Anna **KISLOVSKA**

EVALUATION OF GLOBAL BUSINESS SERVICES CENTERS IMPACT ON MACROECONOMIC INDICATORS IN CENTRAL AND EASTERN EUROPE COUNTRIES

MRU
MYKOLO ROMERIO
UNIVERSITETAS

MYKOLAS ROMERIS UNIVERSITY

Anna Kislovska

EVALUATION OF GLOBAL BUSINESS SERVICES CENTERS IMPACT ON MACROECONOMIC INDICATORS IN CENTRAL AND EASTERN EUROPE COUNTRIES

Doctoral Dissertation
Social Sciences, Economics (S 004)

Vilnius, 2022

Anna Kislovska

GLOBALIŲ VERSLO PASLAUGŲ CENTRŲ POVEIKIO RYTŲ IR CENTRINĖS EUROPOS ŠALIŲ MAKROEKONOMINIAMS RODIKLIAMS VERTINIMAS

Daktaro disertacija
Socialiniai mokslai, ekonomika (S 004)

Vilnius, 2022

PADĖKA

Table of Contents

LIST OF FIGURES

LIST OF TABLES

13

LIST OF APPENDIXES

LIST OF ABBREVIATIONS

ABSL –   Association of Business Service Leader.
AMCHAM –   the American Chamber of Commerce.
BPO –   business process outsourcing.
BSCF –   the Business Service Center Forum.
CEE –   Central and Eastern Europe.
FDI –   foreign direct investment.
GBSC –   Global Business Services Center.
GPD –   gross domestic product.
HIPA –   Hungarian Investment Promotion Agency.
ICT –   information and communication technologies.
KPI –   key performane indicators.
LQ –   location quotient.
OECD –   Organisation for Economic Co-operation and Development.
PAIH –   Polish Investment and Trade Agency.
R&D –   research and development.
SARIO –   Slovak Investment and Trade Development Agency.
SLA –   service level agreement.
SSC –   Shared Services Center.
SSON –   the Shared Services & Outsourcing Network.

DEFINITION OF TERMS

Associations of Business Service Leaders (ABSL) – organization united by the vision of building a competitive business services industry in cooperation with government representatives, public institutions, central and local authorities as well as local communities. This organization is representing the business services sector, gathering high profile companies which conduct business in the area of Shared Services Center, Business Process Outsourcing, Information Technology Outsourcing, Research and Development and companies contributing to the sector's growth (ABSL, 2021). Number of publications on global business services organization in European countries are prepared by this organization.

Business Process Outsourcing – business delivery model, when company is centralizing, transfering part of its activities to third party providers, usually abroad (PwC, 2015). Usually organizations outsource activities that are seen as non-core to their own operations (European Commission, 2014 a, b). However, the recent practice shows that organizations more oftenly tend to centralize also more sophisticated, core business processes.

Central and Eastern Europe Countries – there are different views on this geographical region. OECD term for the group of countries comprising Albania, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia (OECD, 2001). Term for the group of the countries comprising the Czech Republic, Hungary, Lithuania, Poland, Romania and Slovakia is used in this dissertation since these countries are included into the dissertation research.

Diversity and inclusion – it is based on understanding and respecting differences and similarities between people and cultures to create a positive climate in which all employees bring their best efforts to the workplace, enhancing the development of relevant products and services in a changing marketplace. Diversity refers to differences of all kinds, including, but not limited to, gender, age, personal values, educational opportunities, personal history, and physical ability. Inclusion refers to creating a climate where differences and similarities are respected and people are welcomed into the workplace, have their voices heard, and contributions recognized (Derven et al, 2014).

Foreign Direct Investment – internationalisation of enterprise, specific type of international capital flows. They are made to acquire a lasting long-term control over a foreign entity (Dorożyński, 2020).

Global Business Services Center – business model defined in the dissertation by Strikwerda, 2014; Bondarouk, 2014; Miles, 2011; Oshri et al, 2011; Miller, 1999; Kroll, 2005; Bedell, 2010; Schulman et al, 1999; Keith et al, 2016; Wang, 2015; Huber, Danino 2012 and others and by the dissertation author: global value agile organization, which meets the conditions of multi-function, multi-region, multi-location, multi-sourced and multi-business characteristics and which is using globalization, digital enablement as the core drivers to create value according to common service level agreement.

Holistic Approach – author of the dissertation sees it as looking at something as a whole interconnected picture (macroeconomic outcomes multiplier effect), but not separate parts of it (separate macroeconomic indicators).

Host Country – foreign direct investment receipent country (Humanicki, Olszewski, 2020).

Intangible Assets – e non-monetary assets, identifiable, without material support, used in the processes of production or supply of goods and / or services (Russu, 2021).

Key Performance Indicators – set of performance measurements, which company has to identify the main performance indices (Marciniak, 2013a).

Life Quality Indicators – indicators in material and immaterial dimensions, according to which the life quality can be evaluated. In the terms of assessment of country's economic situation, Servetkienė (2013) distinguishes the set of indicators from the following areas: wealth, health, education, the relationship between work and leisure, time spent on personal development, self-education, physical, economic, social, and legal security, the ability to influence government decisions, social contacts and participation in community activities, the living environment.

Location Quotient – approach of quantifying of local specialization, which shows the concentration of selected industry, cluster or phenomenon (ABSL, 2020).

Nearshoring – type of backshoring, but instead of coming back to countries/regions where a firm has its headquarters or where the plant was previously located, the relocation is to a nearby area offering the advantages both of offshoring (lower production costs) and of backshoring (competitiveness in some high-quality segments and quick delivery), but without suffering from the main limitations of either (typically, large distances between plants/business services and their main markets and the scarcity of a specialised labour force) and benefiting from reducing geographical, cultural,

and linguistic distances (Piatanesi, Arauzo-Carod, 2019).

Non-Payroll Benefits – non-financial benefits. In terms of GBSCs – motivation packages, which increase intangible value for employees and fulfil their self-development, mental, social, values and other needs, which increases life quality of GBSCs employees and their family members (ABSL, 2016-2020).

Offshoring – moving a facility/firm to a more appropriate area as a major strategic decision. Such movements are offshoring when they imply crossing a national border (Piatanesi, Arauzo-Carod, 2019).

Payroll Benefits – in terms of GBSCs it is salary, bonuses and other financial benefits included into the monthly salary (ABSL 2016-2020).

Service Level Agreement – the equirements from a business standpoint, which could be documented and incorporated into a simple letter of understanding (Marciniak, 2013a).

Servitization of Econony – author of this dissertation uses this term to define the analyzed increasing comparative weight of services in the economy, swith from manufacturing economy to services economy.

Sustainability – approach based on environmental stewardship, social responsibility governance, strategy and execution (Hedstrom, 2018), commitment related to enhancement of people, planet life and profit.

Visegrad Countries – cultural and political alliance of four countries of Central Europe – the Czech Republic, Hungary, Poland and Slovakia (Sass et al, 2018).

INTRODUCTION

The relevance of the topic. Phenomenon of service sector foreign direct investment has become widely examined subject of discussion in community of the researchers due to the growing relative weight of service sector in the world economy prompted by globalization and technology development processes. Constantly changing and complex international business environment stimulates the emergence and development of new business forms, which, from one side, are designed to fulfill corporate value adding needs, and from another side, impact the change in the international economy structure.

Despite the fact that there is number of researches, which aim is to cover service sector foreign direct investment problematic aspects and seek for the ways how to measure economic impact of this phenomena, there is a lack of clarity in Global Business Services Centers segment. This is mainly the consequence of the recent rapid development of Global Business Services Centers in the business community, but novelty of this phenomenon in the scientific community. Increasing number of Global Business Services Centers changes the business geography and inevitably leads to the changes in the structure of host country economy. However, it is important to evaluate how these changes manifest and which particular economic indicators of the host country are mostly being affected due to the emergence and development of Global Business Services Centers.

Frequently analyzed topics such as development, peculiarities and content of service sector foreign direct investment, evaluation of Global Business Services Centers impact on microeconomic indicators and managerial aspects and other related topics found in the scientific literature, does not solve the problem of measuring the Global Business Services Centers impact on macroeconomic indicators in the host country.

Therefore, the evaluation of Global Business Services Centers impact on state macroeconomic indicators is relevant in the formation of provisions of host country investment promotion economic policy. It could help to improve host country economic policy toward this segment of foreign direct investment, to know which macroeconomic indicators are being influenced the most and what directions should be set and implemented for better macroeconomic value in the future.

The level of the problem examination. Despite the fact that the attraction of Global Business Services Centers became prerogative in the most Central and Eastern

Europe Countries, where Global Business Services Centers sector is named as priority sector declared by the investment promotion agencies, there is no holistic approach for measurement of the macroeconomic effects, which this attraction brings to the countries. The sporadic Global Business Services Centers attraction actions rather than purposeful attraction strategy according to known impacted macroeconomic outcomes does not bring the value, which it can bring and the macroeconomic outcomes of Global Business Services Centers are usually being undervalued.

Scientific literature, unfortunately, does not fully answer the Global Business Services Centers macroeconomic exposure measurement questions, too. The number of scientific literature analyzed in this dissertation aim to reveal the preconditions and consequences of increasing comparative weight of services in the world economy without separation of such segment as Global Business Services Centers. The World Bank (2020), World Investment Report (2015-2017), European Commission (2014 a, b), Herbert, Paraskevas (2012), Plaisier et al (2012), Sauvant et al (2010) and others analyze the paths of servitization of economy and explain the main trends in service sector and service sector foreign direct investment. Deloitte (2015 a, b), European Commission (2014 a, b) and others emphasize the changing and complex context of business services as well as emergence of new business forms. Positive or negative nature of change in the economic structure both of host and home countries are emphasized by the following researchers: Sass et al (2018), Kalašinskaitė (2009), Bellak et al (2008), Gopinath, Echeverria (2004) and others.

In the light of the servitization of the economies, some controversial discussions regarding the service and manufacturing sector researches separation and interpretation were noticed. According to Dunning, McQueen, 1982, Casson, 1990 and others, service and manufacturing sectors determinants are similar and fundamental foreign direct investment theories based on manufacturing foreign direct investment can be applicable in services. However, according to more recent researches (Sass et al, 2018; Barkauskaitė, Naraškevičiūtė, 2016; Ruplienė, 2013; Kalašinskaitė, 2009 and others) impact of foreign direct investment on state economy can be different depending on sector and it is purposeful to analyze foreign direct investment aspects by separating sectors or even economic activities. Thus, taking into account the more recent researches, the impact of Global Business Services Centers on macroeconomic indicators have to be separately measured according to this view.

There is a clear view seen among researchers, which author of this disserta-

tion supports: gross domestic product – the main macroeconomic indicator, which is being impacted by foreign direct investment according to many researchers (Čičak, Sorić, 2015; Kalašinskaitė, 2009, Ruplienė, 2013; Garšvienė, 2008 and others) cannot reflect the real economic situation and should be complemented with different indicators, especially with those, which measure quality of life (Servetkienė, 2013; Pukelienė, Starkauskienė, 2011; Gruževskis et al, 2009; Stiglitz et al, 2009 and others), labor market, spending and consumption, migration, cross-sectorial growth, regional development indicators etc. (Sass et al, 2018; Business Services in the Czech Republic, 2017; Business Sevices Sector in the Czech Republic by ABSL, 2016, 2017, 2019, 2020; Lithuania's Business Services Report, 2016-2020; Business Services Centers in Hungary, 2017-2020; Business Services Sector in Poland by ABSL, 2014-2020; Business Services Sector in Romania by ABSL, 2018-2020; Shared Service & Business Process Outsourcing Centers in Slovakia, 2017-2020; Kuzior, Sobotka, 2019; Ruzsa, 2018; Milewska, 2018; Ślusarczyk, 2017; Skowroński, 2017; Tamošiūnienė, Kislovska, 2015; Wirtz et al 2015; Zenasni, Benhabib, 2013; Mucuk, Demirsel, 2013; Laskienė, Pekarskienė, 2011 and others).

Four main preconditions and consequences of service sector and service sector foreign direct investment were noticed in scientific literature: service sector investment liberalization, promotion and facilitation (World Investment Report, 2015-2017); agglomeration and scale economies (World Development Report, 2009; Smith, 1776 edited by Soares, 2007); reshaping of economic geography (Ruzsa, 2018; Ślusarczyk, 2017; Tamošiūnienė, Kislovska, 2015; Cushman & Wakefield, 2015; Combes et al, 2012; Eichengreen, Gupta, 2012; Combes et al, 2011; Puga, 2010; Gospel, Sako, 2010; Jensen, 2009; World Development Report, 2009; Dunning, Lundan, 2008; Maskell, Malmberg, 1999; Dunning, 2000; Chandler, 1977; Hymer, 1960 and others); evolution of efficiency-oriented business internationalization forms such as Global Business Services Centers (Invest Lithuania, 2016-2019; OECD, 2015; Tamošiūnienė, Kislovska, 2015; Wirtz et al, 2015; European Commission, 2014 a, b; World Development Report, 2015 and others).

Theoretical reasoning of Global Business Services Centers as economic phenomenon was noticed in the researches, where the following aspects were analyzed: conceptual framework of Global Business Services Centers (ABSL, 2019; Kuzior, Sobotka 2019; Deloitte, 2016 a, b; Accenture, 2015; Cushman & Wakefield, 2015; PwC, 2015; Wang, 2015; Wirtz et al 2015; Bondarouk, 2014; Marciniak, 2014; Rudzioniene,

Sakalauskiene, 2014; Strikwerda, 2014; Marciniak, 2013; Huber, Danino, 2012; Deloitte, 2011; Miles, 2011; Oshri et al, 2011; Gereffi, Fernandez-Stark, 2010; Bedell, 2010; Kroll, 2005; Schulman et al, 1999 and others), increasing scope and value of Global Business Services Centers (ABSL, 2019; Deloitte, 2015 a, b; BearingPoint, 2011 and others), scientific exploration level of Global Business services Centers in managerial and microeconomic literature (ABSL, 2019; Deloitte, 2015-2016 a, b; Cushman & Wakefield, 2015; Kienast, Rudy, 2015; SSON Analytics, 2017; UNCTD, 2015; Fersht, Brown, 2014; KPMG, 2015; Knol et al, 2014; PwC, 2014; Marciniak, 2013a; Wenderoth, 2013; Accenture, 2011; BearingPoint, 2011; Fersht et al, 2011; IBM, 2011; Pérez, 2008; Redman et al, 2007; CIPFA, 2006; Ulbrich, 2006; Seddon, 2003; Kagelmann, 2001; Aguirre et al, 1998 and others), scientific exploration level of Global Business Services Centers in macroeconomic literature (Kuzior, Sobotka, 2019; Ruzsa, 2018; CEE Investment Report, 2018; Ruzsa, 2018; Milewska, 2018; Ślusarczyk, 2017; Skowroński, 2017; Biernat-Stawecka, 2016; Tamošiūnienė, Kislovska, 2015; Wirtz et al, 2015; Marciniak, 2014 and others), interconnectedness between Global Business Services Centers and macroeconomic indicators expressed by multiplier effect (Skowroński, 2017; Invest Lithuania, 2015; ABSL, 2011; Micek et al, 2010 and others).

It should be stressed that the majority of the researchers emphasize the managerial or microeconomic aspects of Global Business Services Centers. What is more, the insignificant number of researches, which involve analysis of macroeconomic indicators, usually cover some descriptive data and empirical testing is being limited. Moreover, no multiplier effect is being taken into consideration since the majority of Global Business Services Centers researches on macroeconomic level cover one or few separate macroeconomic indicators analysis.

The researchers, who parallel one or few macroeconomic indicators with Global Business Services Centers conclude that there is a need to make more detailed researches. However, such research limitation as lack of statistical data for Global Business Services Centers, which is comparatively new phenomenon, complicates the research and due to this reason qualitative research methods are usually being used instead of quantitative.

The researchers view that traditional macroeconomic indicators do not always reflect the real state of the economy and insignificant number of the researches, which analyze Global Business Services Centers impact on macroeconomic indicators, as well as lack of multiplier effect inclusion into existing researches, also prove the relevance

and novelty of the dissertation topic. This dissertation intention is to acquire wider cognition of Global Business Services Centers phenomenon and with connections to multiplier effect to answer the question how Global Business Services Centers impact the macroeconomic indicators in Central and Eastern Europe countries.

The scientific problem: what is the Global Business Services Centers impact on macroeconomic indicators and how to evaluate this impact.

The object of the research: Global Business Services Centers impact on macroeconomic indicators.

The aim of the research: based on scientific Global Business Services Centers phenomenon literature analysis to develop and empirically test the model, which evaluates the impact of Global Business Services Centers on macroeconomic indicators in Central and Eastern Europe countries.

In order to achieve the target, the following **objectives of the research** were set:

1. To analyze contents and specific of Global Business Services Centers and level of investigation of Global Business Services Centers phenomenon in economic science context.

2. To expose the peculiarities of Global Business Services Centers macroeconomic income measurement criteria as well as interconnectedness between Global Business Services Centers and macroeconomic indicators expressed by multiplier effect.

3. Based on the analysis of macroeconomic indicators and multiplier effect manifestation specifics, to develop and substantiate the model, which would evaluate the impact of Global Business Services Centers on macroeconomic indicators in Central and Eastern Europe countries.

4. To distinguish and justify the main components of the structure of modelling evaluation of Global Business Services Centers impact on macroeconomic indicators in Central and Eastern Europe countries.

5. To test the developed model empirically by evaluating the impact of Global Business Services Centers on macroeconomic indicators in Central and Eastern Europe countries, to reveal research limitations and present research findings and recommendations.

The methods of the research. To reveal the content and specifics of foreign direct investment in the service sector, to expose the role of the Global Business Services Centers segment as an economic phenomenon as well as to distinguish macroeconom-

ic indicators, which dynamics are influenced by Global Business Services Centers, the methods of scientific literature analysis and synthesis, qualitative comparative analysis, grouping, summarization, experts evaluation were used.

To develop the model, which would evaluate the impact of Global Business Services Centers on macroeconomic indicators in Central and Eastern Europe countries, qualitative comparative analysis, summarization, grouping of affected macroeconomic indicators, multiplier effect evaluation were done and modelling method was used.

The following research methods were used to evaluate the impact of Global Business Services Centers on macroeconomic indicators in Central and Eastern Europe countries: secondary data analysis of mainly economic practice oriented literature prepared by investment promotion agencies or intermediaries – business services experts, comprehensive qualitative comparative analysis of each of distinguished by author macroeconomic indicators group influenced by Global Business Services Centers in Central and Eastern Europe countries; the combination of comparative analysis and descriptive statistics of the following indicators was done: 1. *Labor market indicators*: employment numbers in Global Business Services Centers, annual employment growth in Global Business Services Centers, Global Business Services Centers/total employment ratio, increase in number of Global Business Services Centers and their parallels to total unemployment and youth unemployment rates, average monthly salary in Global Business Services Centers and on national level, employers and employees contribution to job related taxes (Global Business Services Centers/social security funds collected contributions ratio), some other labor market indicators aspects such as labor market demands changes, employment restructuring (new way of working, development of new competencies needed for business, demand for new professions and skills) and other labor market indicators specifically occurring in Central and Eastern Europe countries. 2. *Spending and consumption indicators*: projected additional annual gross disposable income created due to higher average salary in Global Business Services Centers in 2020 (per one employee per year), projected additional annual gross disposable income created due to higher average salary in Global Business Services Centers in 2020/selected household expenditure ratio, gross saving rate of households impacted by employment in Global Business Services Centers. 3. *Migration indicators*: emigration rate and re-emigration rate, which can be influenced by increasing number of dignified working places in existing and new Global Business Services Centers. 4. *Life quality indicators*: comparison of payroll and non-payroll benefits offered to

Global Business Services Centers employees, which influence Global Business Services Centers employees and their family members life quality. 5. *Cross sectorial growth indicators:* real estate market growth influenced by building and rent of premises for developing and new Global Business Services Centers including office market snapshots and built stock occupied by Global Business Services Centers employees, cleaning market revenue influenced by Global Business Services Centers, other secondary services providers potential growth stimulated by Global Business Services Centers and other. 6. *Regional development indicators*: main capital and non-capital Global Business Services Centers locations, rising stars cities current situation, role and perspectives, location quotient as expression of Global Business Services Centers locations specialization in CEE countries. 7. *Gross Domestic Product related indicators*: employment and its components as the most important Gross Domestic Product aggregate, spending/consumption and cross-sectorial growth as subsequent GDP components stimulated by employment in Global Business Services Centers; modelling of the evaluation of Global Business Services Centers impact on macroeconomic indicators in Central and Eastern Europe countries; forecasting/projections: projected average monthly salary in Global Business Services Centers, Global Business Services Centers employment projections, projected additional gross disposable income created due to higher average salary in Global Business Services Centers in Central and Eastern Europe countries; evaluation of multiplier effect according to methodology developed by Economic Development Research Group (direct, indirect, induced and dynamic effects of Global Business Services Centers) and according to the evaluation model presented by author (quantitative, qualitative and other multiplier effect expressions); one-on-one interview with the head of SEB Global Services Vilnius and the head of services in Technopolis and business case study of SEB Global Services as example of multiplier effect of Global Business Services Centers impact on macroeconomic indicators in Lithuania; survey of Lithuanian, Polish and Slovakian experts from national investment promotion agencies; personal author's observations according to the experience collected while working in one of the most significant in size and scope Global Business Services Center located in Lithuania, Vilnius; panel data analysis (fixed, random effects and pooled OLS models) for evaluation of Global Business Services Centers impact on selected macroeconomic indicators based on available statistical data.

The limitations of the research. Increasing investors' attention to CEE countries as destinations for GBSCs in Europe encouraged the author to choose this region

as the context for the research. Hungary, Lithuania, Poland, Romania and Slovakia were included into the research according to scarce, but available statistical data and macroeconomic background similarity. Subject to data availability, research period covers from 4 to 13 years (2007-2019) depending on country and analyzed macroeconomic indicator. Other limitations of the research distinguished by the author are: fragmentation of GBSCs literature and lack of prior research studies on the topic, differences in definition of GBSCs phenomenon, lack of available and comprehensive statistics on the topic, lack of access to sensitive GBSCs data, predominance of secondary data analysis, lack of interest of experts to contribute to research.

The logical structure of the dissertation. The dissertation consists of introduction, three main parts, conclusions and recommendations, references, appendixes and summary in English and Lithuanian languages. The dissertation is 285 pages (496 pages including references, appendices and summary). The logical structure of the dissertation is presented in the Figure 1.

