

26. McKenzie, R. B., Lee, D. R. (2008). *In Defence of Monopoly. How Market Power Fosters Creative Production.* Detroit: University of Michigan Press. 320.

27. Menger, C. (2007). *Principles of Economics*. Auburn: Ludwig von Mises Institute. 328.

28. Mises, L. v. (1966). *Human Action: a Treatise on Economics. Third Revised Edition*. Chicago: Henry Regnery Company. 906.

29. Motta, M. (2004). *Competition Policy. Theory and Practice.* Cambridge: Cambridge University Press. 704.

30. Nothbard, M. N. (2009). *Man, Economy and State with Power and Market. Second Edition*. Auburn: Ludwig von Mises Institute. 1438.

31. Ricardo, D. (2001). *On the Principles of Political Economy and Taxation*. Kitchener: Batoche Books. 333.

32. Robinson, J. (1932). Imperfect Competition and Falling Supply Price. *The Economic Journal*, Vol. 42(168), 544–554.

33. Robinson, J. (1934). The Economics of Imperfect Competition. *Journal of the Royal Statistical Society*, Vol. 97(4), 671– 674.

34. Robinson, J. (1978). *Contributions to Modern Economics*. Oxford: Blackwell Publishers. pp. 274.

35. Rutherford, M. (2001). Institutional Economics: Then and Now. *Journal of Economic Perspectives*, Vol. 15(3), pp. 185–190.

36. Salerno, J. T. (1978). Comment on the French Liberal School. *Journal of Libertarian Studies*, Vol. 2(1), 65–68.

37. Salerno, J. T. (1988). The Neglect of the French Liberal School in Anglo-American Economics: A Critique of Received Explanations. *The Review of Austrian Economics*, Vol. 2(1), 113–156.

38. Salerno, J. T. (1989). Comment on the French Liberal School. *Journal of Libertarian Studies*, Vol. 2(1), 65.–68.

39. Samuels, W. J., Biddle, J. E., Davis, J. B. (2003). *A Companion to the History of Economic Thought*. Malden: Blackwell Publishing Ltd. 712.

40. Samuelson, P. A. (1939). Interactions between the Multiplier Analysis and the Principle of Acceleration. *Review of Economic Statistics,* Vol. 21(1), 75–78.

41. Samuelson, P. A. (1948). International Trade and the Equalisation of Factor Prices. *The Economic Journal,* Vol. 58(230), 163–184.

42. Say, J.-B. (1971). *A Treatise on Political Economy. Sixth American Edition*. New-York: Augustus M. Kelley Publishers. pp. 488.

43. Schumpeter, J. A. (2006). *History of Economic Analysis. Reprinting.* Abingdon-on-Thames: Taylor & Francis e-Library. 1283.

44. Smith, A. (2007). *An Inquiry into the Nature and Causes of the Wealth of Nations. Books I, II, III, IV and V*. Lausanne: MetaLibri. 743.

45. Sraffa, P., Dobb, M. H. (2004). *The works and Correspondence of David Ricardo, Volume I.* Indianapolis: Liberty fund. 447.

46. Stiglitz, J. E. (December 8, 2001). *Information and the Change in the Paradigm in Economics*. Prize lecture, Columbia Business School, Columbia University, 472-540.

47. Stucke, M.E. (2013). Is Competition Always Good? *Oxford Journal of Antitrust Enforcement*, Vol. 1(1), 162–197.

48. The Independent (2009). [online] *Paul Samuelson: Nobel Prize-winner widely regarded as the most important economist of the 20th century*. [accessed 30 June 2015]. Available at: http://www.independent.co.uk/news/obituaries/paul-samuelson-nobel-prize-winner-widely-regarded-as-the-most-important-economist-of-the-20th-1841902.html

49. White, L. (2012). Market Power: How Does It Arise? How Is It Measured? [online] New York: New York University, Leonard N. Stern School of Business, Department of Economics, Working papers, EC-12-06. [accessed 13 August 2015]. Available at: Retrieved: http://webdocs.stern.nyu.edu/old_web/economics/docs/workingpapers/2012/White_MarketPowerRiseandMeasure.pdf.

50. White, L., Selgin, G. (1994). How Would the Invisible Hand Handle Money? *Journal of Economic*, Vol. 32(4), 1718–1749.