The first part of the dissertation presents the theoretical aspects of Global Business Services Centers as the segment of service sector foreign direct investment found during scientific literature analysis. First of all, preconditions and consequences of increasing comparative weight of services in the world economy are distinguished. Secondly, service sector foreign direct investment development induced changes in the structure of global economy are discussed. Thirdly, changing geographical economy of the services sector, the peculiarities of complex environment of business models in the services sector and the emergence of new business models such as Global Business Services Centers is analyzed. Fourthly, the conceptual framework of Global Business Services Center and scientific discussions related to Global Business Services Center phenomenon are presented, after what author of this dissertation offers generalized Global Business Services Center definition. Fifthly, the analysis of increasing scope and economic value of Global Business Services Centers is done. Sixthly, the scientific exploration level of Global Business Services Centers in economic (micro and macro) and managerial literature is revealed. Lastly, the interconnectedness between Global Business Services Centers and macroeconomic indicators expresses by multiplier effect is revealed.
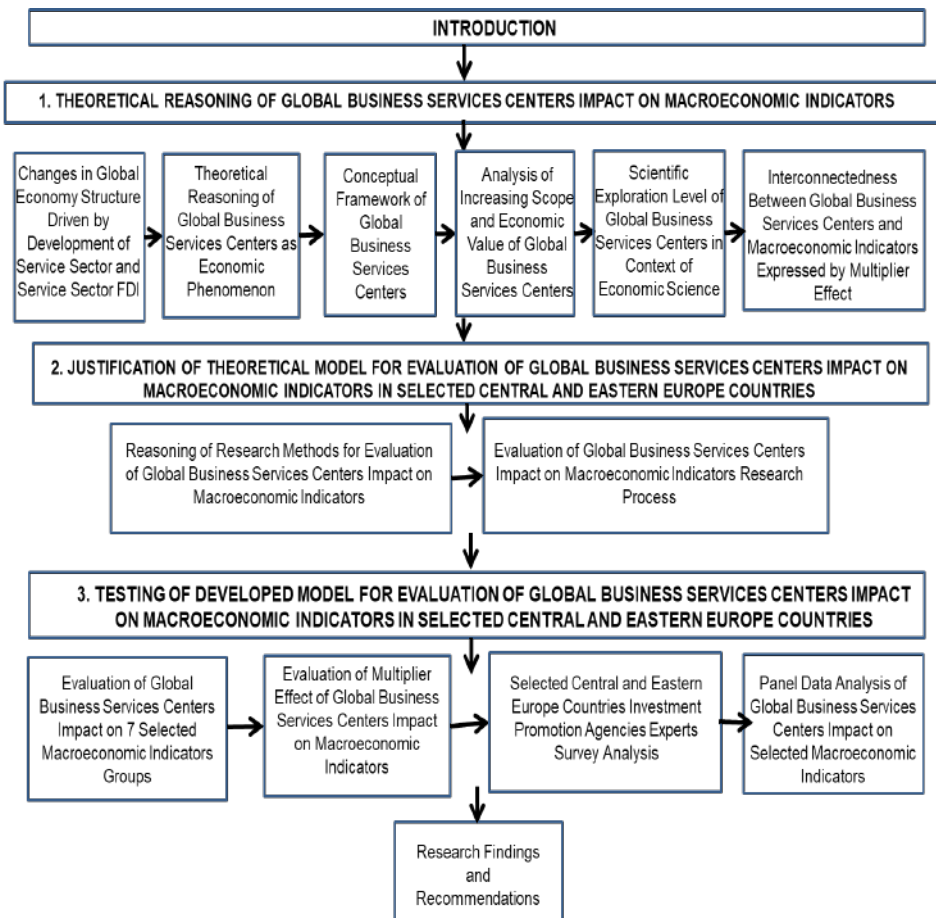
Figure 1. *Logical Structure of Dissertation*

Second part of the dissertation concentrates on the structure of evaluation of Global Business Services Centers impact on macroeconomic indicators in Central and Eastern Europe countries, according to which research in third part of the dissertation is done. First of all, the Global Business Services Centers macroeconomic outcomes measurement methods are analyzed and the applicable research methods for the dissertation topic are distinguished. Secondly, the model for evaluation of Global Business Services Centers impact on macroeconomic indicators in Central and Eastern Europe

Countries is presented and the model is being complemented with expression of Global Business Services Centers macroeconomic outcomes multiplier effect manifestation. Thirdly, the structural components of the research of evaluation of Global Business Services Centers impact on macroeconomic indicators in Central and Eastern Europe Countries are presented. The structural components are the following: aim of the research, sample size, research period, research context, main research data sources, logical structure of the research and research methods used for each logical part of the research. Fourthly, the reasoning of Central and Eastern Europe countries as the context for the model of evaluation of Global Business Services Centers impact on macroeconomic indicators is presented. Fifthly, the research limitations are distinguished and described.

Third part of the dissertation presents the evaluation of Global Business Services Centers impact on macroeconomic indicators in Central and Eastern Europe countries. First of all, the evaluation based on seven distinguished macroeconomic indicators groups is made. Also, general theoretical evaluation of multiplier effect of Global Business Services Centers impact on macroeconomic indicators based on theoretical statements and scientific justification of direct, indirect, induced and dynamic multiplier effects is presented. After general theoretical evaluation of multiplier effect SEB Global Services Vilnius business case analysis is performed as example of multiplier effect of Global Business Services Centers impact on macroeconomic indicators in Lithuania. Central and Eastern Europe countries investment promotion agencies experts survey analysis complements the research. Also, quantitative Global Business Services Centers impact on selected macroeconomic indicators expression was presented according to panel data analysis (fixed, random effects and pooled OLS models). Based on the obtained research results, the research conclusions and recommendations are presented.

The scientific novelty of the dissertation, theoretical significance.

1. <u>This dissertation enhances the scientific cognition of Global Business Services Centers as economic phenomenon.</u> The deeper cognition of comparatively new Global Business Services Centers phenomenon presented in this dissertation, analysis of its place in the whole investment chain and resumptive definition of the phenomenon offered by the author can be a good starting point for the researchers to include the Global Business Services Centers into their field of study and increase the number of the researches on the topic. This is especially important to solve the issue of scarcity

of researches, which analyze Global Business Services Centers from (macro)economic prospective.

2. Existing scientific literature analysis shows that there is a number of researches, which aim is to cover service sector foreign direct investment problematic aspects and seek for the ways how to measure economic impact of this phenomena and limited number of researches, which cover microeconomic or managerial aspects of Global Business Services Centers. However, there is a very limited number of researches, where macroeconomic indicators are paralleled with the Global Business Services Centers. This dissertation includes the evaluation of Global Business Services Centers impact on macroeconomic indicators and deepens the research level of Global Business Services Centers impact on macroeconomic indicators.

3. The evaluation of scientific exploration level of Global Business Services Centers phenomenon in the context of economic science performed in this dissertation revealed the interdisciplinarity of the topic. It was found that scientific exploration level of Global Business Services Centers phenomenon is more advanced in management science than in economic science. What is more, microeconomic Global Business Services Centers aspects, which existing researches cover, are closely related to the problematic Global Business Services Centers aspects analyzed in management science literature. This dissertation orientation towards paralleling Global Business Services Centers with macroeconomic indicators brings broader view on understanding of the manifestation of the economic value of Global Business Services Centers and extends the interdisciplinarity value as well. In the light of the fact that Global Business Services Centers is comparatively new phenomenon and the researches related to them usually cover only some descriptive data and limited empirical testing or no empirical testing at all due to lack of statistical data on the topic, the usage of combination of qualitative and quantitative research methods brings the possibility to evaluate the (macro)economic value of Global Business Services Centers at the current stage of evolution of this phenomenon.

4. According to scientific literature analysis performed in this dissertation, there is a lack of multidimensionality of evaluation of impact of GBSCs on macroeconomic indicators since the existing researches usually parallel one or few separate macroeconomic indicators with GBSCs and usually no multiplier effect evaluation is being done. This dissertation distinguishes seven macroeconomic indicators groups with elaborated examples of their manifestation in Global Business Services Centers context. Author

presents the Global Business Services Centers macroeconomic outcomes evaluation model and complements it with multiplier effect expression as well as panel data analysis. The presented model could be useful instrument for evaluation of the macroeconomic outcome of GBSCs and other newly appearing business forms.

The practical (applied in practice) significance of the dissertation.

1. Dissertation is important not only in scientists community, but also on academic level since transformations, which Global Business Services Centers bring, have to be mirrored in the study programmes.

2. Dissertation could be useful for practitioners related to Global Business Services Centers to broaden their view and provide possible ideas or express the practical needs, which could be tested scientifically.

3. The increasing number of the researches related to the dissertation topic could raise the awarness of the need of collecting more statistical information about Global Business Services Centers on the country level and establishment of the organisations, forums or support other initiatives, which would concentrate on economic evaluation of the impacts of Global Business Services Centers. Surveyed experts from Lithuanian, Polish and Slovakian investment promotion agencies agree that there is lack of country level data and analysis of the macroeconomic impact of Global Business Services Centers industry (expert from Slovakia), there are not so many studies covering the dissertation topic (expert from Poland) and the dissertation topic is useful since the more studies and data there is about Global Business Services Centers impact on state economy, the more efficiently investment promotion agencies can work and educate the government and general population on how Global Business Services Centers contribute to improving citizens' lives (expert from Lithuania).

4. The broadening of scientific exploration level of Global Business Services Centers impact on macroeconomic indicators as well as empirical testing results made in this dissertation as well as any further related researches could be useful for legislators and provide decisive arguments for one or another direction of state economic policy towards further Global Business Services Centers attraction.

The defendable claims of the dissertation.

1. The usage of solely quantitative research methods is limited due narrow scientific exploration level of Global Business Services Centres phenomenon and scarcity, inhomogenity of the Global Business Services Centers statistical data. Therefore, combination of descriptive, cognitive exploring, qualitative research methods and quanti-

tative research methods are the best available methods to reveal Global Business Services Centers impact on macroeconomic indicators at current stage of evolution of this phenomenon.

2. Global Business Services Centers cause different macroeconomic outcomes depending on analyzed macroeconomic indicators group (labor market indicators, spending and consumption indicators, migration indicators, life quality indicators, cross-sectorial growth indicators, regional development indicators, GDP related indicators), but these macroeconomic indicators are closely interconnected.

3. The evaluation of the impact of Global Business Services Centers on separate macroeconomic indicators does not reflect the actual extent of the impact, therefore the evaluation should be comprehensive, multidimensional process incorporating variety of interconnected macroeoconomic indicators and evaluation of their multiplier effects.

Scientific publications on the subject matter of the dissertation.

1. Tamošiūnienė, R., Kislovska, A., Kazlauskienė, E., Gankova, T. (2016). *Economic Aspects of Increasing Value and Scope of Shared Services Centres*. 9th International Scientific Conference "Business and Management 2016". Vilnius Gediminas Technical University, May 12-13, 2016, Vilnius, Lithuania. eISSN 2029-929X. eISBN 978-609-457-921-9. Article ID: bm.2016.75. http://dx.doi.org/10.3846/bm.2016.75

2. Kislovska, A., Tamošiūnienė, R. (2016). *Economic Multiplier Effect of Shared Service Centres*. Scientific journal Ekonomika a management 4/2016, Faculty of Business Administration, University of Economics, Prague.

3. Kislovska A., Tamošiūnienė R. (2017). *Employment Restructuring Enhanced by Shared Service Centres*. UNITECH 2017-Gabrovo, 17-18 November 2017, GABROVO : international scientific conference, Vol. IV : proceedings. Gabrovo: University publishing house "V. APRILOV" – GABROVO, 2017. ISSN 1313-230X, p. 126-130. [M.kr.:S 003; S 004]

4. Kislovska A., Tamošiūnienė R. (2022). *Modelling Evaluation of Macroeconomic Outcomes Stimulated by Global Business Services Centers in Central and Eastern Europe Countries*. Transformation in Business & Economics (TIBE), Vol. 21, No 1 (55), pp. 149-168.

Presentations at scientific conferences on the subject matter of the dissertation.

1. Tamošiūnienė, R., Kislovska, A., Kazlauskienė, E., Gankova, T. (2016). Eco-

nomic Aspects of Increasing Value and Scope of Shared Services Centres. 9th International Scientific Conference "Business and Management 2016". Vilnius Gediminas Technical University, May 12-13, 2016, Vilnius, Lithuania. eISSN 2029-929X. eISBN 978-609-457-921-9. Article ID: bm.2016.75. http://dx.doi.org/10.3846/bm.2016.75

2. Kislovska A., Tamošiūnienė R. (2017). *Employment Restructuring Enhanced by Shared Service Centres*. UNITECH 2017-Gabrovo, 17-18 November 2017, GABROVO : international scientific conference, Vol. IV : proceedings. Gabrovo: University publishing house "V. APRILOV" – GABROVO, 2017. ISSN 1313-230X, p. 126-130. [M.kr.:S 003; S 004]

1. THEORETICAL REASONING OF GLOBAL BUSINESS SERVICES CENTERS IMPACT ON MACROECONOMIC INDICATORS

Modelling of evaluation of Global Business Services Centers (hereafter – GBSCs) impact on macroeconomic indicators in Central and Eastern Europe countries (hereafter – CEE countries) requires the theoretical reasoning of GBSCs impact on macroeconomic indicators. Author of this dissertation distinguishes the following theoretical aspects, which need to be analyzed: the preconditions and consequences of increasing comparative weight of services in the world economy, service sector foreign direct investments (hereafter – FDI) development induced changes in the structure of global economy, the changing geographical economy of the services sector, the peculiarities of complex environment of business models in the services sector and the emergence of new business models such as GBSCs, the conceptual framework of GBSCs and scientific discussions related to GBSCs phenomenon, the analysis of increasing scope and economic value of GBSCs, the scientific exploration level of GBSCs in economic and managerial literature together with the GBSCs macroeconomic measurability problematic aspects and the revealing of interconnectedness between GBSCs and macroeconomic indicators expressed by multiplier effect.

1.1. Changes in Global Economy Structure Driven by Development of Service Sector and Service Sector Foreign Direct Investment

There is clearly seen path of servitization of economy among scientific researches on changes in world economy structure. First of all, world service sector development is seen as the main trigger for constantly changing behavior of economic subjects, who tend to make economic decisions in favor of services sector, in which conditions for boundaryless activities are more approachable due to specific of mostly intangible, knowledge based, human based assets and easier reallocation of them and also managing them at a distance.

The shift from manufacturing to service economy demands an adjusted approach to changing economic environment and more comprehensive analysis of preconditions and outcomes of services oriented economic decisions. Changes in FDI structure, flows and dynamics are seen as one of the outcome of development of ser-

vices sector. FDI development influenced by services sector development shows the increasing importance of analysis of services sector FDI preconditions, outcomes and impact on state economy (see Figure 2 below).
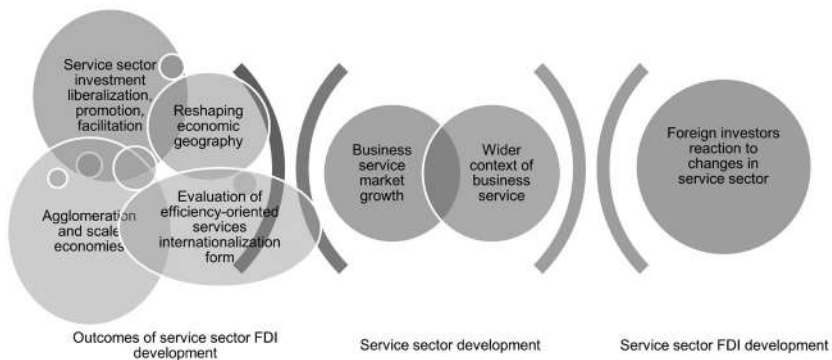
Figure 2. *Changes in Global Economy Structure Driven by Development of Service Sector and Foreign Direct Investment in Services*
Source: *compiled by author*

Service sector and service sector FDI development – number of discussions and researches on the topic of shift from manufacturing economy to service economy and European Commission (2014 a, b) emphasizes that structural change towards a more knowledge intensive economy cannot be fully understood without looking at the simultaneous change in most European countries from an industry based economy to a service-based economy. Already by the early 1990s, it was becoming apparent that the investment was rapidly shifting from manufacturing to services. The boom in manufacturing investments was coming to an end in the developed economies and was being replaced by "front and back" office service functions (Sauvant et al, 2010).

The world business services market is estimated to exceed € 3.5 trillion and to have doubled in size in the last decade (Herbert, Paraskevas, 2012). In Europe alone business services account for € 1.5 trillion gross value added and provided jobs for 20 million people, across more than 4 million enterprises (Plaisier et al, 2012) and according to World Bank statistics, services value added accounts significant part of the world economy showing the further potential to grow (see Figure 3 below).
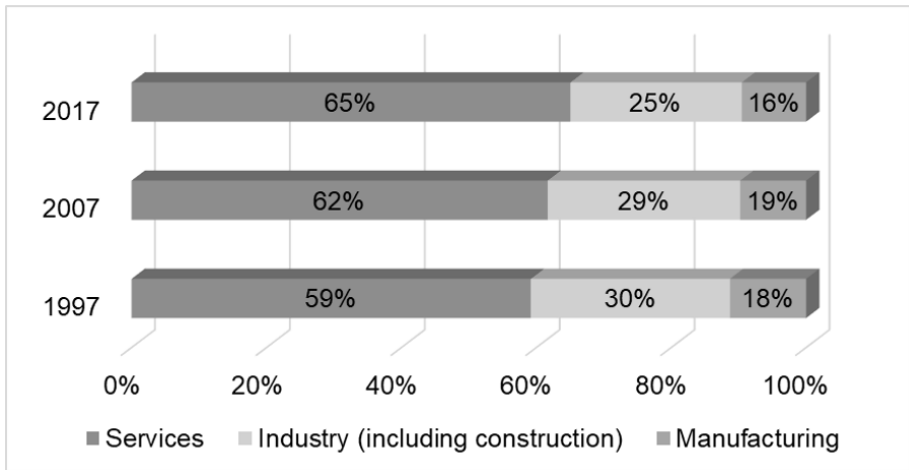
Figure 3. *Sectoral Development of the World Economy: Value Added (% of GDP)*
Source: *The World Bank, accessed on 2020-05-19[1]*

European Commission (2014 a, b) emphasizes that such factors as the changing nature of innovation, the changing structure and partnership and increasing levels of cross-organizational collaboration encourage increase of number of networks of firms collaborating to deliver business services and new organizational forms are being created in result of such interactions. Hence, the EU corporate law framework must be able to accommodate the reality of changing context for business services (see Figure 4).

Business Services Outlook (Deloitte, 2015b) stresses that there are certain, ongoing and disruptive market drivers for business service. Skills shortage, globalization, data analytics, technology cost pressures, mobility, mergers and acquisitions activities and socio-economic trends are seen as ongoing market drivers, which can lead to the further development of business services market.

There is number of researchers, who analyze recent trends in global investment market and evaluate the impact of investments on economy of particular geographical region as well as trigger global debates on the future of the international policy environment for cross-border investment. FDI refers to one of the mostly used indicator to analyze the changes in the global economic structure.

---

1   Author is not explaining the descrepancies of the data presented by the World Bank (percentage >100%), which could occure due to differencies in calculation, data collection, rounding etc. These values are approximate, but accurate enough to make the generalization about sectoral development. The main tendency, but not the exact calculation method is presented in the Figure 3.
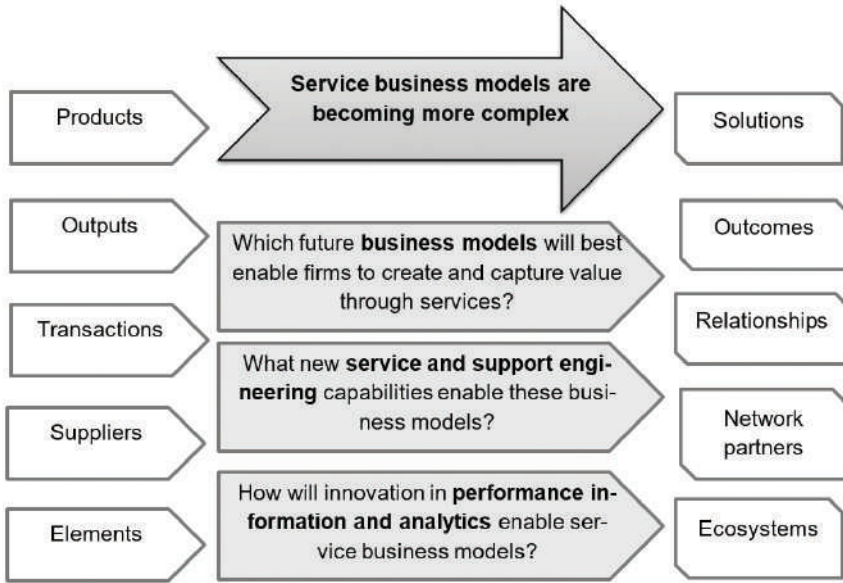
Figure 4. *The Changing Context for Business Services*
Source: *European Commission, 2014 based on Neely et al, 2011*

Some researches distinguish services sector FDI to a limited extend by conclud-ing that service sector FDI has grown dramatically over recent decades (The World Investment Report, 2015). Other researches analyze service sector FDI on a more de-tailed level (Sass et al, 2018 and others). According to World Investment Report 2017, by 2015, about two thirds (around 66 %) of global FDI stock was concentrated in the services sector, in line with its share in the world economy. Manufacturing and the primary sector accounted for 26 % and 6 %, respectively. The long-term shift toward services together with increase in total inward FDI stock value have been noticed. FDI stock data by sector highlight the important role of services in global FDI (see Figure 5).

Many researchers conclude that FDI development is changing the economic structure of both host and home countries. The outcomes can be positive or negative,

nevertheless these outcomes inevitably provoke changes in the global economic structure (Gopinath, Echeverria, 2004; Bellak et al, 2008; Kalašinskaitė, 2009 and others).

Some researchers express the opinion that despite the fact that fundamental theories of FDI are mainly explained in manufacturing, most of the determinants tend to be similar in services, thus internationalization theories explain attributes typical to service sector and are applicable here as well (Dunning, McQueen, 1982; Casson, 1990 and others). According to other, more recent researches, impact of FDI on state economy can be different depending on sector (Kalašinskaitė, 2009; Barkauskaitė, Naračkevičiūtė, 2016 and others) and that it is purposeful to analyze FDI aspects by
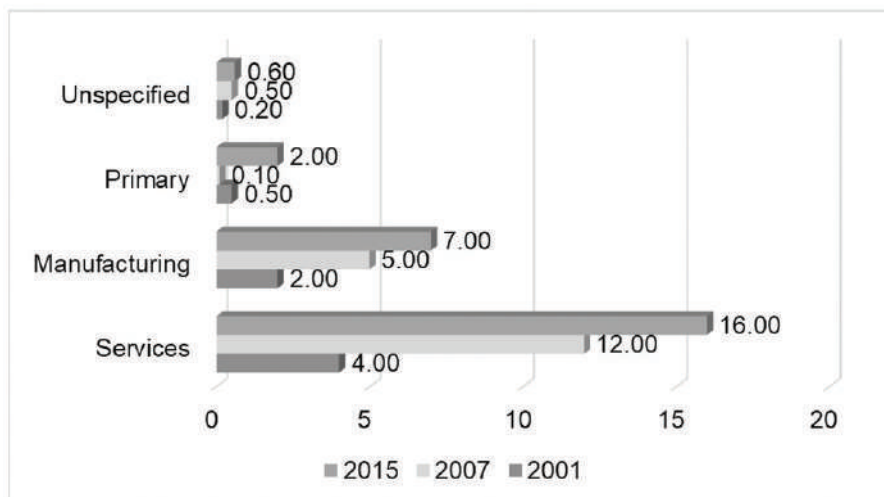
Figure 5. *Estimated Global Inward FDI Stock by Sector, 2001, 2007 and 2015*
(trillions of dollars)
Source: *World Investment Report, 2017*

What is more, the main indicator, which is being impacted by FDI, analyzed by majority of researches is traditional macroeconomic indicator – GDP (Sass et al, 2018; Čičak, Sorić, 2015; Kalašinskaitė, 2009; Ruplienė, Garšvienė, 2008 and others). Some researchers, however, argue that this indicator cannot reflect the real economic situation and should be complemented with different indicators, especially with those, which measure quality of life (Servetkienė, 2013; Stiglitz, el al, 2009 and others). Author

of this dissertation agrees that analysis of different macroeconomic indicators treated as GDP components, would be better expression of the real impact of FDI activities.

Some authors complement GDP indicator with labor productivity, unemployment rate, diffusion of technologies, human capital formation and international trade integration (Zenasni, Benhabib, 2013; Mucuk, Demirsel, 2013; Laskienė, Pekarskienė, 2011 and others) usually by choosing one of them and by not distinguishing economic sector. Iacob et al (2019), Wirtz et al (2015), noticed the important aspect of the increasing importance of service sector's contribution to the state economy, which is also mirrored in the world's employment statistics and sectoral growth. According to the author of this dissertation, it is significant aspect since author believes that GDP related indicators analysis shows the main tendencies, but when they are solely paralleled with the impact to state economy without complementing them with other macroeconomic indicators, they are not representative enough to reveal the real impact on state economy.

Author would like to complement the causes and outcomes of FDI by linking them with specifics of services sector and afterwards to concentrate on one of service sector FDI segments –GBSCs – and its impact on different macroeconomic indicators. The following **causes and outcomes of service sector and service sector FDI development can be distinguished:**

1. <u>Service sector investment liberalization, promotion and facilitation</u>, which lead to service sector and it's investment increasing comparative weight in the world economy. The shift towards services sector is being emphasized in World Investment Report (2015-2017) and it is being explained that FDI has continued in response to increasing liberalization in the sector, the increasing tradability of services and the growth of global value chains in which services play an important role. Particularly countries' investment policy measures continued to concentrate on directions toward investment liberalization, promotion and facilitation. It is also worth to mention that according to World Investment Report (2015), already in 2014 more than 80 % of investment policy measures aimed to improve entry conditions and reduce restrictions. Author believes that such investment policy orientation is a result of closer public-private partnership harmonized with long-term service sector development and increasing contribution to global economy as well as deeper evaluation of positive economic impact of FDI on state economy.

2. <u>Agglomeration and scale economies.</u> Concentration replaces dispersion and

this trend is highly noticeable in service sector FDI, where efficiency-oriented scale economies business solutions gain a decisive influence. The origins of these phenomena have been discussed by Scottish philosopher and political economist Adam Smith (1723-1790) in his work "The Wealth of Nations", published in 1776. Adam Smith was first to determine the benefits of dividing labor. He explained this occurrence in economics and emphasized that in the way, in which this business is now carried on, proper division and combination of different operations change the result derived from work – increase the productivity (Smith, 1776 edited by Soares, 2007). The benefits of producing large quantities in a single plant or place have increased dramatically since Adam Smith has presented his work.

Despite the fact that Adam Smith documented industrial development in his work, changes in economic structure and switch to service economy led to exploration of agglomeration and scale economies with emphasis on service sector. Service sector FDI exploit the benefits of access to world market, agglomeration and scale economies until today. As countries move to a more mature phase of development, their economies become more knowledge based and service oriented, the spatial concentration of activity also rises. Services are more spatially concentrated than manufacturing since they tend to use less land per employee, they can operate comfortably in high-rise buildings that economize on land and allow for high density (World Development Report, 2009).

3. Reshaping of economic geography. World Development Report (2009), which aim was to put strong emphasis on reshaping economic geography, stresses that developing economies are entering a new age of *agglomeration economies*. This changing behavior of economic subjects means that in the light of the facts that countries develop from agricultural to industrial to service-oriented production, entrepreneurs enter larger and denser settlements and business is carried out in a world where scale matters. Businesses enjoy scale economies, especially those associated with places. Proximity matters more, not just for access to markets for goods and services, but also for access to ideas. Similar view is being expressed by Combes et al (2012) by noting that existence of agglomeration economies is now established beyond reasonable doubt and much has been learnt about their magnitude (also referring to number of authors – Puga, 2010; Combes et al, 2011 and others).

Global competition, fast technology development, innovative solutions, simplified conditions to re-allocate mostly intangible resources, which are more specific for services providers than manufacturers, do not limit economic entities to look for

business solutions inside the country they operate in. Therefore, despite the fact that these economic entities, who decide to go international, usually prefer concentrated (centralized or based on scale economies) business forms of FDI, their location can be scattered.

In the large firm sector, over the period from the late 19th century onwards, the dominant trajectory was towards the internalization of various activities within the firm (Chandler, 1977). This involved both backward and forward integration and later diversification into sectors outside the firm's traditional activities. It also involved the internalization of business services (Gospel, Sako, 2010).

Different reasons for service sector internationalization and reshaping the economic geography are being emphasized by different researchers. Reasons of choosing FDI are interpreted according to different internationalization theories developed by researchers over many decades. Hymer (1960), who extended prevailing explanation of international capital movements relied exclusively upon a neoclassical financial theory of portfolio flows, in his explanation why multinational corporations (MNC) choose FDI, has emphasized MNCs location choice of FDI based on profitability by establishing foreign operations and minimizing competition by gaining control in different countries. Transaction Costs Theory (Williamson, 2009) concentrated on minimizing of costs in transactions and production as determinant of firm international boundaries – make or buy. Dunning (2000) in his Eclectic Paradigm Theory emphasized relationship between Ownership, Location and Internalization (OLI) advantages of the company putting emphasize on intangible resources of the company. However, the old theories have been becoming hardly applicable today in modern business environment and innovative internationalization solutions complement the old ones.

Economic geography literature also focuses on agglomeration and spatial clustering emphasizing significant concentration of related companies in similar location, which can strongly reinforce co-location by other companies (Maskell, Malmberg, 1999 and others). Dunning and Lundan (2008) also agree with this opinion by stating that the attraction of one company will generally make it more attractive to another company to co-locate in the same region.

In the light of the shift from manufacturing to services, there is also shift to outsource and offshore the business services seen (more detailed explanation will be further presented in this work). Business Process Outsourcing (BPO) and GBSCs in-

dex[2] offered by Cushman & Wakefield[3] (2015) and based on Foreign Direct Investment Markets and Tholons database, states that key parameters, which should be considered by re-locating business functions are costs (labor, building, inflation), risks (economic, corporate, energy) and conditions (labor force, business environment, time to first supply, IT infrastructure). Other researchers indicate the following reasons of reshaping of business geography by choosing different outsourcing/global business services centers models: recent advances in communication and information technology (including the internet) have reduced the need for face-to-face contact in the provision of many services and thereby removed one of the major barriers of services trade (Jensen, 2009); global business services stimulate service trade as these organizations comprised of services that use advanced information and communication technologies (ICTs) (i.e. financial, communication, computer, technical, legal, advertising and business services), which increasingly makes such services tradable across borders (Eichengreen, Gupta, 2012); companies intend to acquire new qualified labor and at the same time to increase quality simultaneously decreasing the running costs (Ruzsa 2018); to reduce the costs associated with the activities of the company as well as such motives as improvement of service quality and work efficiency, access to external resources, standardization process, focus on core competencies, concentration on innovation, improvement of customer orientation, exchange of internal capabilities, improvement of control (Ślusarczyk 2017); other.

Therefore, service sector FDI can be scattered in global market due to various reasons. However, the main trend in the evolution of the internationalization processes, especially with emphasis on service sector, can be connected with reducing costs, optimizing resources, continuous improvement and strengthening of competitive advantages through creation and expansion of networks, strengthening of communication through different innovative channels, global mindset, geographical and technology proximity, intelligent business operations (Tamošiūnienė, Kislovska, 2015 and others). These reasons can be also complemented with different labor conditions, less regulation, lower taxes, infrastructure and comparatively close cultural background and other.

4. <u>Evolution of value add oriented business internationalization forms – GB-</u>

---

2   In BPO and SSC index these BPO and SSC functions have been considered: Customer Contact Centers, Shared Services Centers, Technical Support Centers, Sales, Marketing, Support.
3   Cushman & Wakefield (C&W) - the world's largest privately-held commercial real estate services firm.

SCs as significant activity. Global business environment is experiencing continued increasing demand for improved service delivery models. High level of technology penetration ensures favorable conditions to cross-boundary solutions. Modern business environment of technologies penetration, networking and boundaryless opportunities encourages to explore innovative and efficiency-oriented business forms. Specific entrepreneurial mindset is the characteristic of modern business forms. Entrepreneurship is being defined as generation of value through the creation or expansion of economic activity, by identifying and exploiting new processes or markets (OECD, 2015).

As it was previously discussed in this work, scale economies of agglomerations (concentration), opposite to dispersion, proved its effectiveness. Taking this in mind, it is worth to emphasize that in a flexible enterprise sector, enterprises can expand, contract, enter and exit markets smoothly, and can innovate to capture new opportunities (World Development Report, 2015) and it means that there are more possibilities and probability for emerging of new innovative business forms. Global innovation-driven companies motivated by efficiency and continuous improvement reasons are looking for new opportunities to carry out their business operations in one place rather than leave them in different geographically located business units.

In the light of evolution of international business forms, agglomerations and scale economies, business leaders around the world try to find the business model, which would lead them into the future. For many of the world's leading companies, this means centralizing or outsourcing business services such as finance, accounting, IT, human resources, research and development and many other. Such business delivery model, when company transfers part of its activities to third party providers (usually abroad), has proved its effectiveness and various forms of BPO have increased in popularity (PwC, 2015).

European Commission (2014 a, b) also distinguishes one of the main changing business services trends in the structure of economy – outsourcing (where organizations outsource activities that are seen as non-core to their own operations). Some practitioners (for instance, the interviewed by the author head of SEB Global Services Vilnius) argue that nowadays hyper competition conditions and increased operating costs forced them to make changes in the whole value chain and centralize more and more sophisticated, core business processes.

In summary, it can be said that the servitization changes in global economy structure and such preconditions or outcomes as service sector investment liberali-

zation, promotion and facilitation, scale economies with agglomeration, reshaping of the economic geography, encouraged the emergence of comparatively new value add oriented business form such as GBSCs. This business form, from one side, was created to fulfill the value add needs for the companies, but from another side, can be seen as both microeconomic and macroeconomic changes catalyst on the state level. Scientific exploration of evaluation of macroeconomic outcomes due to emergence and development of GBSCs, which are included into the object of this dissertation and are discussed in the Chapters below, should answer the questions which macroeconomic indicators have to be paralleled with GBSCs and how to evaluate GBSCs impact on these macroeconomic indicators.

1.2. Theoretical Reasoning of Global Business Services Centers as Economic Phenomenon

The theoretical reasoning of GBSCs as economic phenomenon in this scientific work was divided into four parts: conceptual framework of GBSCs, analysis of increasing scope and economic value of GBSCs, scientific exploration level of GBSCs in context of economic science and interconnectedness between GBSCs and macroeconomic indicators expressed by multiplier effect.

GBSCs as comparatively new business form and economic phenomenon is well known in business society, but not yet widely studied in the scientific society. Thus, deeper analysis of conceptual framework of GBSCs and definition of this phenomenon leads to deeper cognition of it and can be seen as a supportive tool to explore the economic nature of this phenomenon.

Also, according to author of this dissertation, increase in scope of GBSCs as business model inevitably increases the need of research on increasing economic value of this phenomenon. Therefore, author aims to distinguish the main indicators, which prove that the level of macroeconomic importance of GBSCs is increasing. Author presumes that GBSCs phenomenon macroeconomic impact should be more precisely evaluated by firstly measuring the scope and economic value of this phenomenon.

Revealing of scientific exploration level of GBSCs in context of economic science is important part of theoretical part of this dissertation. Author noticed that scientific exploration level of GBSCs phenomenon is more advanced in management science and in microeconomics. Management and economic science, which are both social

sciences, are closely connected, especially when investigating managerial decisions of the company, which can influence not only microeconomic, but also macroeconomic indicators. Therefore, author sees this as an interdisciplinary advantage rather than obstacle, which helps to reveal the currently relatively narrow scientific exploration level of GBSCs in context of economic science.

Due to increasing value and scope of GBSCs, the emphasis on not only currently more commonly studied separate macroeconomic indicators should be made, but on different macroeconomic indicator groups, their interconnectedness and macroeconomic outcomes of GBSCs expressed as multiplier effect. GBSCs implementation effect can be expressed through multiplier effect, which manifests in different interconnected macroeconomic indicators such as higher number of sophisticated working places in country, where GBSCs is located, changes in spending and consumption, migration, quality of life, cross-sectorial growth, regional development, GDP related indicators and other. These effects are being noticed not only in primary, but also in secondary, tertiary and further value chains. Therefore, author aims to distinguish different macroeconomic indicators groups, which can be influenced by GBSCs implementations and to reveal how macroeconomic multiplier effect manifests due to these implementations.

1.2.1. Conceptual Framework of Global Business Services Centers

Since FDI may be seen as an alternative economic strategy, adopted by the enterprises that invest to establish a new plant/office, or alternatively, purchase existing assets of a foreign enterprise (Eurostat, 2016), GBSCs can be defined as a form of FDI, when investors from one economy establish new office in another economy for business services centralization reason. GBSCs's place in the investment chain is presented in the Figure 6 below.
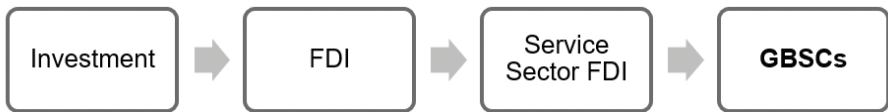
Figure 6. *Global Business Services Centers Place in Investment Chain*
Source: *compiled by author*

GBSCs can be named as relatively new way of organizing back-office functions,

which is being implemented across companies worldwide. This novelty has taken over as the most discussed topic in the last fifteen years and it is likely to stay with us for some time to come (Rudzioniene, Sakalauskiene, 2014).

There are different definitions explaining GBSCs[4], which can be divided into 3 groups:

1. Emphasizing organizational structure of such business model (Strikwerda, 2014; Bondarouk, 2014; Miles, 2011; Oshri et al, 2011 and others). This approach is related to defining GBSCs business model as change in organizational structure, which is mainly related to the specifics of centralized way of working of separate business units.

2. Emphasizing cost-related and value (economic) motives of chosing such business model (Miller, 1999; Kroll, 2005; Bedell, 2010 and others). The researchers emphasize the cost and other economic value of implementing GBSCs business model.

3. Emphasizing combination of organizational structure and economic motives (Schulman et al, 1999; Accenture, 2015; Keith et al, 2016; Wang, 2015; Huber, Danino 2012 and others). This approach combines both GBSCs defining specifics mentioned above.

It is important to note that despite the fact that the majority of authors link global services centers with business, GBSCs approach has become increasingly popular within both public and private sector organizations (Schwarz, 2014; Bergeron, 2003; Borman, 2008; Janssen & Joha, 2006; Wagenaar, 2006), where it is mostly deployed in large organizations, with a predominant focus on support processes (Ulbrich, 2006). According to Dubinas, Smilga (2009), Miles (2011), Civinskas, Dvorak (2011), McIvor, McCracken, McHug (2011), Civinskas, Laurušonytė (2012), Paagman (2015), GBSCs approach constitutes the „new age" of public sector management and there are specific countries examples, which show how this model can be incorporated in public services. However, this dissertation concentrates on business, not public sector GBSCs implementations.

It is worth to mention that close connections between outsourcing and GBSCs are seen in scientific and practice oriented literature and these definitions are frequently being paralleled. Despite the fact that some of the researches believe that GBSCs and BPO models should be differentiated since BPO is only related to function of one

---

4   Some authors use „shared service" or „shared service centers" definitions, but author of this dissertation will explain the reason for using the term of „Global Business Services Centers –"GBSCS"s (see below).

organization are being moved exclusively to external organization and GBSCs is just reorganization of the same company (Marciniak, 2013b and others), parallels between GBSCs and BPO are being set mainly due to statement that GBSCs can be owned and operated by the organization, outsourced to independent vendors or it can be mix of both internal and external outsourcing (Deloitte, 2011 and others). The majority of the researches emphasize that GBSCs is type of internal BPO (Cushman & Wakefield, 2015; PwC, 2015; Keith et al, 2016; Oshri et al, 2011; Rudzioniene, Sakalauskiene, 2014 and others) and author of this dissertation would see this view as the most accurate.

Offshoring is one more term paralleled with GBSCs mainly due to the reason that the offshore service industry refers to services that are conducted in one country and consumed in another (Gereffi, Fernandez-Stark, 2010). Expert from investment promotion agency Invest Lithuania surveyed by the author of this dissertation in one of the recent insights regarding GBSCs sector also notices the trend of European countries where offshoring is currently switching to nearshoring (transferring the business processes to geographically closer countries) especially to digitally advanced countries with strong and secure infrastructure such as Poland or Lithuania. It is seen as opportunity for GBSCs in Lithuania and other CEE countries since the majority of the companies, which established/establishes GBSCs here, are European countries. The aim of the author was to explain offshoring and nearshoring terms here to emphasize that despite the fact that these terms are being paralleled with GBSCs phenomenon, they cannot replace it. They are seen by author as related terms, which explains one or another economic geography reshaping decision made by GBSCs.

It is also worth to mention that many researchers cited in this dissertation and some experts in this field (part of CEE investment promotion agencies) use "shared services" or "shared services centers" terms to name this comparatively new phenomenon. Novelty of the phenomenon and recent switch in value and scope of analyzed organizations as well as in naming it caused that part of the analyzed literature use older term, but explain the same constantly changing, agile phenomenon. Some researchers (Wirtz et al 2015; Kuzior, Sobotka 2019; Marciniak 2014 and others) and mainly experts in this field (Deloitte, ABSL, CEE countries investment promotion agencies and others) name the phenomenon "business services" or "global business services" and emphasize that recently this business model evolved. Instead of operating numerous shared services and managing outsourcing vendors independently, organizations are implementing GBSCs operating models providing integration of governance, locations, and

business practices to all shared services and outsourcing activities across the enterprise (Deloitte, 2016 b). Essential characteristics of GBSCs, which Deloitte (2016 b) sees are multi-function (see Figure 7), multi-region, multi-location (see Chapter *1.1. Changes in Global Economy Structure Driven by Development of Service Sector and Service Sector Foreign Direct Investment*), multi-sourced (internal/external outsourcing or mix of it) and multi-business (more than one business unit). ABSL (2019) emphasizes that GBSCs often know more about processes, owns more data and leverages more technology than any single function, and is a pioneer in cross-functional working. What is more, efficiency, productivity and value creation are named as core base of GBSCs. Digital enablement is a core driver of the current evolution in GBSCs toward a global value organization according to ABSL (2019).

Therefore, despite the fact that different terms are used to describe conceptual framework of GBSCs phenomenon – "business process outsourcing", "shared services", "shared services model", "shared services centers", "global business services centers", "business services" and other, since author agrees with majority of researchers, who state that GBSCs can be named as internal outsourcing form (Cushman & Wakefield, 2015; Keith et al, 2016; Oshri et al, 2011; PwC, 2015; Rudzioniene, Sakalauskiene, 2014 and others), throughout this work, the term "Global Business Services Centers" (GBSCs) will be used.

According to the author of this dissertation, definitions, which include combination of organizational structure and economic motives as well as multi-functional, multi-regional, multi-location, multi-sourced and multi-business features are the best to describe GBSCs. The insights from different views on GBSCs and the value it brings author would formulate GBSCs definition as follows: global value agile organization, which meets the conditions of multi-function, multi-region, multi-location, multi-sourced and multi-business characteristics and which is using globalization, digital enablement as the core drivers to create value according to common service level agreement (see Figure 7).
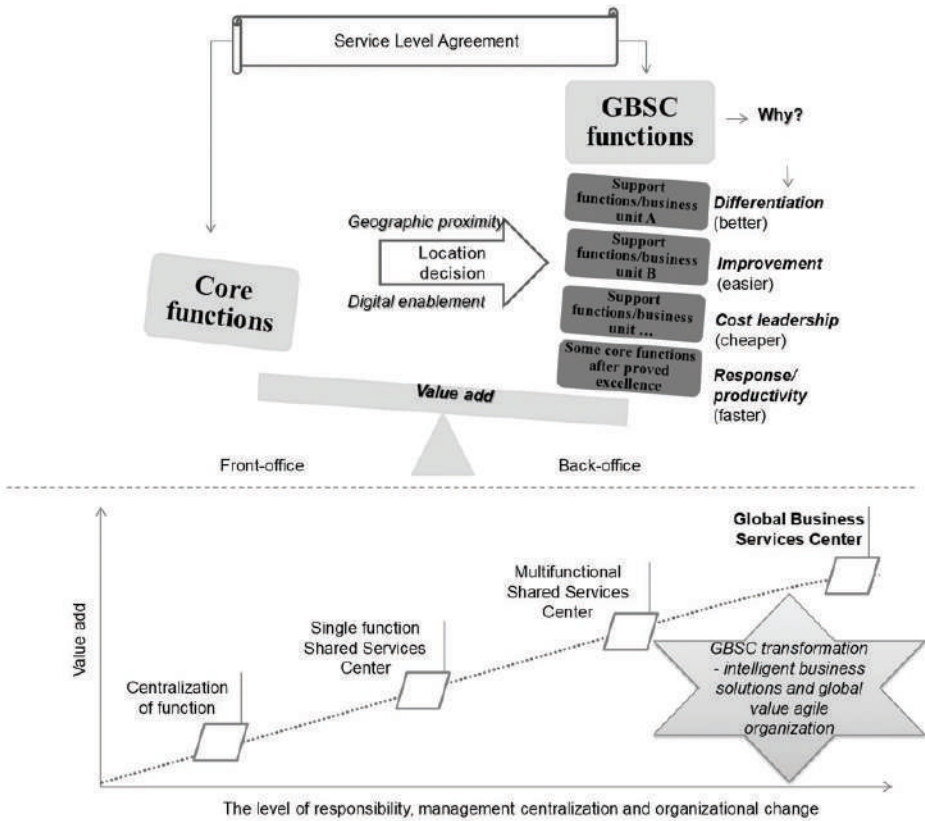
Figure 7. *Visualized Global Business Services Center Definition and Evolution Path*
Source: *compiled by author based on ABSL (2019), Skanska et al (2018), Tamošiūnienė, Kislovska, 2015*

Despite the fact that author noticed that in theoretical definitions of GBSCs the nature of organizational structure or managerial aspects are being mostly emphasized, economic nature of this phenomenon is being expressed by stating that GBSCs is a business activity model, the economic outcome of which is being expressed by measuring the effect of implementing such business model. This economic expression is being mostly paralleled with microeconomic effect as business catalyst and managerial

aspects. However, some macroeconomic connections can be notable in the researches as well and they are mainly noticed in the analysis of increasing scope and economic value of GBSCs presented in the Chapter below.

1.2.2. Analysis of Increasing Scope and Economic Value of Global Business Services Centers

The experts of GBSCs often emphasize that GBSCs sector is constantly growing by over 5 % each year and this sector should continually look for new ways to gain competitive advantage in marketplace (Cushman & Wakefield, 2015). Researchers usually distinguish two main features in GBSCs's reaction to transformation to market needs and their development path:

1. Increasing scope of GBSCs;
2. Increasing economic value of GBSCs.

Increasing scope seen by author of this dissertation and researchers is constantly increasing service portfolio provided by GBSCs (see Figure 8). Despite the fact that primary goal of such business model was reducing costs through standardization and consolidation of transactional processes, which are rarely seen as strategically important or close to external customers, currently the transition into higher value add activities is seen in GBSCs (BearingPoint, 2011; Deloitte, 2015 a, b). ABSL (2019) emphasizes the transformation of GBSCs into global value organization, driven by agility and digital enablement. Therefore, increasing scope of service portfolio enhance the importance of GBSCs business model since more sohisticated responsibilities and further GBSCs employees competence growth can increase the value for the host country.

The switch from standard repeating processes to strategical value add processes can be seen as appraisal of employees capabilities in the countries, where these GBSCs are located. What is more, this can lead to other macroeconomic outcomes as increasing need for employees in the sector, demand for particular competencies and increasing competitive advantage of the countries, where these GBSCs are located. These trends can be also paralleled with increasing life quality of employees and family members of the GBSCs. Researchers also distinguish number of important economic aspects within GBSCs organization such as increase of the level of processes knowledge of GBSCs employees, number of languages known in GBSCs, strengthening of different skills needed to cover high-value added processes in GBSCs, increased number of collaborative activities within the organization, increase in wages due to higher qualification and

responsibility level, strengthened employer branding, expansion of the premises and secondary services used by GBSCs and employees (printing, scanning, postal, cleaning, catering, transportation and other services), increased spending of employees due to higher wages (increased consumption) and other. These organizational characteristics have positive effect on state economy and have a tendency to increase taking into consideration economic multiplier effects, which are one of the fundamental mechanisms of local and regional development and occur when one type of economic activity affects another (Domański, Gwosdz, 2010).

Finance	• Accounts payable • Accounts receivable • Reporting • Planning and forecasting • ...
HR	• Employees data administration • Recruitment • Payroll, benefits, rewards • People development strategy and administration • ...
Procurement	• Contract management • Logistic • Supplier management • ...
IT	• Applications development • Servers/storage management • Telephony • IT security • ...
Legal services	• Contracts drafting • Information analysis • Legal assistance • ...
Sales	• Customer services and support • Technical support • Complaints management • ...
Marketing	• Marketing execution • Creative development • Customer data processing • ...
Credits/loans	• Administration of credits/loans • Credit collection • ...
Other value add functions	• ...

Figure 8. *Services Portfolio of Global Business Services Centers*
Source: *compiled by author based on Cushman & Wakefield, 2015; Invest Lithuania, 2016-2019; author's personal working experience in one of GBSCs's in Vilnius*

Macroeconomic effect can be seen in both the country-of-origin (home country of foreign direct investor) and host country. However, the this dissertation concentrates on the GBSCs macroeconomic effects in host country (see Figure 9).

Despite the fact that some authors, argue that in such cases when total FDI flows in particular geographic/economic region are intra-region investments and for that particular region that means only shift of capital instead of new investment (Deutsche Bank, 2014), according to the author of this dissertation, this position underestimates the macroeconomic value of GBSCs, which is one of the segments of service sector FDI. In opinion of the author of this dissertation, GBSCs capital shift and its impact on changes in economic structure directions should be analyzed in more detailed way due to number of reasons indicating increased scope and economic value of GBSCs:

1. Free movement of goods, services, capital and people stimulate the appearance of international and innovative business forms, stimulate international cooperation, accelerate the economy of each counterparty and particular geographical region they are acting in. Therefore, complex implications of free movement of goods, services, capital and people, especially taking into consideration regional development due to GBSCs investments, is relevant research topic.

2. It is important to evaluate how GBSCs localization decision influences regional development. The selection of GBSCs location influences the directions of changes in economic structure. Therefore, it is important to know how and which regions are being mostly economically influenced.

3. It is important to make research on behavioral changes of companies since micro changes in companies structural indicators directly influence changes in countries macro structure. Number of studies show that within a continuing integration of EU economies and technology development, the pressure to multinational companies to reduce their operational costs and increase efficiency has increased dramatically. This pressure provokes companies to rethink their behavior and look for competitive solutions. From one side, some smaller or those businesses, which have not adapted to those changes, are forced to leave the market by leaving their part to larger competitors. From the other hand, competition between the companies works as accelerator for looking for new, innovative and more effective business solutions, implementation of which highly contributes to the structural changes in state economy. Studies of interactions between competitors in the particular geographic region can explain the changes in behavior of economic entities and how these changes affect other economic subjects

and macroeoconomic indicators. The revealing of this topic on sectoral level is increasing in scope and value in constantly growing GBSCs market.

4. Other reasons, which will be disclosed in this dissertation.
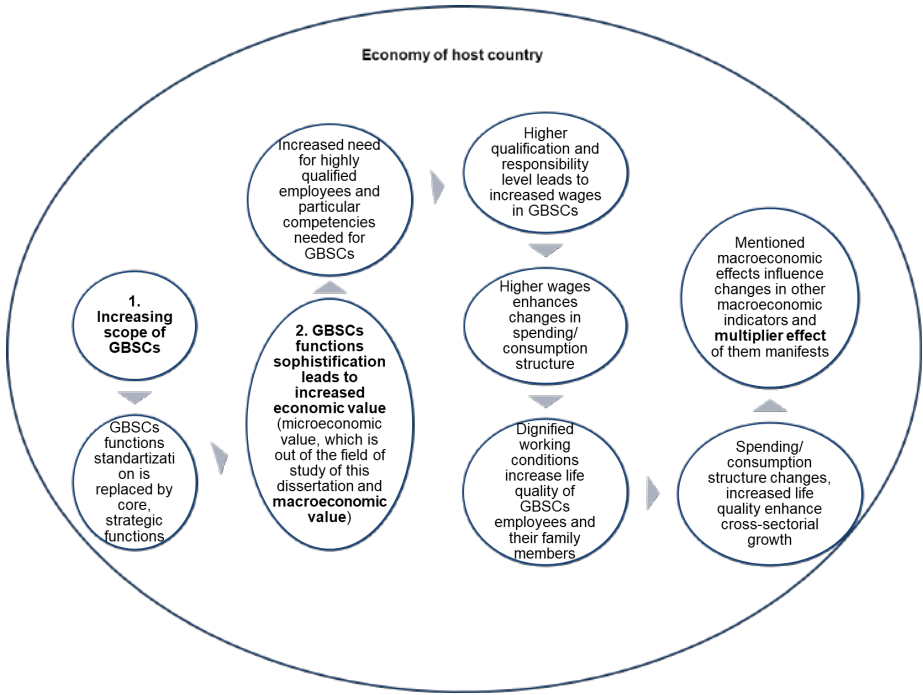
Figure 9. *Host Country Economic Effects Related to Increased Scope and Value of Global Business Services Centers*
Source: *compiled by author*

In summary, it can be said that there is no doubt that GBSCs outcomes manifest in increasing scope and economic value, especially in host countries, where GBSCs are located. The following macroeconomic outcomes of GBSCs market development in host countries can be noticed according to the researches analyzed in this Chapter: labor market changes (increase in salaries in GBSCs, demand for more employees and work restructuring aspects such as need of more sophisticated skills, capabilities etc.), increased consumption enhanced by GBSCs, increased life quality of GBSCs employees and their family members (better financial conditions, other non-financial ben-

efits such as trainings and development etc.), cross-sectorial growth (emergence and development of secondary businesses due to emergence and development of GBSCs), increasing competitive advantage on the country level (countries where GBSCs are developing are seen more attractive location for further GBSCs developments, which also implicates regional development within the country) and other. However, the following question arises: what is the current scientific exploration level of GBSCs impact on macroeconomic indicators and how author of this dissertation can contribute to these researches? Therefore, scientific exploration level of GBSCs in context of economic science is presented in the Chapter below.

1.2.3. Scientific Exploration Level of Global Business Services Centers in Context of Economic Science

Scientists usually complain about scarcity of academic researches in field of GBSCs. Therefore, author of this dissertation aims to reveal the scientific exploration level of GBSCs phenomenon in broader context of economic science, which also shows the interdisciplinarity of the analyzed topic. More frequent GBSCs researches emphasizing managerial and microeconomic aspects complemented with less frequent GBSCs researches emphasizing macroeconomic indicators presented in this dissertation contribute to deeper cognition of comparatively new GBSCs phenomenon and provide guidelines for evaluating of GBSCs impact on macroeconomic indicators.

1.2.3.1. Analysis of Micro Level Global Business Services Centers Researches in Managerial and Economic Literature

The role of GBSCs phenomenon is more widely studied in management science and economic practical background literature, which is mostly assessing managerial aspects of newly emerging business forms in service sector, their characteristics, transformation process, structural company changes and implications of GBSCs implementation on company micro level.

Managerial literature frequently emphasizes the need of innovative managerial view and solutions, importance of appropriate management of different limitations of GBSCs implementation, provide different implementation roadmaps and concentrate on different phases of GBSCs implementation project and their peculiarities such as diversity of managerial decisions and their impact on HR – change management, resistance to change, variety of internal organizational rules and techniques, communi-

cation, organizational culture aspects etc.

According to literature analysis presented in this dissertation, economic content is usually combined with managerial content of GBSCs phenomenon and is noticeable in micro (company) level studies, which mainly assesses GBSCs business model selection drivers, GBSCs location choice motives and impact on economic performance of the company.

Richter and Brühl (2017) were probably the first scientists found by the author of this dissertation, who performed comprehensive GBSCs literature analysis[5]. Scientists synthesized peer-reviewed articles and classified them into 4 perspectives according to their research questions (see Figure 10). This study shows high fragmentation of the academic literature and its managerial nature (e.g. authors found 137 works in the initial search and 83 works in refined screen).
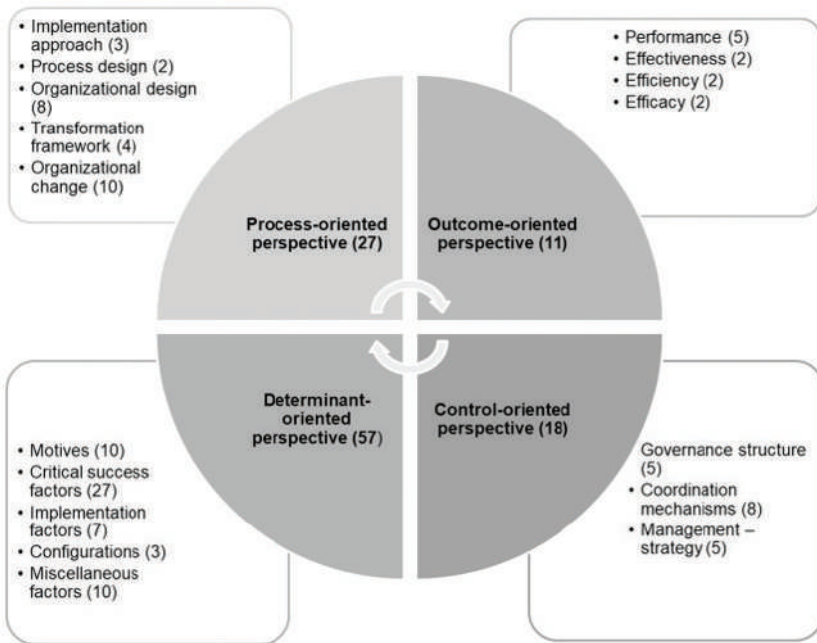
Figure 10. *Four-Perspective Framework on Major Global Business Services Centers Research Areas*

Source: *Richter, Brühl, 2017 (number of research questions in brackets)*

---

5   Originally named Shared Service Center. However, author of this dissertation uses "GBSCs" definition, see Chapter 1.2.1. Conceptual Framework of Global Business Services Centers for more details.

Among 17 major GBSCs research areas distinguished by Richter and Brühl (2017) the most popular is determinant-oriented perspective, which author of this dissertation sees as primary research stage and mainly related to organizational behavior, which is mostly managerial science feature. What is more, summary of empirical and conceptual literature from 55 selected scientific sources presented by researchers, shows 83 publications dated 2004-2015 and number of publications varies from 1 to 12 between these years. Despite the fact that no grounded scientific conclusion about the scientific exploration level of GBSCs based on this particular one research can be done due to sample size, research period, data availability and limited comparability, in any event this analysis shows fragmentation of GBSCs academic literature, novelty of GBSCs phenomenon and highest exploration level in management science.

Richter and Brühl (2017) performed comprehensive analysis of GBSCs literature with scientific background. However, author of this dissertation noticed that GBSCs researches can be found both in scientific and practical background literature. Scientific background literature is mainly managerial, microeconomics or mixed literature (publications in scientific journals, scientific conferences, academic dissertations, electronic books and other sources). Practical background literature is usually surveys, reports and other publications of different consulting, auditing and international researches companies (Deloitte, KPMG, Cushman & Wakefield, PwC and others), national investment promotion agencies, different business or regional, national communities such as Associations of Business Service Leaders (ABSL[6]), Shared Services & Outsourcing Network (SSON[7]), the Chartered Institute of Public Finance and Accountancy (CIPFA), Division on Investment and Enterprise of United Nations Conference on Trade and Development (UNCTD) and others, individual insights and case studies of the companies, which implemented or implementing GBSCs, and other practitioners.

Management literature and practical background microeconomic literature, mainly describe general nature of GBSCs, implementation gains and obstacles and include worldwide research data, which is usually can be not accessible for sole researchers. Therefore, author noticed that secondary data analysis of these worldwide research data is usually the only one accessible statistics source on GBSCs topics. However, scientific background and foundation of GBSCs, their implications as well as comprehensive evaluation is usually limited in such literature. Therefore, combination of

---

6   One of the biggest communities in Europe.
7   Worldwide community with over 100 000 members.

scientific and practical background managerial and microeconomic literature analysis brings more value in case of GBSCs analysis. Author's analysis of managerial and microeconomic researches found in both scientific and practical background literature are presented in Table 1.

Table 1. *GBSCs Exploration Level in Managerial and Microeconomic Literature*

Research topic	Main aspects and source	Managerial aspects	Microecono-mic aspects
Structural changes	Changes in company structure (Strikwerda, 2014; Bondarouk, 2014; Miles, 2011; Oshri et al, 2011; Pérez, 2008; Drucker, 2006; Kagelmann, 2001).	+	-
Readiness for GBSCs	Resistance to change, redirection of leadership, adaptation to new way of business, tools and methodologies (Kienast, Rudy, 2015; Redman et al, 2007).	+	-
	Taxonomy of management challenges to implement GBSCs (Knol et al, 2014; Wenderoth, 2013; Ulrich, Barney, 1984; Grant, 1996).	+	-
	GBSCs implementation need and communication aspects related to it (Hibberd, 2009, IBM, 2011).	+	-
GBSCs value	Sophisticated processes in GBSCs service portfolio, business process reengineering instead of standardization (Deloitte, 2017, 2016a; Deloitte, 2015a; BearingPoint, 2011; CIPFA, 2006).	+	+
	Agility leveraged into the culture of GBSCs, all outcomes of GBSCs based on it (ABSL, 2019).	+	+
	GBSCs as intelligent business solution, not just cost-saving strategy (CEE Investment Report, 2018; ABSL, 2019; Rudzioniene, Sakalauskiene, 2014).	+	+

Research topic	Main aspects and source	Managerial aspects	Microecono-mic aspects
Performance reporting -KPIs, service control -SLA	Importance of adequate measuring, evaluating methods for performance management. Key performance indicators (KPIs) and service level agreement (SLA) (Marciniak, 2013a; Deloitte, 2011).	+	-
GBSCs location aspects	High speed IT development, decreasing geographic barriers for GBSCs location (Deloitte, 2015a).	+	+
	Cheap GBSCS location and risk (Cushman & Wakefield, 2015).	+	+
	GBSCs international location choice increase competitive advantage and value for the customer (Mamica, 2020; Tamošiūnienė, Kislovska, 2015). Also see Figure 11.	+	+
Critics of GBSCs model	Loss of control and accountability, cost at the expense of quality (Aguirre et al, 1998).	+	-
	GBSCs disrupt the service flow, economies of scale benefits are exaggerated, distant locations generate waste and delays due to rework and duplications (Seddon, 2003).	+	+
	"One size does not fit all" and there have always be room for the tailoring of standards (Callan, 1998).	+	-

Source: *compiled by author*

According to author of this dissertation, managerial and microeconomic aspects presented in Table 1 are closely linked with macroeconomic aspects.

First of all, GBSCs definitions based on underlying the structural changes validate the increasing value of this phenomenon (see definitions in Chapter *1.2.1. Conceptual Framework of Global Business Services Centers* and increasing value in Chapter *1.2.2. Analysis of Increasing Scope and Economic Value of Global Business Services Centers*). Extension of GBSCs definition presented in Chapter *1.2.1. Conceptual Framework of Global Business Services Centers* in this work also shows that there is a clear

transformation from cost-related definitions to emphasis of agility, value creation and business processes sophistication in GBSCs (see Table 2 explaining key capabilities areas within GBSCs). Therefore, multidimensional aspects, also covering macroeconomic changes, not just simple standardization and micro level cost-saving strategy should be taken into consideration when analyzing GBSCs.

Table 2. *Key Capabilities Areas within GBSCs*

Strategy	Service delivery	Organization	Operations and technology
• Scope of services • Location of services • Business planning • Mission/vision • Value	• Performance management • Governance and issue resolution • Customer relationship management • Sourcing and vendor relationship management • Continuous improvement	• Organizational structure • People management • People development • Culture • Recruiting	• Process • Technology • Controls • Program management • Facilities and infrastructure

Source: *Deloitte, 2017*

What is more, the changing nature of the business shapes the demand for new capabilities and skills of the employees, raises the competitiveness of the country and have impact on number of macroeconomic indicators.

Moreover, according to practitioners, GBSCs are implemented in the majority Fortune 500 companies and this lead to the broader economic changes both on microeconomic and macroeconomic scale, which should be evaluated from economic science prospective. Furthermore, analysis of GBSCs location aspects helps to identify the most attractive economic regions, where GBSCs concentration is increasing and evaluation of the macroeconomic outcomes in these regions becoming more and more relevant.

Also, contribution of authors of management science dissertations can be emphasized in the light of the need of deeper GBSCs phenomenon cognition and increasing exploration level of GBSCs topic. Wenderoth (2013) has developed Four-Phase-Model for GBSCs (originally shared services) implementation based on the basis of economic theories, theories of organizational and management research, practitioners

literature and empirical study among 500 large-scale enterprises, the 25 most important consulting companies and 133 institutions for higher education in Germany. Pérez (2008) evaluates GBSCs (originally shared business service) concept as a new form concerning the steering of internal services based on a variety of case studies and theoretical concepts. Kagelmann (2001) in his empirical study describes the main criteria of the concept systemically, basing the idea on theoretical concepts, such as the transaction cost or the principal-agent theory as opposed to other studies. The material of these dissertations can be used for the theoretical reasoning of GBSCs as economic phenomenon in economic science researches and in this particular dissertation.
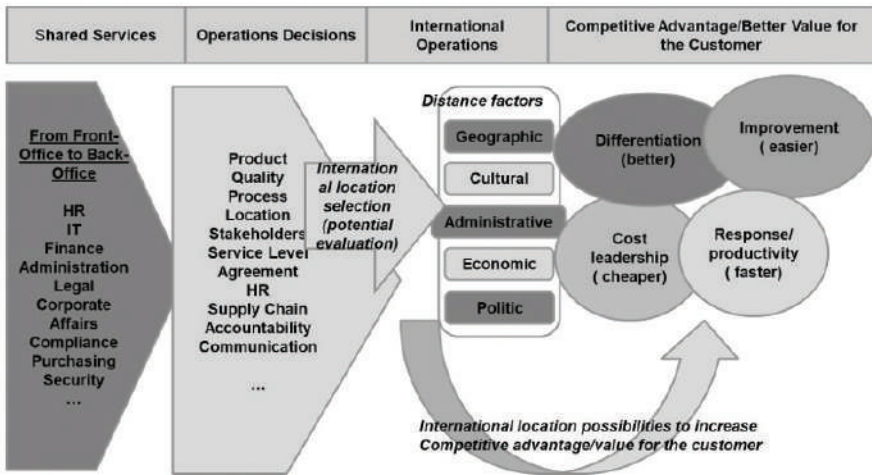
Figure 11. *Global Business Services and International Location*
Source: *Tamošiūnienė, Kislovska, 2015*

Author of this dissertation would like to note that the common feature of the above analyzed researches is that they are showing the novelty of the GBSCs phenomenon and these researchers are the pioneering in this topic and provide rather descriptive, cognitive view on the phenomenon. Author of this dissertation also noticed that the newer the research, the more positive GBSCs implementation and value aspects it includes. From one side, it can show the improvements in managing GBSCs implementation during the recent years, but from other side, it can be the outcome of deeper cognition of GBSCs phenomenon. Nevertheless managerial and microeconomic explora-

tion level of GBSCs is improving and some parallels with macroeconomic aspects can be done according to these researches, the scarcity and limitations of macroeconomic researches on GBSCs topics will be revealed in the Chapter below.

1.2.3.2. Analysis of Macro Level Global Business Services Centers Researches

Scientific and practical background literature analysis shows that GBSCs are being actively discussed on managerial and microeconomic level. However, there is limited number of researches, where GBSCs and macroeconomic indicators phenomenon are being paralleled. Therefore, GBSCs macroeconomic outcomes measurability problem arises.

Connections between service sector FDI researches on macroeconomic level and FDI segment – GBSCs macroeconomic value can be noticed. Some authors noticed sectorial separation problem and concluded that the impact of FDI on state economy can be different depending on sector (Sass et al, 2018; Kalašinskaitė, 2009; Barkauskaitė, Naraškevičiūtė, 2016 and others) and it is purposeful to analyze FDI aspects by separating factors, determining FDI into separate economic activities (Ruplienė, 2013). The limitations of GBSCs analysis on macroeconomic level are related to the fact that macroeconomic indicators are usually being paralleled with FDI in general without distinguishing service sector FDI and it's segment such as GBSCs. Nevertheless, since GBSCs are the segment of service sector FDI, service sector FDI researches in a wide extend cover the topic of GBSCs researches on macroeconomic level and according to the author of this dissertation, only some measurability aspects of service sector FDI economic impacts can be applied in evaluation of GBSCs impact on macroeconomic indicators.

Not so widely discussed GBSCs parallels with macroeconomic aspects will be presented below. Author of dissertation noticed that existing researches usually cover some descriptive data, but empirical testing is limited or is not being done at all due to lack of statistical data of this comparatively new GBSCs phenomenon. Also, author of the dissertation found that existing GBSCs researches on macro level cover one or few separate macroeconomic indicators analysis, but there is very limited amount of comprehensive analysis of different macroeconomic indicators with emphasis on multiplier effect, which author of this dissertation sees as important aspect.

Skowroński (2017), Micek et al (2010), Micek et al (2011), Micek (2011) are few from the minority of the researches, who analyzed multiplier effect of GBSCs.

Skowroński (2017) emphasizes the procurement and income multiplier effects enhanced by GBSCs. According to the researcher, despite the fact that the procurement effect is higher in case of production companies, but such sectors as training and transportation are being significantly impacted by GBSCs. Researcher also claims that income multiplier effects create jobs mostly in trade, but also in tourism and gastronomy or transportation. At the same time, Skowroński (2017) notices GBSCs positive effect on human capital development, employment and other labor related indicators, payable taxes (personal income, corporate income, real estate taxes), emigration prevention due to relatively higher salaries in GBSCs, valuable partnership with universities, secondary services providers growth stimulated by GBSCs (real estate and other) and other multiplying effects.

Micek et al (2010) states that growth in employment at newly opened and existing GBSCs increase household purchasing power and as a result multiplier effects manifest. According to this research, part of the income of employees is devoted to consumer goods and services and reaches different sectors of the economy (multiplier effects of the first order). These new jobs and related employees revenues generate continued (though significantly lower) demand for consumer goods and services (the effects of second and subsequent orders). Summing all these jobs enables to determine the total income multiplier effect resulting from the activities of GBSCs.

According to Micek et al (2011), an assessment of the multiplier effect is an important tool for examining the impact of GBSCs on a locality, which can express changes in the volume of income or in the level of employment in local or regional economy which occur as a result of the operation of firms in a given place. Authors evaluate impacts of GBSCs on the local economy of Krakow and distinguish direct, additional indirect and induced multiplier effects. Researchers estimated number of jobs according to distinguished economic activities stimulated by GBSCs in Krakow (indirect multiplier effect), analyzed the expenditures of employees of GBSCs located in Krakow (induced multiplier effect) and local and regional government income effects via paid taxes, distinguished GBSCs social effects mainly related to human capital development.

Researcher Micek (2011) presents the selected methodological problems related to the estimation of the GBSCs multiplier effects value on a local scale. Special emphasis is put on these difficulties and dilemmas which have a spatial dimension. The paper also describes the non-spatial problems, traps and methodological weaknesses

of analysis of multiplier effects. Micek (2011) also emphasized the scarcity of statistical data on GBSCs topics, which complicates the researches related with this phenomenon and especially with evaluation of multiplier effects.

The majority of the researches identified by the author of dissertation include narrow GBSCs and macroeconomic indicators parallels.

Wirtz et al (2015) explored the contribution of GBSCs to improve productivity and economic growth of the world economy. Authors concentrated on macroeconomic data and industry reports, and linked them to the non-ownership concept in service research and theories of the firm. Structural change and the importance of the service sector in the world economy, outsourcing and the growth of business services, international services trade and the contribution of business services were analyzed by the authors. The paper makes a conceptual contribution supported by descriptive data, but without empirical testing.

Some authors (Kuzior, Sobotka 2019, Biernat-Stawecka 2016, number of GBSCs experts and national investment promotion agencies reports and studies analyzed in this dissertation) noticed such macroeconomic outcome of GBSCs as employment restructuring. Kuzior, Sobotka (2019) emphasize the changes in Polish labor market in the scope of desirable competencies of employees in the context of development of GBSCs (both in terms of quality and quantity) and increasing upcoming technological changes. Biernat-Stawecka (2016) focuses on the process of employment restructuring implemented through company segmentation, isolation of external cells from its internal structure and the outsourcing of ancillary functions (GBSCs context). Author of this dissertation would like to emphasize that majority of the employment restructuring researches found and analyzed by author are interdisciplinary and cover both macroecroeconomic, microeconomic and managerial aspects of GBSCs.

Country or region specific analysis of GBSCs impact on (macro)economic aspects was noticed in the researches made by Ruzsa (2018), Ślusarczyk (2017), Marciniak (2014) and others. Ruzsa (2018) analysed the opportunities of GBSCs in Central European countries and whether new GBSCs can be established in the CEE region. Author concluded that as long as political and economic stability is present in the CEE region and the EU structural funds flow into the CEE economies, the economic prosperity may continue to last for the next decade as well. Also author assumed that the economic growth will sustain in the CEE region in the coming years and this will help avoid major economic shocks in the region. Ślusarczyk (2017) analyzed and compared

such indicators related to GBSCs in Poland and Slovakia: number of GBSCs, number of employees in GBSCs, GBSCs employees in the general structure of the people employed in the countries, main and developing GBSCs locations, share of foreigners in the employment in GBSCs, GBSCs location conditionings including languages skills, level of GBSCs employees earnings and other. According to the author, the analysis of the key aspects of GBSCs functioning in Poland and Slovakia allows concluding that the functioning of these units (considering it generally) is similar in both countries. However, author of the research names lack of analogical data from Poland and Slovakia as main research limitation. Marciniak (2014) disclosed what kind of trends are present in GBSCs markets and which appear in the CEE business market. Author concluded that the development of the GBSCs sector plays an increasingly important role in the growth of the national economies in CEE region, where the favorable tax regime, salary level, geographical proximity, cultural homogeneity and the development of infrastructure attract investor companies. Also, some aspects of human labor in GBSCs were discussed. The empirical research consisted of a series of interviews with qualitative data and a questionnaire study with mostly quantitative data.

The majority of macroeconomic analysis on GBSCs topic were noticed in practice oriented literature such as business services reports of national investment promotion agencies, business services professionals and other GBSCs networks, which aim is to evaluate the role of GBSCs in economics, CEE region attractiveness for GBSCs (CEE Investment Report, 2018 and others), influence on macroeconomic indicators in different countries (Business Sevices Sector in the Czech Republic by ABSL, 2016, 2017, 2019, 2020, Lithuania's Business Services Report, 2016-2020, Business Services Centers in Hungary, 2017-2020, Business Services Sector in Poland by ABSL, 2014-2020, Business Services Sector in Romania by ABSL, 2018-2020, Shared Service & Business Process Outsourcing Centers in Slovakia, 2017-2020 and other).

Table 3. *Macroeconomic Indicators Paralleled with GBSCs in Existing Researches*

Research context and researchers	Labor market indicators	Spending and consumption indicators	Migration indicators	Life quality indicators	Cross-sectorial growth indicators	Regional development indicators	GDP related indicators	Multiplier effect of macroeconomic indicators
Poland: Kuzior, Sobotka (2019)	+	-	-	-	-	-	-	-
CEE: Ruzsa (2018)	+	-	+	-	+	+	-	-
Poland: Milewska (2018)	+	-	-	+	+	-	-	-
Poland, Slovakia: Ślusarczyk (2017)	+	-	-	+	-	+	-	-
Poland: Skowroński (2017)	+	+	-	+	+	+	-	+
Poland: Biernat-Stawecka (2016)	+	-	-	-	-	-	-	-
Worldwide: Wirtz et al (2015)	+	-	-	-	-	-	+	-
CEE: Marciniak (2014)	+	-	-	-	-	+	-	-
Poland: Micek et al (2010), Micek et al (2011), Micek (2011)	+	+	-	-	+	-	-	+
National investment promotion agencies or GBSCs experts reports								
Czech Republic	+	-	+	+	+	+	-	-
Hungary	+	-	+	+	+	+	-	-
Lithuania	+	-	+	+	+	+	-	+
Poland	+	+	+	+	+	+	+	+
Romania	+	-	-	+	+	+	+	-
Slovakia	+	-	+	+	+	+	-	-

Source: *compiled by author based on the literature sources presented in references [4, 5, 6, 73, 89, 90, 151]*

The researches presented in this Chapter distinguish different macroeconomic indicators, which are being impacted by GBSCs (see Table 3). The main aspects of GBSCs parallels with macroeconomic indicators noticed by the author of this dissertation are the following: the majority of the researches parallel GBSCs with one or few

macroeconomic indicators; minority of the researches evaluate multiplier effect of the GBSCs impact on macroeconomic indicators; each analyzed research parallel GBSCs with employment indicator, which is seen as one of the most important macroeconomic indicator impacted by GBSCs; reports and analysis of national CEE investment promotion agencies or GBSCs experts in CEE countries include the most comprehensive analysis of GBSCs and their impact on different macroeconomic indicators. More detailed insights on GBSCs impact on macroeconomic indicators topic will be presented in Chapter *3.1.Testing of Model of Evaluation of Global Business Service Centers Impact on Macroeconomic Indicators.*

In summary, it can be said that despite the fact that researchers emphasize the need of paralleling GBSCs with macroeconomic indicators, the novelty of GBSCs phenomenon and lack of statistical data hinder the improving of scientific exploration level of GBSCs and their impact on macroeconomic indicators. Therefore, the existing researches cover one or few macroeconomic indicators with limited empirical testing and with limited evaluation of multiplier effect. What is more, at this stage of GBSCs evolution, descriptive statistics, comparative analysis, experts survey/interview can be used as main research methods on the topic. In opinion of the author of this dissertation, rarely used multiplier effect evaluation research method would lead to deeper cognition of GBSCs phenomenon and it's impact on macroeconomic indicators.

1.2.4. Interconnectedness Between Global Business Services Centers and Macroeconomic Indicators Expresses by Multiplier Effect

Taking into consideration macro level GBSCs researches analysis presented in this dissertation and identified fragmentation of analysis of interconnectedness between GBSCs and macroeconomic indicators, author would like to summarize the variety of macroeconomic indicators, which were analyzed in different scientific and practical literature, but were connected with GBSCs to limited extend or not connected at all and just paralleled with phenomenon related to GBSCs (business services sector, BPO, services sector FDI and other). Appendix 2 and Table 4 present the main interconnectedness between GBSCs and macroeconomic indicators identified by author after scientific literature analysis.

The main indicator, which is being impacted by FDI, analyzed by majority of researchers in scientific background literature is traditional macroeconomic indicator – GDP (Kalašinskaitė, 2009; Ruplienė, Garšvienė, 2008; Čičak, Sorić, 2015; Kisswani et

al, 2015 and others). Some authors complement GDP indicator with labor productivity, unemployment rate, diffusion of technologies, human capital formation and international trade integration (Zenasni, Benhabib, 2013; Mucuk, Demirsel, 2013; Laskienė, Pekarskienė, 2011; and others) usually by choosing one of them and by not distinguishing economic sector.

However, increasing concerns have been raised since a long time about the adequacy of current measures of economic performance, in particular those based on GDP figures. There is noticeable group of researchers, who state that GDP cannot be used as the main economic indicator for reflection of the real economic situation and that GDP should be complemented with different indicators, especially with those, which measure quality of life, societal well-being, as well as economic, environmental, and social sustainability (Stiglitz et al, 2009; Servetkienė, 2013 and others).

Author of this dissertation noticed that the strongest linking of GBSCs and variety of macroeconomic indicators was noticed in publications of countries investment promotion agencies and different business communities such as ABSL and other.

Economic multiplier effect of GBSCs, which according to author of this dissertation, is important expression of variety of macroeconomic indicators, is one of the fundamental mechanisms of local and regional development and occurs when one type of economic activity affects another (Domański, Gwosdz, 2010). However, the minority of the researchers identify multiplying nature of the interconnectedness between GBSCs and macroeconomic indicators (Skowroński, 2017; Micek et al, 2010; Micek et al, 2011; Micek, 2011 and others).

Taking into consideration not so widely studies multiplier effect, according to the methodology prepared by Economic Development Research Group (1997), economic impact, which can be also paralleled with multiplier effect of GBSCs, can occur as:

- Direct economic effects – the changes in local business activity occurring as a direct consequence of public or private business decisions, or public policies and programs. These may occur as a result of various factors, each of which is analyzed differently: investment and spending decisions (directly affect the flow of spending, income and jobs associated with economic activities), cost shift (a public or private policy change or project may change the cost of living and/or business operating cost within a given area), location competitiveness (a public or private program or policy may affect the attractiveness of an area for population growth and retention, and for

business investment and retention).

- Indirect business impact – business growth/decline resulting from changes in sales for suppliers to the directly-affected businesses (including trade and services at the retail, wholesale and producer levels).

- Induced business impacts – further shifts in spending on food, clothing, shelter and other consumer goods and services, because of the change in employment and payroll of directly and indirectly affected businesses. This leads to further business growth/decline throughout the local economy.

- Dynamic economic effects – consequences of broader shifts over time in population and business location patterns, land use and resulting land value patterns, which may also affect government costs and revenues. These changes will ultimately affect income and wealth – both overall and for particular groups of people in the affected area.

Invest Lithuania (2015) complements this view by summarizing that multiplier effect of GBSCs starts from primary value chain to provide the needed, continues in secondary value change and reaches tertiary value chain. From point of view of GBSCs these three value chains according to author of this dissertation would be primary, secondary and tertiary/further value chains. Primary value chain – resources purchased from local businesses to provide services and create the added value. Resources providers starting from premises rental, cleaning, posting and other services to additional services providers such as restaurants, shopping malls, cafes etc. purchase resources from their suppliers to satisfy their customers needs and create the added value. Secondary value chain – the added value in primary value chain is being created through employees and supporting resources. Employees receive salaries, which afterwards are being spent for goods and services and also further investments are being made into supportive resources. Tertiary/further value chain – the added value is also being created in secondary value chain where employees, additional resources and intermediaries receive their part of value chain and repeat this process accordingly.

ABSL (2011) distinguished two types of multiplier effects generated by GBSCs – financial and employment multiplier effect. Financial multiplier effect – increased incomes for local budgets expressed in property tax, the share in corporate income tax, personal income tax. In terms of employment multiplier effect ABSL (2011) emphasized income, supply and tourism business multiplier effects. ABSL (2011) estimated number of jobs that exist due to income effects from various service Centers in 2010

and concluded that on average, 1.000 jobs at existing GBSCs created nearly 110 jobs in sales, transport and communication, recreation and culture, housing and energy, gas, water supply, hotels and restaurants, medical services and education. According to ABSL (2011) supply multiplier effect strongly depend on the industry in which employment is created and it comes directly from suppliers, including those generated by non-salary benefits offered by employers (e.g. in medical services, education, and recreation). ABSL (2011) emphasized tourism business multiplier effect and calculated that all visitors in Krakow use about 19.500 hotel nights per year what results in maintaining at least 50 jobs in hotels, 30 jobs in catering, 6 jobs related to transport, trade, and culture.

In summary, the scientists are discussing multiplier effect of GBSCs, which occurs as positive economic spillover effect in different value chains. These scientific discussions are usually fragmented and more of the descriptive nature. Author of this dissertation sees the need to complement this view and discuss multiplier effect of GBSCs on macroeconomic indicators in CEE countries on a more detailed level and after that to present the specific multiplier effect manifestation example according to the business case of one of the biggest GBSCs in Lithuania (see Chapter *3.1.8. Evaluation of Multiplier Effect of Global Business Services Centers Impact on Macroeconomic Indicators* and *3.1.10. SEB Global Services Vilnius Business Case as Example of Multiplier Effect of Global Business Services Centers Impact on Macroeconomic Indicators in Lithuania).*

The findings of the first part of the dissertation. The servitization changes the global economy structure and encourages the emergence of new global business forms. Comparatively new value add oriented business form such as GBSCs from one side, was created to fulfill the value add needs for the companies, but from another side, can be seen as both microeconomic and macroeconomic changes catalyst on the state level. The novelty of this phenomenon encourages researchers to deeper cognition of it. However, at this stage of the evolution of GBSCs business model, scientific exploration level of evaluation of macroeconomic outcomes of GBSCs is limited. Despite the fact that the evaluation of scientific exploration level of GBSCs phenomenon in the context of economic science performed in this dissertation revealed the interdisciplinarity of the topic, the predominance of managerial and microeconomic researches is noticeable. Thus, the dissertation topic covers not so commonly analyzed macroeconomic indicators and GBSCs parallels, which according to the author of the dissertation, have to improve the current GBSCs phenomenon exploration and it's impact on macroeco-

nomic indicators evaluation levels.

According to the existing researches, GBSCs outcomes manifest in increasing scope and economic value, especially in host countries, where GBSCs are located. The increasing scope of GBSCs show that the host countries started to be considered as centers of excellence since more sophisticated processes are being centralized here. This without a doubt brings macroeconomic value for the host country, where the level of intellectual working places increases and other benefits arise. The increasing economic value of GBSCs manifest through the improving macroeconomic indicators such as labor market indicators, spending/consumption indicators, life quality indicators, cross-sectorial growth indicators, regional development indicators, GDP related and other macroeconomic indicators. However, measurability of the macroeconomic outcomes of GBSCs problem arise.

The common feature of the analyzed researches noticed by the author of this dissertation is that they are emphasizing the novelty of the GBSCs phenomenon and these researchers are the pioneering in this topic and provide rather descriptive, cognitive view on the phenomenon without or with limited empirical research due to scarcity of the already performed researches and statistical GBSCs data. Therefore, despite the fact that researchers emphasize the need of paralleling GBSCs with macroeconomic indicators, the novelty of GBSCs phenomenon and lack of statistical data hinder the improving of scientific exploration level of GBSCs and their impact on macroeconomic indicators. From other side, the scarcity of the statistical data of GBSCs is seen as the limitation, but from other side this limitation encourages to find for the available intradisciplinary research methods combination to reveal the current level of macroeconomic outcome of GBSCs.

What is more, author of the dissertation noticed that multiplier effect of GBSCs impact on macroeconomic indicators is rarely being evaluated in the existing scientific researches. The scientists are discussing multiplier effect of GBSCs, which occurs as positive economic spillover effect in different value chains. However, these scientific discussions are usually fragmented and more of the descriptive nature. Therefore, according to the author of this dissertation, deeper analysis of GBSCs macroeconomic outcome multiplier effect manifestation could lead to deeper cognition of GBSCs phenomenon and it's impact on macroeconomic indicators.

2. JUSTIFICATION OF THEORETICAL MODEL FOR EVALUATION OF GLOBAL BUSINESS SERVICES CENTERS IMPACT ON MACROECONOMIC INDICATORS IN CENTRAL AND EASTERN EUROPE COUNTRIES

Taking into account the GBSCs aspects revealed in the theoretical part of the dissertation, second methodological part of the dissertation concentrates on the structure of evaluation of GBSCs impact on macroeconomic indicators in CEE countries. The structure of the research methodology for evaluation of GBSCs impact on macroeconomic indicators is presented in Figure 12.

According to structure of research methodology, first of all, service sector/service sector FDI (including GBSCs) macroeconomic outcomes measurement methods are analyzed and the reasoning of applicable research methods for the dissertation topic is provided. Secondly, research process detalization is presented. Thirdly, the empirical research testing stages are described. Fourthly, the results of evaluation of GBSCs impact on macroeconomic indicators are presented.

Methodological part of the dissertation presents the reasoning of research methods for evaluation of GBSCs impact on macroeconomic indicators. It also presents and desribes in details the developed by author model for evaluation of GBSCs impact on macroeconomic indicators in CEE countries, which is based on system approach, economic multipliers approach and consists of such parts as evaluation of GBSCs impact on separate 7 distinguished macroeconomic indicators, evaluation of GBSCs macroeconomic outcomes multiplier effects and evaluation of GBSCs impact on macroeconomic indicators using panel data analysis. Methodological part of the dissertation also covers panel data analysis research methodology, detalization of components of research of evaluation of GBSCs impact on macroeconomic indicators, research context reasoning and research limitations.
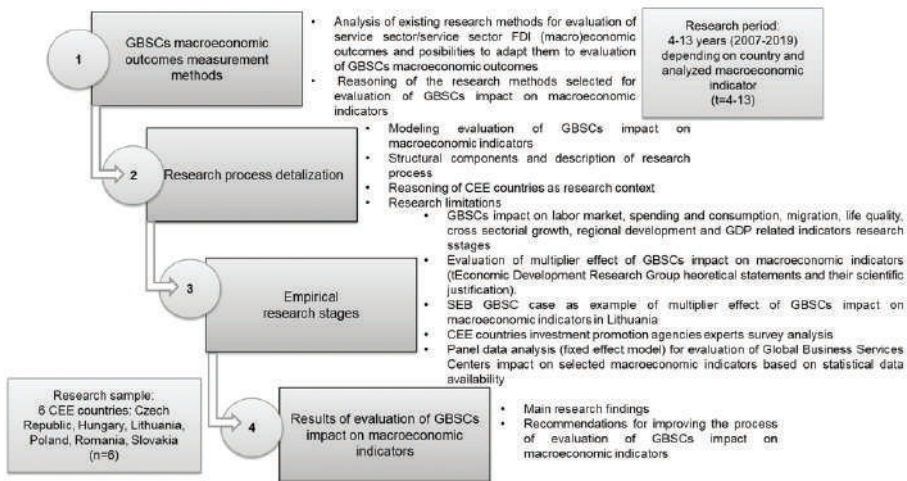
Figure 12. *Structure of Research Methodology for Evaluation of Global Business Services Centers Impact on Macroeconomic Indicators*
Source: *compiled by author*

The described parts detalization will be reflected in the subsequent Chapters of this dissertation.

2.1. Reasoning of Research Methods for Evaluation of Global Business Services Centers Impact on Macroeconomic Indicators

In the light of global servitization processes, scientists are paying more attention for services sector economic outcomes and their measurability. There is number of researches, which aim to evaluate the economic outcomes of service sector or service sector FDI (Iacob et al, 2019; Sass et al, 2018; Barkauskaitė, Naraškevičiūtė, 2016; The World Investment Report, 2015; European Commission, 2014 a, b; Ruplienė, 2013; Herbert, Paraskevas, 2012; Kalašinskaitė, 2009; Bellak et al, 2008; Gopinath, Echeverria, 2004 and others). However, GBSCs macroeconomic outcome measurability problem arises. The following obstacles of GBSCs macroeconomic outcomes evaluation found in the scientific literature and described in the theoretical part of this dissertation encourage author of this dissertation to look for the adapted measurement solutions: the

novelty of GBSCs phenomenon, the scarcity of scientific researches with GBSCs and macroeconomic indicators parallels, existing researches limitation such as descriptive nature of them rather than using of empirical testing, which would include GBSCs related statistical data, existing GBSCs statistical data gathering inhomogenity (different sources, no unified statistics). According to the author of this dissertation, despite the scarcity of GBSCs statistical data mentioned in different researches and noticed by the author while collecting research data, combination of different qualitative and some quantitative research methods can be derived from existing more general services sector or service sector FDI researches. These research methods can be partially adapted for evaluation of GBSCs macroeconomic outcomes. What is more, evaluation of multiplier effect of GBSCs impact on macroeconomic indicators, which is rarely being done in the scientific researches found by the author, could be valuable addition to the existing methods for the evaluation of GBSCs impact on macroeconomic indicators.

Examples of researches, which can be or cannot be adapted for evaluation of macroeconomic outcomes of GBSCs are presented below and are summarized in Appendix 3. After analysis of each chosen example of research, the author of the dissertation expresses the opinion on the existing researches methods applicability in the evaluation of macroeconomic outcomes of GBSCs.

Iacob et al (2019) present analytical examination of significant interdependencies of the services sector in the Romanian economy. The researchers present the statistical data for 20 or more years (n=20 and more years) and use regression analyzis for evaluation of the existence of correlations between: the share of employment in services (as percentage of total employment) and the share of value added in services (as percentage of GDP); the share of employment in services, (as percentage of total employment) and the employment in services, female (% of female employment); the growth rate of GDP per capita and the share of value added in services (as percentage of GDP). Author of this dissertation finds the research as valuable input to measure the macroeconomic outcome induced by service sector development and agrees that employment in service sector is one of the best indicators to measure the macroeconomic outcome. However, the researchers, who are analyzing the minimum sample size for regression analysis usually conclude that depending on the model, at least n=10 or n>10 is needed (Jenkins, Quintana-Ascencio, 2020; Ali et al, 2019; Snijders, Bosker, 1999 and others). Therefore, if author would consider to apply the same research method, employment in GBSCs could not replace employment in services selected by Iacob et al (2019) and

regression analysis could be limited research method in case of GBSCs due to novelty of GBSCs phenomenon and not sufficient sample size (n=6) and research period (up to 13 years (2007-2019)). First of all, according to national CEE countries investment promotion agencies and GBSCs market experts, GBSCs statistical data (number of GB-SCs, employment in GBSCs, average salary in GBSCs and other) was started to gather recently. Secondly, GBSCs macroeconomic outcomes measurability problem can be related to intangible effects evaluation (for instance, life quality indicators, employment restructuring and other). Author of this dissertation considers that regression analysis used by Iacob (2019) could be reliable research method for evaluation of GBSCs macroeconomic outcomes in the future when the sufficient sample size would be available.

Sass et al (2018) evaluate the impact of FDI on host countries by presenting the analysis of selected service industries in Visegrad countries (Czech Republic, Hungary, Poland and Slovakia). The researchers use linear regression analysis and panel regression analysis for each country (n>6 years) and evaluate selected service industry export and employment outcomes. As it was mentioned above, due to sample size/research period regression analysis currently can be used for evaluation of GBSCs macroeconomic outcomes to the limited extend. What is more, export as macroeconomic indicator is irrelevant for GBSCs. However, the employment is also being evaluated in the research of Sass et al (2018), which author of this dissertation sees as important macroeconomic aggregate, which can be paralleled with GBSCs.

Mroczek (2019) presents the examination and comparative analysis of the business services sector in India, Ireland and Poland. Researcher presents the business services organizations location factors in three countries and analyze them in a descriptive way. Such research method can be used to evaluate the GBSCs differences and reveal specific features in macroeconomic outcomes in countries selected by the author of this dissertation. Comparative analysis allows to make scientific conclusions without long term statistical data, which is relevant in case of statistical data scarcity for GBSCs.

The following national CEE countries investment promotion agencies or GBSCs experts reports and analysis mainly use such methods as survey of GBSCs, descriptive analysis, qualitative comparative analysis, projections methods to reveal the GBSCs impact on macroeconomic indicators: ABSL (2016, 2019), Business Services in the Czech Republic (2017), Business Services Sector in the Czech Republic by ABSL (2016, 2017, 2019), Paslaugų centrai Lietuvoje (2015), Lithuania's Business Services Report (2016-2019), Hungarian Shared Services and Outsourcing Insights (2017), Business Services

Centers in Hungary (2017, 2018), HIPA (2016), Business Services Sector in Poland by ABSL (2014-2019), Romania's Business Service Sector IT&C, SSC & BPO (2018), Business Services Sector in Romania by ABSL (2018), Shared Service & Business Process Outsourcing Centers in Slovakia (2017-2019). After the analysis of these researches made by the author of this dissertation, it was identified that the following macroeconomic indicators are influenced by GBSCs: labor market indicators, spending and consumption indicators, migration indicators, life quality indicators, cross-sectorial growth indicators, regional development indicators, GDP related indicators. According to author of the dissertation, secondary data analysis and comprehensive comparative analysis based on these researches together with supportive experts surveys and modelling of evaluation of GBSCs impact on macroeconomic indicators methods are important and probably the main research methods, which can be used for revealing the impact of GBSCs on the identified macroeconomic indicators, since these researches include comprehensive GBSCs sector data analysis, which is not accessible for single researcher. The additional survey of the GBSCs experts from national investment promotion agencies of CEE countries is seen as complementary method to cover the questions, which are unclear to the author after the secondary data analysis and comprehensive comparative analysis according to the researches mentioned above. Moreover, despite the fact that small sample size and short research period limit the using of econometric research methods for evaluation of GBSCs impact on macroeconomic indicators in CEE countries, author of the dissertation has chosen to perform panel data analysis panel (fixed, random effects and pooled OLS models) using scarce, but available statistical data.

Author of the dissertation also identified that GBSCs ability to improve productivity and economic growth of the world economy analyzed by Wirtz et al (2015) is rather conceptual contribution supported by descriptive data, which is more applicable in theoretical part of the dissertation than in empirical.

Descriptive analysis performed in interdisciplinary management and economic science researches made by Kuzior, Sobotka (2019) and Biernat-Stawecka (2016) shows one of the important macroeconomic outcomes of the employment in GBSCs – employment restructuring. According to the author of this dissertation, it is applicable for the economic dissertation research as well.

Descriptive and comparative analysis used for revealing of economic development opportunities enhanced by GBSCs (Ruzsa, 2018) and for highlighting GBSCs

related aspects including macroeconomic indicator such as employment and level of GBSCs employees earnings (Ślusarczyk, 2017) as well as interview, questionnaire study used as research methods by Marciniak (2014) for analysis of trends in GBSCs market and it's role in the growth of national economies in CEE region, are applicable for the dissertation research.

According to the author of the dissertation, the research methods mentioned above can be used as supportive methods together with limited extend of regression analysis made based on panel data analysis until the sample size and research period are too small due to scarcity of GBSCs statistics. Author believes that panel data analysis, which was not found in any GBSCs related research analyzed by author, could be used for the partial analysis (according to available statistical data) already now and would be important contribution to the evaluation of GBSCs impact on macroeconomic indicators.

The analysis of economic multiplier effect of GBSCs, which according to the author of this dissertation, is important expression of variety of macroeconomic indicators and seen as one of the fundamental mechanisms of local and regional development and occurs when one type of economic activity affects another (Domański, Gwosdz, 2010), in analyzed by the following researchers: Skowroński (2017), ABSL (2011), Micek (2011), Micek etl al (2011), Micek et al (2010) and others. The researchers in a descriptive way explain how multiplier effect manifests in macroeconomic indicators influenced by GBSCs and present some calculations of multiplier effect, which author of this dissertation treats as fragmental due to the limited accessible statistical data gathered by the researchers. Skowroński (2017) evaluated provision's multiplier effect and income multiplier effect of GBSCs. ABSL (2011), Micek (2011), Micek etl al (2011), Micek et al (2010) are summing the jobs created in different secondary, tertiary sectors of economy due to increase in household income and purchasing power provoked by GBSCs and in this way calculate income multiplier effect resulting from the activities of GBSCs. According to author of this dissertation, the mentioned mainly descriptive GBSCs multiplier effect on macroeconomic indicators researches are applicable for the dissertation and can be complemented with direct, indirect, induced and dynamic multiplier effects analysis (the methodology prepared by Economic Development Research Group, 1997) with the emphasis on each distinguished macroeconomic indicator in this dissertation. Also, author of the dissertation sees business case analysis of one of the biggest GBSCs in Lithuania as useful supplementary method to evaluate

probable multiplier effect on specific example.

Peculiarities of the research set the certain research methodological principles and rules for using the certain research methods. Due to the novelty of GBSCs phenomenon and lack of accessible GBSCs statistical data for single researcher, author of this dissertation faced the problem of limited possibility for usage of quantitative research methods mentioned in other related researches to explore novel understanding of GBSCs phenomenon impact on macroeconomic indicators. Qualitative data are collected from nonquantifiable or nonstatistically derived sources (Jervis, Drake, 2014) as in case of GBSCs. Qualitative approach is appropriate in the early stages of research, when the important variables relevant to a particular subject of inquiry may not yet be known (Creswell, 2009). The main source of GBSCs data are national promotion investment agencies or GBSCs experts reports and analysis, which explains the secondary data analysis (these reports analysis) as currently accessible and the most reliable data source for GBSCs and macroeconomic indicators parallels topic. Therefore, in the light of the current GBSCs evolution level and statistical data accesibility limitation, predominance of qualitative research methods is a typical feature for the selected dissertation topic. Taking into account the explained research methods applicability for this dissertation topic, such research methods as secondary data analysis, qualitative comparative analysis, descriptive statistics, modelling, forecasting/projections, personal observations, one-on-one interview/case study, experts survey, evaluation of multiplier effect and regression analysis (to limited extend, based on panel data analysis) would improve the current GBSCs impact on macroeconomic indicators exploration level. Each of the selected research method is described and reasoned below:

1. Secondary data analysis – the main data source for research of this dissertation is economic practice oriented literature mainly prepared by national investment promotion agencies or intermediaries – business services experts such as ABSL agency (association of business services leaders). This literature is reports, surveys, analytical works, presentations: ABSL (2016, 2019), Business Sevices Sector in the Czech Republic by ABSL (2016, 2017, 2019, 2020), Lithuania's Business Services Report (2016-2020), Business Services Centers in Hungary (2017-2020), Business Services Sector in Poland by ABSL (2014-2020), Business Services Sector in Romania by ABSL (2018-2020), Shared Service & Business Process Outsourcing Centers in Slovakia (2017-2020), Business Service Center Forum Slovakia (2015-2019).

2. Qualitative comparative and descriptive statistics analysis – author dis-

tinguished the main macroeconomic indicators groups, which can be influenced by GBSCs in selected CEE countries (see Table 4) and based on the literature sources distinguished above made comparative analysis of each of this macroeconomic indicators group influenced by GBSCs in selected CEE countries and distinguished the main insights, trends of the GBSCs market in CEE countries and its implication on macroeconomic indicators:

- Chapter *3.1.1. Global Business Services Centers Impact on Labor Market Indicators Testing Stage.* The following comparative analysis supported by descriptive statistics of labor market indicators in all selected CEE countries was performed: employment numbers in GBSCs, annual employment in GBSCs growth, GBSCs/total employment ratio, increase in number of GBSCs and their parallels to total unemployment and youth unemployment rates, average monthly salary in GBSCs and on national level, employers and employees contribution to job related taxes (GBSCs/social security funds collected contributions ratio) and some other labor market indicators aspects specifically occurring in CEE countries.

- Chapter *3.1.2. Global Business Services Centers Impact on Spending and Consumption Indicators Testing Stage.* The following comparative analysis supported by descriptive statistics of spending and consumption indicators in all selected CEE countries was performed: projected additional annual gross disposable income created due to higher average salary in GBSCs in 2020 (per one employee per year), projected additional annual gross disposable income created due to higher average salary in GBSCs in 2020/selected expenditure (food and non-alcoholic beverages; electricity, gas and other fuels; recreation and culture; education) in 2019 ratio, gross saving rate of households impacted by employment in GBSCs.

- Chapter *3.1.3. Global Business Services Centers Impact on Migration Indicators Testing Stage.* The following comparative analysis supported by descriptive statistics of migration indicators in all selected CEE countries was performed: emigration rate and re-emigration rate, which can be influenced by increasing number of working places in existing and new GBSCs.

- Chapter *3.1.4. Global Business Services Centers Impact on Life Quality Indicators Testing Stage.* The following comparative analysis of life quality indicators in all selected CEE countries was performed: comparison of financial and non-financial benefits offered to GBSCs employees, which influence GBSCs employees and their family members' life quality.

- Chapter *3.1.5. Global Business Services Centers Impact on Cross Sectorial Growth Indicators Testing Stage.* The following comparative analysis supported by descriptive statistics of cross sectorial growth indicators in all selected CEE countries was performed: real estate market growth influenced by building and rent of premises for developing and new GBSCs including office market snapshots and built stock occupied by GBSCs employees; cleaning market revenue due to 1 hour cleaning offices occupied by GBSCs in 2020 (only Czech Republic and Poland were compared due to lack of data for other countries); there was no possibility to perform the comparative analysis of other cross sectorial growth indicators mentioned in Chapter *3.1.5. Global Business Services Centers Impact on Cross Sectorial Growth Indicators Testing Stage* due to lack of data for all the selected CEE countries, so only Lithuanian or general examples were covered in further Chapters of the dissertation.

- Chapter *3.1.6. Global Business Services Centers Impact on Regional Development Indicators Testing Stage.* The following comparative analysis supported by descriptive statistics of regional development indicators in all selected CEE countries was performed: main capital and non-capital GBSCs locations and rising stars cities current situation, role and perspectives. Location quotient estimation, which shows given region GBSCs specialization (local concentration).

- Chapter *3.1.7. Global Business Services Centers Impact on Gross Domestic Product Related Indicators Testing Stage.* Employment and its components as the most important GDP aggregate was distinguished and comparative analysis supported by descriptive statistics was performed in Chapter *3.1.1. Global Business Services Centers Impact on Labor Market Indicators Testing Stage.* Spending/consumption and cross-sectorial growth indicators, which are the subsequent mostly impacted macroeconomic indicators and GDP components were analyzed in Chapters *3.1.2. Global Business Services Centers Impact on Spending and Consumption Indicators Testing Stage* and *3.1.5. Global Business Services Centers Impact on Cross Sectorial Growth Indicators Testing Stage.* Also, see the explanation of employment components as GDP aggregate in Chapter *3.1.7. Global Business Services Centers Impact on GDP Related Indicators Testing Stage.*

- Chapter *3.1.12. Research Results of Evaluation of Global Business Services Centers Impact on Macroeconomic Indicators Research Results* presents the summarized GBSCs descriptive statistics analysis.

3. Modelling – the method of modelling was used to design the methodology for the evaluation of GBSCs impact on macroeconomic indicators in CEE countries.

GBSCs macroeconomic outcomes evaluation model and complemented multiplier effect expression model were presented and explained in details in Chapter *2.2. Evaluation of Global Business Services Centers Impact on Macroeconomic Indicators Research Process*.

4. Forecasting/projections. The following projections for all selected CEE countries were performed in this dissertation: projected average monthly salary in GBSCs (see Table 19), GBSCs employment projections (see Table 20), projected additional gross disposable income created due to higher average salary in GBSCs in selected CEE countries (see Table 21).

5. Observations (mainly what author states as his own experience of working in one of the biggest GBSCs in Lithuania). Personal experience of author of this dissertation, who works in one of the biggest GBSCs in Lithuania, enforced author to make some observations and insights on the following topics: transportation (both air and land) services market growth influenced by GBSCs; tourism, accommodation and leisure time market growth influenced by GBSCs; education services and conferences market growth influenced by GBSCs; other secondary services market growth influenced by growth of GBSCs; multiplier effect of GBSCs impact on macroeconomic indicators in selected CEE countries and other.

6. One-on-one interview/case study. In order to reveal multiplier effect on Lithuanian economy, author has chosen SEB Global Services Vilnius (one of the biggest GBSCs in Lithuania) case study and conducted one-on-one interview with representatives from SEB Global Services and Technopolis Ozas (see Chapter *3.1.8. Evaluation of Multiplier Effect of Global Business Services Centers Impact on Macroeconomic Indicators*). One country from selected CEE countries and one of the biggest GBSCs in this country was chosen due to unavailability of data for other countries/GBSCs.

7. Experts survey. The main aims for experts survey was to find the persons competent in both GBSCs market and macroeconomic indicators fields and collect as much as possible data, alternative data sources, statistics, rank the macroeconomic indicators groups distinguished by author of this dissertation and receive other insights important to reveal the aspects of GBSCs impact on macroeconomic indicators in CEE countries. Author of the dissertation contacted the representatives from investment promotion agencies in all selected CEE countries by e-mail and surveyed the experts. Answers were received from the representatives from Lithuania, Poland and Slovakia (see Appendix 18 and Appendix 19 with survey questions and answers).

8. Evaluation of multiplier effect. Author of dissertation analyzed the GBSCs in selected CEE countries from prospective of direct, indirect, induced and dynamic multiplier effects according to methodology originally developed by Economic Development Research Group (1997) and adapted by other researchers. Also, author presented case study analysis of SEB Global Services in Lithuania on multiplier effect evaluation topic (see Chapter *3.1.8. Evaluation of Multiplier Effect of Global Business Services Centers Impact on Macroeconomic Indicators* and Chapter *3.1.9. SEB Global Services Vilnius Business Case as Example of Multiplier Effect of Global Business Services Centers Impact on Macroeconomic Indicators in Lithuania*).

9. Panel data analysis – since due to scarcity of statistical data there was limited possibility for unanimous conclusion in research on the link between GBSCs and macroeconomic indicators, fixed efefects, random effects and pooled OLS models of panel data were used to evaluate the GBSCs impact on selected available macroeconomic indicators in CEE countries. The applied models let identify and assess the correlation and direction (regression analysis) of the impact of GBSCs on macroeconomic indicators, for which sufficient statistical data was available (see Chapter 3.1.11. *Evaluation of Global Business Services Centers Impact on Macroeconomic Indicators Based on Panel Data Analysis).*

In summary, it can be said that the novelty of GBSCs phenomenon, specific intangible GBSCs macroeconomic outcomes and scarcity of statistical data on GBSCs topic encouraged author to choose the variety of mainly qualitative research methods, which, according to the author, can improve the current GBSCs impact on macroeconomic indicators exploration level. Author of this dissertation considers that standard quantitative research methods such as regression analysis used by the other researchers, who evaluate service sector/service sector FDI macroeconomic outcomes, could be applied for evaluation of GBSCs macroeconomic outcomes to the limited extend and could be reliable research method in the future when the sufficient sample size and research period is available. However, fixed effects, random effects and pooled OLS models of panel data, which were selected as additional research method in this dissertation, is treated by the author as supportive econometric method for evaluation of GBSCs impact on macroeconomic indicators, for which currently statistical data is available. The panel data model could be more extensive and reliable when more statistical data is available in the future.

2.2. Evaluation of Global Business Services Centers Impact on Macroeconomic Indicators Research Process

Choosing of research methods is the first stage of the whole research. However, the research process is comprehensive and contains such steps as modelling the evaluation of GBSCs impact on macroeconomic indicators, description of such research structural components as sample size, research period, main research data sources, logical structure of the research and research methods used for each logical part of the research, description of empirical research stages, reasoning of the research context, research limitations and other. Therefore, the subsequent Chapters contain GBSCs impact on macroeconomic indicators research process detalization.

2.2.1. Development of Model for Evaluation of Global Business Services Centers Impact on Macroeconomic Indicators

Taking into consideration previously analyzed global economy structure driven by service sector and service sector FDI, theoretical background of GBSCs business model as a consequence of changing behavior of economic subjects notified on both micro and macro levels, interconnectedness between GBSCs and macroeconomic indicators expressed by multiplier effect and other aspects analyzed in theoretical part of this dissertation, model for evaluation of GBSCs impact on macroeconomic indicators in selected CEE countries such as Czech Republic, Hungary, Lithuania, Poland, Romania, Slovakia (thereafter – model and CEE countries) has been developed (see Figure 14 and Tables 5-11). The model is based on the variety of macroeconomic indicators (see 7 macroeconomic indicators groups distinguished in Table 4), represents the macroeconomic outcomes of GBSCs and their interconnectedness, which manifest as direct, indirect, induced and dynamic multiplier effect in different value chains and also consists of such step as panel data analysis.

Table 4. *Variety of Macroeconomic Indicators Influenced by GBSCs*

Macroeconomic indicators impacted by GBSCs
Labor market indicators: - Employment in GBSCs: employment restructuring, number of working places enhanced by increasing GBSCs number– changes from year to year and projections, general employment / GBSCs employment ratio etc.   - Impact of GBSCs on youth employment indicators   - Employment of social sciences graduates in GBSCs   - Salaries in GBSCs compared to national minimum and average salaries   - GBSCs job related and other taxes
Spending and consumption indicators: - Increasing purchasing power of GBSCs employees and family members   - Increasing purchasing power of youth employed in GBSCs   - Increasing purchasing power of secondary, tertiary and further value chains according to multiplier effect   - Spending and consumption trajectories changes influenced by employment and increase in wages in GBSCs
Migration indicators: - GBSCs working places impact on preventing of brain drain   - GBSCs impact on lower emigration level   - GBSCs development and impact on re-emigration level
Life quality indicators: - Income and respectable working places/conditions in GBSCs   - Personal development and learning in international environment opportunities   - Attractive motivational packages   - Health/family/respect-oriented culture and values   - Respectable compensation for work   - Sustainability, inclusion and diversity emphasized in GBSCs

Macroeconomic indicators impacted by GBSCs
Cross-sectorial growth indicators:
- Real estate market growth influenced by building and rent of premises for developing and new GBSCs   - Catering market growth influenced by GBSCs   - Cleaning market growth influenced by GBSCs   - Transportation (both air and land) services market growth influenced by GBSCs   - Tourism market growth influenced by GBSCs   - Accommodation market growth influenced by GBSCs   - Leisure time market growth influenced by GBSCs (team buildings, massive sport events and other team activities)   - Education services and conferences market growth influenced by GBSCs   - Other secondary services market growth influenced by growth of GBSCs
Regional development indicators:
- Opportunities for rising stars cities other than capital   - Opportunities for youth from province   - GBSCs regional specialization (location quotient)
GDP related indicators:
Compensation of GBSCs employees, subsequent spending/consumption and cross-sectorial growth influenced by GBSCs as the main GDP aggregate

Source: *compiled by author, based on researches analyzed in dissertation and author's experience*

The structure of modelling evaluation of GBSCs impact on macroeconomic indicators in CEE countries including such components as macroeconomic indicators groups, multiplier effect manifestation, main questions raised by the author of this dissertation in each distinguished macroeconomic indicator group and used research methods is presented in Figure 13. The combination of different research methods in each macroeconomic indicator group is used to reveal the macroeconomic outcomes enhanced by GBSCs. These research methods are chosen according to the availability of statistical and other secondary data as well as according to the accessibility of them.

Author would like to emphasize that the vast majority of the researches on GBSCs impact on macroeconomic indicators analyzed in this dissertation are concentrat-

ed on one or several macroeconomic indicators, but possible multiplier effect of GBSCs impact on macroeconomic indicators is not being evaluated. As it is emphasized in Chapter of this scientific work, which was dedicated to reveal the interconnectedness between GBSCs and macroeconomic indicators expressed by multiplier effect (see Chapter *1.2.4. Interconnectedness Between Global Business Services Centers and Macroeconomic Indicators Expresses by Multiplier Effect),* multiplier effect of GBSCs starts from primary value chain, continues in secondary value change and reaches tertiary and further value chains. Also, multiplier effect manifests via direct, indirect, induced and dynamic effects. Therefore, economic multiplier effect of GBSCs implementation manifests from the activities of GBSCs organization itself, moves to employees activities (spending and consumption) enhanced by working in GBSCs and also creates value to other parties (intermediaries, vendors, suppliers or supportive services providers).
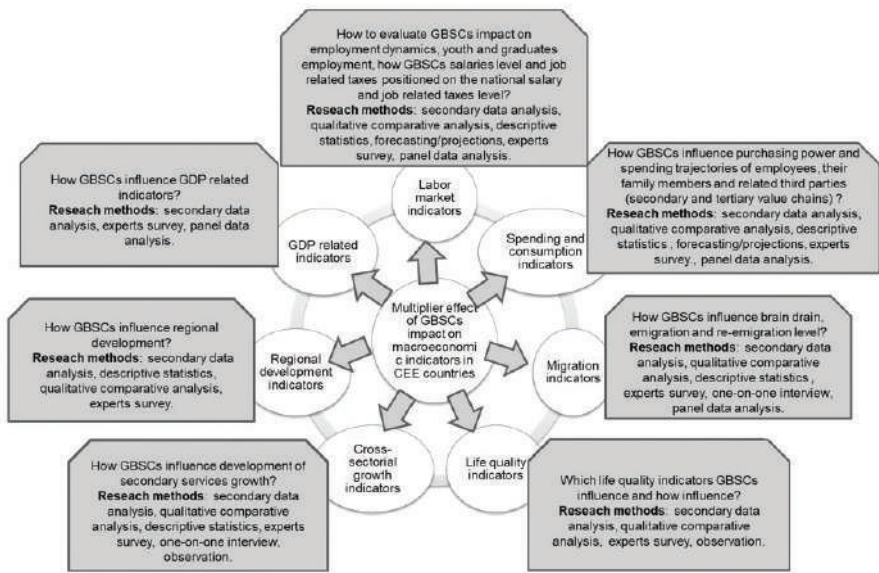
Figure 13. *Structure of Modelling Evaluation of Global Business Services Centers Impact on Macroeconomic Indicators*
Source: *compiled by author*

Taking this into account, author of this dissertation distinguished different groups of macroeconomic indicators, which can be influenced by GBSCs and aims to

reveal how economic multiplier effect manifests due to GBSCs implementations in selected CEE countries. The research of the dissertation includes the stages of evaluation of GBSCs impact on each distinguished macroeconomic indicators group (combination of different research methods is used for each macroeconomic indicators group), the evaluation of GBSCs macroeconomic outcomes multiplier effects and also panel data analysis (fixed, random effects and pooled OLS models) is used as a supportive econometric research method to reveal the GBSCs impact on macroeconomic indicators according to the currently available statistical data. According to the author of this dissertation, the exposure of the multiplier effect manifestation and using of panel data analysis for evaluation of GBSCs macroeconomic impact (other researches found and analyzed by author were with no or limited empirical research due to scarcity of statistical data and novelty of GBSCs phenomenon) show the relevance, novelty and significance of the dissertation research.

The research of this dissertation is based on the structure of modelling evaluation of GBSCs impact on macroeconomic indicators presented in Figure 13, the model for evaluation of GBSCs macroeconomic outcomes and multiplier effect manifestation (thereinafter – the model) presented in Figure 14 and complemented in Tables 5-11 and research logical structure presented in Figure 16. The model incorporates the evaluation of 7 macroeconomic indicators groups presented in Table 4, evaluation of GBSCs macroeconomic outcomes multiplier effect and evaluation of GBSCs impact on avaliable macroeconomic indicators using panel data analysis. Since the model is based on system approach and economic impacts (multipliers) approach, it can be named as one of the regional input-output model (Bureau of Economic Analysis, 2018; Micek, 2011) since the initial change in economic activity (GBSCs) results in diminishing rounds of other spendings. The model represents the main inputs, transformation processes and outputs as well as interconnectedness of GBSCs macroeconomic outcomes expressed by multiplier effect revealed in this dissertation and is also complemented by econometric research method based on panel data analysis. The model shows the complexity of the macroeconomic outcomes stimulated by GBSCs since there is close interconnectedness between all macroeconomic indicators groups presented in the model. The model is based on systematic view and it complements the view on macroeconomic outcomes of GBSCs presented in the existing related researches, which parallel macroeconomic indicators with GBSCs (see Table 3).

All the researches analyzed by author of this dissertation (see Table 3) parallel GBSCs with the labor market indicators (LMI) and only some researches parallel GB-

SCs with other macroeconomic indicators such as spending/consumption indicators (SCI), migration indicators (MI), life quality indicators (LQI), cross-sectorial growth indicators (CSGI), regional development indicators (RDI), GDP related indicators (GDPI). The majority of the researches concentrate on one or few macroeconomic indicators groups and parallel them with GBSCs. However, only few of the analyzed researches cover the aspects of difficult macroeconomic indicators interconnectedness and multiplier effect of GBSCs macroeconomic outcomes. According to the model presented in Figure 14, we cannot solely evaluate GBSCs impact on each group of macroeconomic indicators. This dissertation aims to evaluate the difficult interconnectedness between different macroeconomic indicators (see detalization in Table 4) impacted by GBSCs and emphasize the multiplier effect of macroeconomic outcomes of GBSCs. The model presented in Figure 14 reflects this view.
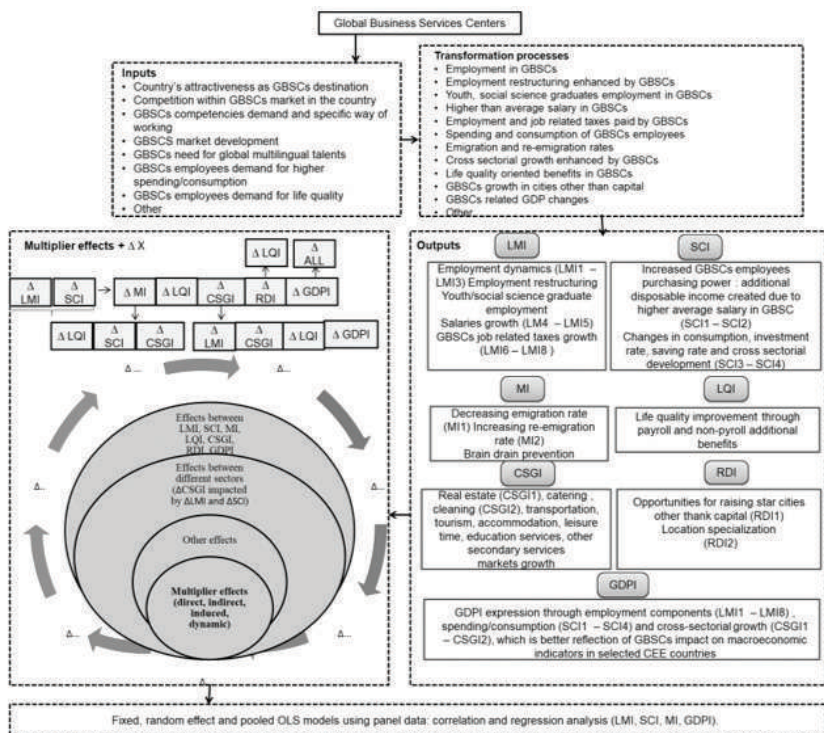
Figure 14. *Model for Evaluation of Global Business Services Centers Macroeconomic Outcomes and Multiplier Effect Manifestation*
Source: *compiled by author*

In order to evaluate the GBSCs multiplying macroeconomic outcomes as accurate as possible, the detailed explanation of the model was presented and macroeconomic outcomes multiplier effect manifestation was presented (see Tables 5-11). The quantitative and qualitative expressions, which were used in evaluation of multiplying macroeconomic outcomes of each of 7 distinguished macroeconomic indicators groups are defined below.

Table 5. *Model for Evaluation of GBSCs Macroeconomic Outcomes and Multiplier Effect Manifestation (ΔLMI)*

1. Change in labor market indicators stimulated by GBSCs (ΔLMI)	
Main LMI impacted by GBSCs: a. Quantitative expression: employment dynamics (ED), salaries growth (SAL), job related taxes (JRT). b. Qualitative expression: employment restructuring (ER), youth/social science graduate employment (YSCGE). c. Unknown/not evaluated LMI expression (X).	
Employment dynamics Annual employment growth in GBSCs $(\mathbf{LMI_1}) = \dfrac{Empl._T - Empl._{T\text{-}1}}{Empl._{T\text{-}1}}, \%$ GBSCs annual employment growth average μ $(\mathbf{LMI_2}) = \dfrac{LMI_1}{n}, \%$ GBSCs/total employment ratio $(\mathbf{LMI_3}) = \dfrac{Empl.}{TotEmpl.}, \%$ where: *Empl.* – employment in GBSCs; *Empl._T* – GBSCs employment in certain year; *Empl._{T-1}* – GBSCs employment in previous year; *n* – number of analyzed GBSCs employment years; *TotEmpl.* – total employment in CEE country.	Salaries growth GBSCs average monthly salary higher than national average monthly salary $(\mathbf{LMI_4}) = \dfrac{\mu GBSCsal. - \mu Natsal.}{\mu Natsal.}, \%$ Projected average monthly salary in GBSCs in 2020 $(\mathbf{LMI_5}) =$ $\mu GBSCsal._{2019} + 5\%$ where: *μNatsal.* – average national monthly salary in CEE country; *μGBSCsal.* – average monthly salary in GBSCs; *5%* - projected annual employment growth.

1. Change in labor market indicators stimulated by GBSCs (ΔLMI)	
Job related taxes Annual GBSCs contribution to personal income tax (LMI_6) = $\qquad$ Empl.·(μ$GBSCsal.$–TEI)·PIT·12 Annual GBSCs contribution to social contributions (LMI_7) = $\qquad$ Empl.×(μ$GBSCsal.$–TEI)·$SocCont$·12 GBSCs/social security funds collected contributions ratio (LMI_8) = $$\frac{LMI_6+LMI_7}{TotCont},\%$$ where: TEI – tax-exempt income; PIT – personal income tax; $SocCont$ – social employment contributions paid by employer and employee; 12 – number of months; $TotCont$ - Total receipts from taxes and social contributions collected by social security funds.	Employment restructuring, youth/social science graduate employment Other expression such as qualitative changes in employment market, new skills demand, GBSCs employment opportunities for youth and social science graduates etc. noticed in analysed literature and identified during secondary data, descriptive statistics analysis. Unknown/not evaluated LMI expressions Variable (X), which was currently not identified and analyzed in the research, but which possibly impacts LMI stimulated by GBSCs.

Source: *Compiled by author*

Labor market indicators (LMI) – the model (Figure 14) and supportive model (Table 5) show the quantitative expression (employment dynamics (ED), salaries growth (SAL), job related taxes (JRT)), qualitative expression (employment restructuring (ER), youth/social science graduate employment (YSCGE)) and unknown/not evaluated LMI expression (X), which contribute to multiplier effect stimulated by GBSCs. Annual employment growth in GBSCs (LMI_1) analysis shows the potential of GBSCs to contribute to further rapidly increasing employment or to long-term sustainable employment growth rate in CEE countries. GBSCs annual employment growth average μ (LMI_2) shows the speed of GBSCs growth and allows to make more accurate forecast of further employment growth within the GBSCs sector. GBSCs/total employment ratio (LMI_3) shows GBSCs contribution to general employment on national level and importance of constantly increasing market share of GBSCs in CEE countries. GBSCs average monthly salary higher than national average monthly salary in CEE (LMI_4) shows higher possible contribution to other macroeconomic indicators of one person employed by

GBSCs than one person employed by other average national CEE employer. Projected average monthly salary in GBSCs in 2020 (LMI_5) shows the potential for increasing salaries in GBSCs and enable the evaluation of more accurate macroeconomic outcomes of GBSCs in the last year (2020), when GBSCs salaries data is still unavailable. GBSCs contribution to personal income tax (LMI_6), social contributions (LMI_7) and GBSCs/social security funds collected contributions ratio (LMI_8) show GBSCs contribution to job-related taxes in CEE countries and also show that one employed by GBSCs in CEE country contributes to job-related taxes more than one person employed by other average national CEE employer. Other expressions such as qualitative changes in employment market, new skills demand, GBSCs employment opportunities for youth and social science graduates enable the identifying of intangible, hard to evaluate (due to data unavailability and accessibility and other reasons) macroeconomic outcomes and parallel them with GBSCs. Unknown/not evaluated LMI expressions (variable X) take into consideration other GBSCs LMI impacts, which were currently not identified and analyzed in the research, but which possibly are impacted by GBSCs. The changes in LMI impacted by GBSCs are the most important according to the author of this dissertation since they are creating primary conditions to stimulate the rest of changes in other macroeconomic indicators groups included into the research. Increasing purchasing power due to working places created in GBSCs and higher than average salaries in GBSCs stimulate the spending/consumption (or higher saving), dignified working conditions in GBSCs contribute to brain drain prevention, lower e-migration rate and higher re-emigration rate, LMI changes and dignified payroll and non-payroll benefits contribute to improvement of life quality of GBSCs employee and their family members, stimulate cross-sectorial growth through GBSCs spendings and GBSCs employees spendings (multiplier effect in secondary, tertiary and further value chains).

Table 6. *Model for Evaluation of GBSCs Macroeconomic Outcomes and Multiplier Effect Manifestation (ΔSCI)*

2. Change in spending/consumption indicators stimulated by GBSCs (ΔSCI)
Main SCI impacted by GBSCs: a. Quantitative expression: increased purchasing power (PP), changes in consumption (C), investment rate (I), saving rate (S) and cross-sectorial growth indicators (CSGI). b. Unknown/not evaluated SCI expression (X).

2. Change in spending/consumption indicators stimulated by GBSCs (ΔSCI)	
Increased purchasing power Projected additional annual gross disposable income created due to higher average salary in GBSCs in 2020 (SCI_1) = $$(LM_{I5} - \mu Natsal._{2020}) \cdot 12 x Empl.proj.$$ Increased purchasing power covering annual household consumption expenditure (SCI_2) = $$\frac{SCI_1}{HCExp.} , \%$$ where: *Empl.proj* – projected GBSCs employment in 2020; *HCExp.* – annual household consumption expenditure.	<u>Changes in consumption, investment rate, saving rate</u> Scenarios for GBSCs employees salary (SCI_3) $$C+I = \mu GBSCsal. = C+S$$ <u>Changes in cross sectorial development</u> GBSCs impact on revenue in secondary, tertiary and further value chains (SCI_4) $$C_{GBSC} + C_{GBSCEmpl.}$$ Also see *Change in cross-sectorial growth indicators stimulated by GBSCs (ΔCSGI)* where: C_{GBSCs} – GBSCs bussiness expenditures to maintain the business; $C_{GBSCsEmpl.}$ – GBSCs employees expenditures. <u>Unknown/not evaluated SCI expressions</u> Variable (X), which was currently not identified and analyzed in the research, but which possibly impacts LMI stimulated by GBSCs.

Source: *Compiled by author*

Spending/consumption indicators (SCI) – the model (Figure 14) and supportive model (Table 6) show the quantitative expression (increased purchasing power (PP), changes in consumption (C), investment rate (I), saving rate (S) and cross-sectorial growth indicators (CSGI)) and unknown/not evaluated SCI expression (X). Projected additional annual gross disposable income created due to higher average salary in GBSCs in 2020 (SCI_1) shows the additional gain possibly injected to analyzed CEE countries economies due to higher than average national salaries in GBSCs. Increased purchasing power covering annual household consumption expenditure (SCI_2) shows how the difference between GBSCs and national average salary in CEE contribute to the covering of household consumption expenditure and which part of them this difference can cover. Scenarios for GBSCs employees salary (SCI_3) show that average GB-

SCs salary, which is higher than average national analyzed CEE country salary, can both contribute to higher consumption and investment (this would generate additional working places and expenditures/consumption within secondary, tertiary and further value chains) and to consumption and saving rate (higher household saving rate leads to productive investment, it increases country's capacity to cope with a cyclical downturn (short term) and economy's capacity to finance itself (long term)). GBSCs impact on revenue in secondary, tertiary and further value chains (SCI_4) shows the cross-sectorial growth and multiplier effect derived from GBSCs consumption/expenditures for maintaining the business and GBSCs employees consumption. Unknown/not evaluated SCI expressions (variable X) take into consideration other GBSCs SCI impacts, which were currently not identified and analyzed in the research, but which possibly are impacted by GBSCs.

Table 7. *Model for Evaluation of GBSCs Macroeconomic Outcomes and Multiplier Effect Manifestation (ΔMI)*

3. Change in migration indicators stimulated by GBSCs (ΔMI)	
Main MI impacted by GBSCs: a. Quantitative: emigration (E), re-emigration (REE). b. Qualitative expression: brain drain (BD).t c. Unknown/not evaluated MI expression (X).	
Emigration rate (MI_1) = Emigration rate = $\dfrac{E}{P}$, % where: *E* – emigrants; *P* – population.	Re-emigration rate (MI_2) = Re- emigration rate = $\dfrac{RNat.}{E}$, % where: *RNat.* – nationals, who returned to their countries.
Brain drain Positive impact – brain drain prevention stimulated by GBSCs identified in scientific literature, in experts survey, GBSCs representatives interview. Unknown/not evaluated MI expressions Variable (X), which was currently not identified and analyzed in the research, but which possibly impacts MI stimulated by GBSCs.	

Source: *Compiled by author*

Migration indicators (MI) - the model (Figure 14) and supportive model (Table 7) show the quantitative expression (emigration (E), re-emigration (REE)), qualitative

expression (brain drain (BD)) and unknown/not evaluated MI expression (X). Emigration rate (MI_1) shows the potentially positive GBSCs impact on decrease in emigration rate in analyzed CEE countries. Re-emigration rate (MI_2) shows the potentially positive GBSCs impact on increase in re-emigration rate in analyzed CEE countries. Author of this dissertation also distinguishes non-numerical and hard to evaluate, but logical expression – brain drain prevention impacted by GBSCs increasing working places with dignified working conditions. Unknown/not evaluated MI expressions (variable X) take into consideration other GBSCs MI impacts, which were currently not identified and analyzed in the research, but which possibly are impacted by GBSCs.

Table 8. *Model for Evaluation of GBSCs Macroeconomic Outcomes and Multiplier Effect Manifestation (ΔLQI)*

4. Change in life quality indicators stimulated by GBSCs (ΔLQI)	
Main LQI impacted by GBSCs: a. Quantitative expression – salary (SAL). b. Qualitative expression: non-payroll benefits (NPB). c. Unknown/not evaluated LQI expression (X).	
Salary Dignified payroll benefits ensure better life quality of GBSCs employees and their family members. Also see *Change in labor market indicators stimulated by GBSCs (ΔLMI)*	Non-payroll benefits Motivation packages of non-payroll benefits offered to GBSCs employees identified in the literature and during GBSCs representative interview increase intangible value for employees and fulfil their self-development, mental, social, values and other needs, which increases life quality of GBSCs employees and their family members.
Unknown/not evaluated LQI expressions Variable (X), which was currently not identified and analyzed in the research, but which possibly impacts LQI stimulated by GBSCs.	

Source: *Compiled by author*

Life quality indicators (LQI) - the model (Figure 14) and supportive model (Table 8) show the qualitative expression and unknown/not evaluated LQI expression (X). The analysis of both payroll and non-payroll benefits offered by GBSCs in analysed CEE countries shows that there can be much more intangible benefits for GBSCs employees, their family members and whole economy. Unknown/not evaluated LQI expressions

(variable X) take into consideration other GBSCs LQI impacts, which were currently not identified and analyzed in the research, but which possibly are impacted by GBSCs.

Table 9. *Model for Evaluation of GBSCs Macroeconomic Outcomes and Multiplier Effect Manifestation (ΔCSGI)*

5. Change in cross-sectorial growth indicators stimulated by GBSCs (ΔCSGI)	
Main CSGI impacted by GBSCs: a. Quantitative expression – real estate market growth (REMG), cleaning market growth (CLMG) b. Qualitative expression: catering market growth (CAMG), transportation market growth (TRMG), tourism market growth (TMG), accommodation market growth (AMG), leisure time market growth (LTMG), education services market growth (ESMG). c. Unknown/not evaluated CSGI expression, other secondary services market growth (X).	
Real estate market growth Built stock part occupied by GBSCs employees (**CSGI₁**) = $$\frac{Sqm_{GBSC}}{Sqm_{TOT}}$$ where: Sqm_{GBSCs} – built stock part occupied by GBSCs employees; Sqm_{TOT} – total built stock.	<u>Cleaning services market growth</u> Cleaning market revenue due to 1 hour cleaning offices occupied by GBSCs (**CSGI₂**) = $$Sqm_{GBSC} \cdot CLR$$ where: *CLR* – hourly cleaning rate.
<u>Catering, transportation, tourism, accommodation, leisure time, education services markets growth and unknown/not evaluated SCGI expression, other secondary services market growth</u> Variable (X), which was currently not identified and analyzed in the research, but which possibly impacts LQI stimulated by GBSCs. Other secondary market growth, for which no available numerical data was accessible, but which are identified as impacted by GBSCs according to literature, experts interview and GBSCs representative interview.	

Source: *Compiled by author*

<u>Cross-sectorial growth indicators (CSGI)</u> – the model (Figure 14) and supportive model (Table 9) show the quantitative expression (real estate market growth (REMG), cleaning market growth (CLMG)), qualitative expression (catering market growth (CAMG), transportation market growth (TRMG), tourism market growth (TMG), accommodation market growth (AMG), leisure time market growth (LTMG),

education services market growth (ESMG)) and unknown/not evaluated CSGI expression, other secondary services market growth (X). Built stock part occupied by GBSCs employees ($CSGI_1$) and cleaning market revenue due to 1 hour cleaning offices occupied by GBSCs ($CSGI_2$) are examples of accessible to the author numerical GBSCs cross-sectorial growth expressions. They show how the existence of GBSCs contribute to secondary services providers revenue and growth. Other secondary markets growth, for which no available numerical data was accessible, but which are identified as impacted by GBSCs, show that the actual impact on cross-sectorial growth cannot be evaluated accurrately, but it is actually much higher. Unknown/not evaluated CSGI expressions (variable X) take into consideration other GBSCs CSGI impacts, which were currently not identified and analyzed in the research, but which possibly are impacted by GBSCs.

Table 10. *Model for Evaluation of GBSCs Macroeconomic Outcomes and Multiplier Effect Manifestation (ΔRDI)*

6. Change in regional development indicators stimulated by GB-SCs (ΔRDI)
Main RDI impacted by GBSCs: a. Quantitative expression – GBSCs part located in non-capital cities (NCC), location quotient (LQ). b. Unknown/not evaluated RDI expression (X).

GBSCs part located in non-capital cities ($\mathbf{RDI_1}$)= $$\frac{GBSC_R}{GBSC_{TOT}} ,=\%$$ where: $GBSCs_R$ –GBSCs employment or quantity in regions; $GBSCs_{TOT}$ – GBSCs employment or quantity in analysed CEE country.	Location quotient ($\mathbf{RDI_2}$)= $$\frac{\dfrac{Empl_{GBSCR}}{Empl_{TOTR}}}{\dfrac{Empl_{GBSCRTOT}}{Empl_{TOT}}}$$ where: $EMPL_{GBSCsR}$ –GBSCs employment in given region; $Empl_{TOTR}$ – total employment in given region; $EMPL_{GBSCsTOT}$–GBSCs employment in all locations under analysis; $Empl_{TOT}$– total employment in all locations under analysis.

Unknown/not evaluated LQI expressions Variable (X), which was currently not identified and analyzed in the research, but which possibly impacts RDI stimulated by GBSCs.

Source: *Compiled by author*

Regional development indicators (RDI) - the model (Figure 14) and supportive model (Table 10) show the quantitative expression (GBSCs part located in non-capital cities (NCC), location quotient (LQ)) and unknown/not evaluated RDI expression (X). GBSCs part located in non-capital cities (RDI_1) shows the GBSCs impact on regional development. Location quotient (RDI_2) shows the GBSCs concentration in given location or in other words, GBSCs specialization of given location. Unknown/not evaluated RDI expressions (variable X) take into consideration other GBSCs RDI impacts, which were currently not identified and analyzed in the research, but which possibly are impacted by GBSCs. Unknown/not evaluated RDI expressions (variable X) take into consideration other GBSCs RDI impacts, which were currently not identified and analyzed in the research, but which possibly are impacted by GBSCs.

Table 11. *Model for Evaluation of GBSCs Macroeconomic Outcomes and Multiplier Effect Manifestation (ΔGDPI)*

7. Change in GDP related indicators stimulated by GBSCs (ΔGDPI)
Main GDPI components impacted by GBSCs: LMI, SCI and CSGI. These components are better reflection of GBSCs macroeconomic outcome than GDP itself. Therefore, author of dissertation decided not analyse GDP indicator as separate indicator impacted by GBSCs.

Source: *Compiled by author*

GDP related indicators (GDPI) – the model (Figure 14) and detalization of it (Table 11) include GDPI as indicators impacted by GBSCs. However, GDP as separate macroeconomic impacted by GBSCs is not being evaluated due to the reason that author of this dissertation previously analyzed the most important GDP components as separate macroeconomic indicators – LMI, SCI and CSGI. These components, according to the author of this dissertation, are better reflection of GBSCs macroeconomic outcome than GDP itself.

Multiplying GBSCs macroeconomic outcomes expression shows that the change (expressed as Δ – delta) in each of distinguished macroeconomic indicator group should be evaluated not separately, but together since there are close and difficult interconnectednesses between all the macroeconomic indicators analyzed in this dissertation – labor market, spending/consumption, migration, life quality, cross-sectorial growth, regional development and GDP related indicators. Therefore, the multiplier

effect of GBSCs in analyzed CEE countries can be calculated as the sum of change in non-repeating numerical and non-numerical macroeconomic outcomes in each of 7 distinguished macroeconomic groups and unknown/not evaluated changes (ΔX), which was not included into the research, but potentially are influenced by GBSCs (see Tables 5-11 and Equation 1):

$$\Delta LMI = \Delta ED + \Delta ER + \Delta YSCGE + \Delta SAL + \Delta JRT + \Delta X$$
$$\Delta SCI = \Delta PP + (\Delta C + \Delta I \text{ or } \Delta C + \Delta S) + \Delta CSGI + \Delta X$$
$$\Delta MI = \Delta E + \Delta REE + \Delta BD + \Delta X$$
$$\Delta LQI = \Delta SAL + \Delta NPB + \Delta X$$
$$\Delta CSGI = \Delta REMG + \Delta CLMG + \Delta CAMG + \Delta TRMG + \Delta TMG + \Delta AMG + \Delta LTMG + \Delta ESMG + \Delta X$$
$$\Delta RDI = \Delta NCC + \Delta LQ + \Delta X$$
$$\Delta GDPI = \Delta LMI + \Delta SCI + \Delta CSGI + \Delta X$$

**Multiplier effect$_{GBSCs}$ =
ΔLMI + ΔSCI + ΔMI+ΔLQI+ΔCSGI+ΔRDI+ΔGDPI+$\Sigma\Delta$X$_{LMI,SCI,MI,LQI,CSGI,RDI,GDPI}$** (1)

The starting point here is labor market indicators, ΔLMI (see Figure 15) – change in number of employed and compensation for their work (income), which afterwards stimulate change in spending (consumption or investment) and/or saving ΔSCI. These changes consequently repeat the change flow in the secondary, tertiary and further value chains stimulated by GBSCs (change in cross-sectorial growth, $\Delta CSGI$). GBSCs, who offer attractive working places in terms of compensation for work and other valuable non-payroll benefits, stimulate such changes as change in life quality indicators (ΔLQI), change in migration indicators (ΔMI – brain drain prevention, increase in re-emigration rate, decrease in emigration rate and other). GBSCs, who are constantly looking for expansion opportunities in CEE also stimulate such changes as regional development (ΔRDI) or in some cases location specialization. These changes stimulated by GBSCs are inevitably positively impact GDP ($\Delta GDPI$). However, according to analysis made in this dissertation and surveyed experts, GDP expression through such components as employment indicators (ΔLMI), spending/consumption indicators (ΔSCI), cross-sectorial growth indicators ($\Delta CSGI$) mentioned above more accurately reflects GBSCs impact on macroeconomic indicators in selected CEE countries. There-

fore, GDP related indicators changes (ΔGDPI) are not being evaluated separately, but rather through employment (ΔLMI) and cross-sectorial indicators (ΔCSGI) together with spending/consumption indicators (ΔSCI) connections.

The multiplier effect view presented by the author of this dissertation shows that not only cross-sectorial growth impacted by GBSCs and their employees expenditures/consumption can be seen as multiplying (effects between different sectors ΔCSGI impacted by ΔLMI and ΔSCI, see Figure 14). Taking into account multiplier effect, all the changes in each distinguished macroeconomic indicator group tend to be interconnected. Therefore, one change in one macroeconomic indicator group can influence change in one or more than one macroeconomic indicators groups as presented below (effects between LMI, SCI, MI, LQI, CSGI, RDI, GDPI, see Figure 14).

The model presented in Figure 14 and complemented in Tables 5-11 indicate that **in the context of labor market indicators** as a result of such inputs as country's attractiveness as GBSCs destination and competition within GBSCs market in the country the following transformation processes take place: employment in GBSCs, higher than average national salary in GBSCs. These transformation processes lead to such outputs as increased purchasing power of GBSCs employees and their family members. As a result of increased purchasing power, two possible scenarios occur: 1. *increased spending/consumption* – positive changes in household consumption expenditure, investment and cross-sectorial growth indicators; 2. *increased saving* – changes in household saving rate determine *short term effect* (country's capacity to cope with a cyclical downturn) and *long term effect* (economy's capacity to finance itself). Therefore, **labor market indicators impacted by GBSCs also affect spending/consumption indicators.**

What is more, the model presented in Figure 14 and complemented in Tables 5-11 indicate that **in the context of labor market indicators** as a result of such inputs as country's attractiveness as GBSCs destination, competition within GBSCs market in the country and GBSCs competencies demand and specific way of working the following transformation processes take place: employment in GBSCs, higher than average salary in GBSCs, employment restructuring enhanced by GBSCs, youth, social science graduates employment in GBSCs. These transformation processes lead to such outputs as growth in secondary/ tertiary value chains, brain drain prevention and higher re-emigration rate. Therefore, **labor market indicators impacted by GBSCs also affect cross-sectorial growth indicators and migration indicators.**

Moreover, the model presented in Figure 14 and complemented in Tables 5-11 indicate that **in the context of labor market indicators and spending/consumption indicators** as a result of such inputs as GBSCs employees demand for higher spending/consumption and GBSCs contribution to GDP related aggregates the following transformation processes take place: employment in GBSCs, higher than average salary in GBSCs, spending and consumption of GBSCs employees, employment and job related taxes paid by GBSCs, cross sectorial growth enhanced by GBSCs. These transformation processes lead to such outputs as better life quality on country level (also regional, family members of GBSCs employees), cross-sectorial growth, positive effect on GDP related aggregates. Therefore, **labor market indicators together with spending/consumption indicators impacted by GBSCs also affect life quality indicators, cross-sectorial growth indicators, regional development indicators, and GDP related indicators.**

Furthermore, the model presented in Figure 14 and complemented in Tables 5-11 indicate that **in the context of migration indicators** as a result of such inputs as GBSCs need for global talents and GBSCs employees demand for life quality the following transformation processes take place: employment in GBSCs, higher than average salary in GBSCs, life quality oriented benefits in GBSCs. These transformation processes lead to such outputs as better life quality of re-emigrated nationals, GBSCs benefits stimulating youth re-emigration and brain drain prevention. Therefore, **migration indicators impacted by GBSCs also affect life quality indicators.**
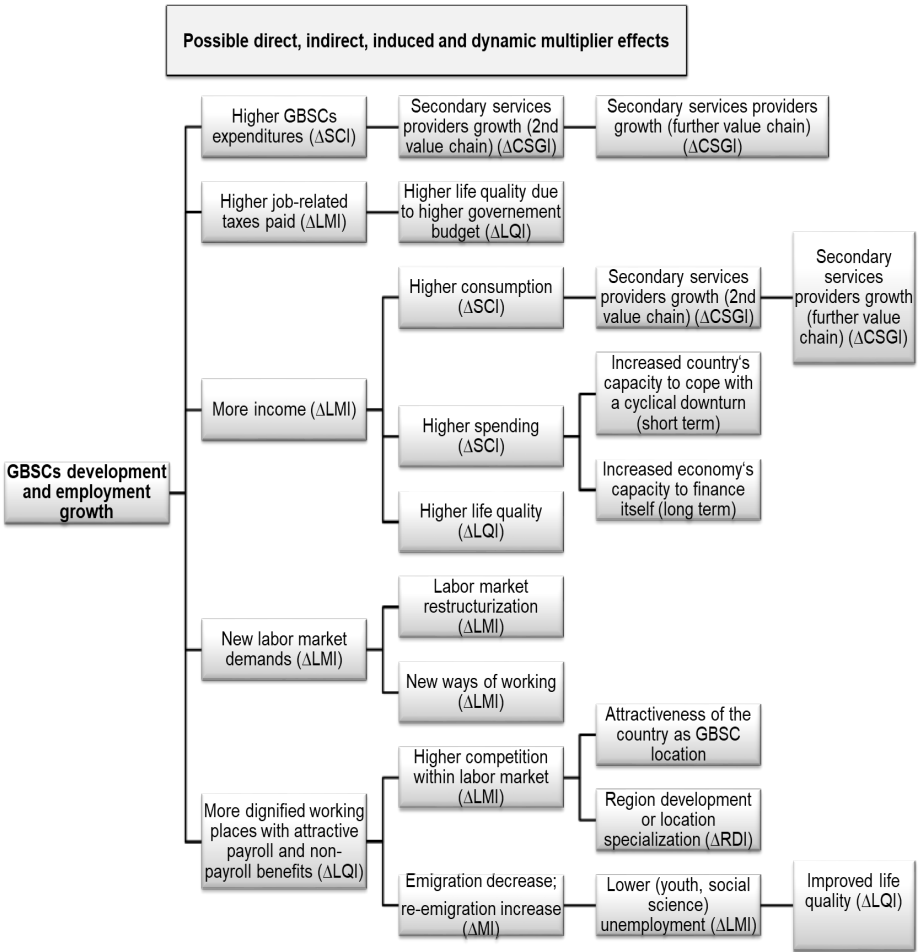
Figure 15. *Global Business Services Centers Macroeconomic Outcomes Interconnectedness and Possible Multiplier Effect Manifestation*
Source: *compiled by author*

Also, the model presented in Figure 14 and complemented in Tables 5-11 indicate that **in the context of life quality indicators** as a result of such input as GBSCs employees demand for life quality the following transformation processes take place: life quality oriented benefits in GBSCs, spending and consumption of GBSCs employees. These transformation processes lead to such outputs as cross-sectorial growth, higher

GBSCs employees spending. Therefore, **life quality indicators impacted by GBSCs also affect cross-sectorial growth and spending/consumption indicators.**

In addition to that, the model presented in Figure 14 and complemented in Tables 5-11 indicate that **in the context of cross-sectorial growth indicators** as a result of such input as GBSCs development the following transformation processes take place: employment in GBSCs, higher than average salary in GBSCs, spending and consumption of GBSCs employees, life quality oriented benefits in GBSCs. These transformation processes lead to such output as positive effect on GDP related aggregates (employment in secondary and further value chains their spending and consumption) and life quality indicators. Therefore, **cross-sectorial growth indicators impacted by GBSCs also affect GDP related indicators (labor market indicators, spending and consumption indicators) and life quality indicators.**

At the same time, the model presented in Figure 14 and complemented in Tables 5-11 indicate that **in the context of regional development indicators** as a result of such input as GBSCs development the following transformation process takes place: GBSCs growth in cities other than capital. This transformation process leads to such output as improved life quality of regions enhanced by GBSCs. Therefore, **regional development indicators impacted by GBSCs also affect life quality indicators.**

Finally**,** the model presented in Figure 14 and complemented in Tables 5-11 indicate that **in the context of GDP related indicators** as a result of such inputs as GBSCs development and main GDP aggregates, all transformation process described above take place and all the outputs described above create value for main GDP related indicators. Therefore, **GDP related indicators impacted by GBSCs also affect all macroeconomic indicators described above.**

Also, economic researches are usually based on econometric analysis. Therefore, despite the scarcity of GBSCs and related macroeconomic indicators data, additionally author decided to use fixed, random effects and pooled OLS models of panel data to evaluate the GBSCs impact on selected macroeconomic indicators in CEE countries. The applied fixed, random effects and pooled OLS models are not evaluating multiplier effect of GBSCs macroeconomic impact, but rather separate macroeconomic indicators. However, they let identify and assess the correlation and direction (regression analysis) of the impact of GBSCs on macroeconomic indicators, for which sufficient statistical data was available (see detailed research methodology in Chapter 2.2.1.1. *Panel Data Analysis Research Methodology*).

According to the author, there can be other macroeconomic indicators multiplying interconnectedness and multiplier effects, which were not evaluated by the author (other multiplier effects, see Figure 14). Therefore, author of this dissertation would like to emphasize that the model presented in Figure 14 and complemented in Tables 5-11 is not static and could be complemented with other macroeconomic outcomes found by the author or other researchers in the future. What is more, the model is characterized by universality, which shows that it can be also used to analyze other phenomenon related to GBSCs or even not related phenomenon such as other new business models or other. Moreover, the model is applicable for CEE countries, but can be also used in other context.

Model for evaluation of GBSCs macroeconomic outcomes and multiplier effect manifestation presented in Figure 14 and complemented in Tables 5-11, also Figure 15 reflect the logic of the research methods used by author. According to the author of this dissertation, the main emphasis of the dissertation is that we cannot assume that GBSCs make one or another macroeconomic impact by evaluating separate macroeconomic indicators. Thus, multiplier effect of GBSCs macroeconomic outcomes has to be evaluated. This position of the author of this dissertation leads to the analysis of the variety of macroeconomic indicators impacted by GBSCs, exploring the interconnectedness between them, using the variety of available research methods and revealing the GBSCs macroeconomic outcomes multiplier effects in as detailed way as possible. At the same time, despite the fact that the fixed, random effects and pooled OLS models applied in dissertation are not evaluating multiplier effect of GBSCs macroeconomic impact, but rather separate macroeconomic indicators, and despite the research limitation of short research period and small sample, using panel data analysis to evaluate the GBSCs impact on macroeconomic indicators according to currently available scarce ststistical data is valuable contribution to the economic research, which is usually being based on econometric analysis. These models will become less limited in the future when there are more GBSCs related statistical data available.

2.2.1.1. Panel Data Analysis Research Methodology

Panel data analysis allows to combine cross-sectional/spatial data (observing many subjects, in this particular case, CEE countries) and time-series data (data points over some period of time) analysis and take advantage of these methods such as broader data interpretation than separate cross-sectional or time-series data analysis.

Data set in panel data models. In panel data models, the data set consists of n cross-sectional/spatial units denoted $i = 1, 2, ..., N$, observed for each time period t, $t = 1, 2, ..., T$. The total of observations in the data set is (Alper, Anbar, 2011).

Specification. There are three main classes of estimation methods using panel data: pooled OLS (regression), fixed-effects and random-effects models. The equation presentation form somewhat differs in different sources, but in essence, the basic class of models can be written as (Baltagi, 2006):

$y_{it}=\alpha+X'_{it}\,\beta+u_{it}$, (2)

where y_{it} is the dependent variable, is a k-vector of regressors, is a k-vector of slope coefficients, is the error term, is the constant term.

Most panel data applications use a one-way error component model for the disturbances, with

$u_{it}=\mu_i+v_{it}$, (3)

where μ_i denotes the unobservable individual-specific effect and denotes the remaining errors. Those errors vary with individuals and time and can be thought of as the usual disturbance in the regression. In case of the two-way error components disturbance, the disturbances are expressed as:

$u_{it}=\mu_i+\omega_t+v_{it}, i=1,2,\ldots,N, t=1,2,\ldots,T$,   (4)

so the initial equation becomes

$y_{it}=a+X'_{it}\,\beta+\mu_i+\omega_t+v_{it}$, (5)

In case of pooled regression, i.e. pooled ordinary least squares (OLS), the equation is simply

$y_{it}=\alpha+X'_{it}\,\beta+\varepsilon it$, (6)

where ε_{it} are independent identically distributed errors, and, differently from (3), do not include any individual effects.

Various **diagnostic tests** can help to determine the correct specification, i.e. whether pooled regression, fixed-effects and random-effects model should be used. These tests are as follows:

Test for the joint significance of differing group means helps to determine whether a fixed-effects model is more suitable than pooled regression. If *p-value* is low ($p < 0.05$), meaning that the null hypothesis is rejected, that counts against the null hypothesis that the pooled ordinary least squares (OLS) model is adequate, in favour of the fixed effects alternative.

Breusch-Pagan test helps discriminate between a pooled OLS and random-ef-

fects model. Its null hypothesis is that the pooled OLS model is adequate. If its *p-value* > 0.05, then pooled regression is preferable, while if *p-value* < 0.05, random effects model is more suitable.

Hausman test's null hypothesis is that random effect model's estimates are consistent. A low p-value counts against the null hypothesis that the random effects model is consistent, in favor of the fixed effects model. If its *p-value* > 0.05, then random effects model is preferable, while if *p-value* < 0.05, fixed effects model is more suitable.

Pesaran CD test allows to check whether there is a need to include cross-section-specific effects. It used the null hypothesis that there are no cross-sectional dependence.

Wald test allows to check whether there is a need to include time-specific effects. It performs a joint test on time dummies, where the null hypothesis is no time effects.

Econometric model of empirical study. The panel data analysis was performed to evaluate the impact of GBSCs on the macroeconomic indicators in the analyzed CEE countries. In order to analyse the impact of GBSCs on CEE countries macroeconomic indicators, the regression formula (2) was applied:

$Y_{it}=\alpha+\beta \cdot GBSC_{it}+\theta \cdot A_{it}+c_i+g_t+\varepsilon_{it}$, (7)

where:

Y_{it} are dependent variables – macroeconomic indicators,

α– constant,

β– slope coefficient of interest that shows the impact of GBSCs market of macroeconomic indicators,

$GBSC_{it}$– indicators which reflect some characteristics of the GBSC market, e.g. it could be the number of GBSCs in a country, or the number of employees in the GBSC sector in a country,

θ – slope coefficient for other potential regressors,

A_{it}– additional variables (e.g. which help to improve statistic properties of the estimated equation),

c_i – country pseudovariables,

g_t – time pseudovariables,

ε_{it} – error term.

In case of random-effects method is applied, then , and the estimated equation is

$Y_{it}=(\alpha+c)+\beta \cdot GBSC_{it}+\theta \cdot A_{it}+g_t+(s_i+\varepsilon_{it})$, (8)

$Y_{it}=a+\beta \cdot GBSC_{it}+\theta \cdot A_{it}+g_t+w_{it}$), (9)

The compiled models were tested to ensure that the resulting coefficients were statistically significant and the residuals had the necessary properties for adequate specification.

According to Adkins (2014) it is necessary to check for errors of **autocorrelation**. Errors in the empirical model should not be correlated, i.e. they should not be linked. In some cases the autocorrelation of errors is eliminated by adding a late dependent variable to the model.

Also, **homoscedasticity** has to be examined. According to White test, the zero hypothesis, which states that the dispersion of errors is homoscedastic (scattered in the same way) and must be rejected when the pi value is less than 0.05. An alternative hypothesis is then accepted that the errors are heteroscedastic. According to Adkins (2014), it can be said that some observations may have a smaller or greater variation than other observations, and this state of the model is called heteroskedasticity.In the estimated models this aspect is corrected by using heteroskedasticity and autocorrelation consistent (HAC) standard errors, which ensures that p-values of various tests are robust and the inferences are not misleading

In most cases, such studies also test another assumption called **the normality of errors** (whether the errors are distributed according to the normal distribution). In the classical model of Čekanavičius, Murauskas (2014), regressors are considered to be error-free and non-randomised. It is also generally accepted that regression should also be considered as random. Regressors are better suited to the model, the more similar they are to normal random sizes (Čekanavičius, Murauskas, 2014). However, in the case of the dissertation research, the normality of the errors will not be verified, as it is not cross-sectional data but panel data and, in most cases, errors are never distributed by normal distribution.

Research sample and period. Six CEE countries are included in the analysis as in previous research in this dissertation (n=6). The data (see Appendix 22) refer to the period of thirteen years from 2007 to 2019 (T is from 4 to 13). This is an unbalanced data panel, as a number of countries did not provide certain data, do not have such data or are missing for a total period.

Characteristics of econometric model variables. The impact of GBSCs (two independent variables: GBSC (GBSCs number, X_1) and GBSCe (number of employees in GBSCs, X_2) on the following macroeconomic indicators (dependent variables)

was evaluated: LMI – unemployment rate, percentage of total population (Y_1); LMIY – youth unemployment rate, 15 to 24 years unemployed as percentage of total population (Y_2); REC – total receipts from taxes and social contributions, social security funds, million EUR (Y_3); ANEC – annual net earnings, single person without children earning 100% of the average earning (Y_4); SCI – final consumption expenditure of households, current prices, million EUR (Y_5); MI – reemigrated nationals (Y_6); GDPI – GDP at market prices, current prices, EUR per capita (Y_7). According to the panel data specification, cross-sectional/spatial data i and time-series data t are combined, i=1,2,…,N, and t=1,2,…,T. The selection of dependent variables was based on the previous research in this dissertation and statistical data availability.

Decision on the relevance of the correlation coefficient. The data characterising the object under investigation are often interlinked or interdependent. Such relationships can only be established with a certain degree of probability. The strength of the statistical relationship (correlation) can be estimated by correlation coefficients. Correlation analysis is designed to determine the relationship between grades or quantitative variables, its strength and direction. For the estimation of the linear relationship of quantitative variables, the correlation coefficient of Pearson is calculated.

In the standard approach to significance testing, one has a null hypothesis () and an alternative hypothesis (), which describes opposite and mutually exclusive patterns regarding some phenomena. Usually while the null hypothesis (*)* denies the existence of a relationship between X and Y, the alternative hypothesis () supports that X and Y are associated. Usually, scholars are interested in rejecting the null hypothesis in favor of the alternative hypothesis, since the alternative hypothesis represents the corroboration of the theoretical expectations of the researcher (Filho et al, 2013).

Software for correlation and regression analysis of panel data. Econometric analysis software packages SPSS, Gretl and EViews were used for different tasks in statistical and graphical data processing.

2.2.2. Structural Components of Research for Evaluation of Global Business Services Centers Impact on Macroeconomic Indicators

To reveal the GBSCs macroeconomic outcomes and their multiplier effect presented in the model (see Figure 14, Tables 5-11), certain research structure was chosen by the author of this dissertation. The following structural components will be described below: aim of the research, sample size, research period, research context, main

research data sources, logical structure of the research and research methods used for each logical part of the research.

The aim of the research is after theoretical analysis of GBSCs impact on macroeconomic indicators, to develop and empirically test the model, which evaluates the impact of GBSCs on macroeconomic indicators in CEE countries. As it was mentioned in the previous Chapter, the distinctive feature of the dissertation research is the exposure of GBSCs macroeconomic outcomes multiplier effect manifestation and using panel data analysis, which, according to the author, shows the relevance, novelty and significance of the dissertation research. The model combining the inputs, transformation processes, outputs and the manifestation of GBSCs macroeconomic outcomes multiplier effect is presented in Figure 14 and complemented in Tables 5-11.

Subject to statistical data availability, research period covers from 4 to 13 years (2007-2019) depending on country and analyzed macroeconomic indicator. The sample size is six CEE countries – Czech Republic, Hungary, Lithuania, Poland, Romania and Slovakia (n=6). The reasoning of the context for the research (selected six CEE countries) presented in the separate Chapter *2.2.2.1. Reasoning of Central and Eastern Europe Countries as Context for Evaluation of Global Business Services Centers Impact on Macroeconomic Indicators.*

The main data sources used for the research are the following:

1. CEE countries investment promotion agencies data from their reports/analysis: Czech Business and Investment Development Agency (CzechInvest), Hungarian Investment Promotion Agency (HIPA), Lithuanian Investment Promotion Agency (Invest Lithuania), Polish Investment and Trade Agency (PAIH), Romanian government's leading body in promoting and facilitating foreign investment (InvestRomania), Slovak Investment and Trade Development Agency (SARIO).

2. GBSCs and other business services experts data from their reports/analysis: *Association of Business Service Leader (ABSL)*, who is responsible for annual GBSCs reports in such CEE countries as Czech Republic, Poland and Romania; *Shared Services & Outsourcing Network*, which is worldwide community with over 100 000 members (*SSON*); global provider of audit and assurance, consulting, financial advisory, risk advisory, tax, and related services *Deloitte*; global network of independent member firms offering audit, tax and advisory services *KPMG*; the world's largest privately-held commercial real estate services firm *Cushman & Wakefield*; global professional network of assurance, tax and advisory services *PwC*; Division on Investment and Enterprise of

United Nations Conference on Trade and Development (UNCTD); Slovakian Chamber of Commerce or business community (AmCham); Slovakian Business Service Center Forum (BSCF) established with the mission to raise awareness of the GBSCs sector's role in the Slovak economy and help it grow further in Slovakia; other.

3. Scientific publications, articles, other researches according to the chosen and analyzed direction of the dissertation research. Full-text databases of Lithuanian and foreign scientific works are used to search for these data (for instance „*Academic Search Complete*", Internet access http://search.ebscohot.com/ etc.).

4. Statistical databases such as *Eurostat*, *World Bank*, *OECD, Trading Economics* and other.

5. Selected CEE countries (Czech Republic, Hungary, Lithuania, Poland, Romania and Slovakia) national statistics offices and institutions (for instance, *Lithuanian Ministry of Social Security and Labour, Migration Information Centre* and other).

The logical structure of the research is presented in Figure 16, according to which the research consists of four main parts – reasoning of research context, evaluation of GBSCs impact on each distinguished macroeconomic indicator and evaluation of multiplier effect of GBSCs impact on distinguished macroeconomic indicators and panel data analysis of GBSCs impact on selected available macroeconomic indicators.

First logical part of the research aims to select the comparable CEE countries, for which the most GBSCs data is available and which can be included into the research. For this reason evaluation of GBSCs market development level in CEE countries was done, comparative analysis of macroeconomic indicators in CEE countries was performed, comparison of *Doing Business* rank in CEE countries was done and CEE countries GBSCs data availability was evaluated (see more detailed information in Chapter *2.2.2.1. Reasoning of Central and Eastern Europe Countries as Context for Evaluation of Global Business Services Centers Impact on Macroeconomic Indicators*).

Second logical part of the research includes the comprehensive evaluation of GBSCs impact on each distinguished macroeconomic indicator group with combination of applicable research methods depending on the statistical and other data availability and accessibility. The following research methods were used in this second part of the research: secondary data analysis of mainly economic practice oriented literature prepared by investment promotion agencies or intermediaries – business services experts and comprehensive qualitative comparative analysis with descriptive statistics of each of distinguished by author macroeconomic indicators group influenced

by GBSCs. The comparative analysis, descriptive statistics: 1. *Labor market indicators*: employment numbers in GBSCs, annual employment growth in GBSCs, GBSCs /total employment ratio, increase in number of GBSCs and their parallels to total unemployment and youth unemployment rates, average monthly salary in GBSCs and on national level, employers and employees contribution to job related taxes (GBSCs/social security funds collected contributions ratio), some other labor market indicators aspects specifically occurring in CEE countries. 2. *Spending and consumption indicators*: projected additional annual gross disposable income created due to higher average salary in GBSCs in 2020 (per one employee per year), projected additional annual gross disposable income created due to higher average salary in GBSCs in 2020/selected household expenditure ratio, gross saving rate of households impacted by employment in GBSCs. 3. *Migration indicators*: emigration rate and re-emigration rate, which can be influenced by increasing number of working places in existing and new GBSCs. 4. *Life quality indicators*: comparison of payroll and non-payroll benefits offered to GBSCs employees, which influence GBSCs employees and their family members life quality. 5. *Cross sectorial growth indicators:* real estate market growth influenced by building and rent of premises for developing and new GBSCs including office market snapshots and built stock occupied by GBSCs employees, cleaning market revenue influenced by GBSCs, other impacted sectors growth. 6. *Regional development indicators*: main capital and non-capital GBSCs locations, rising stars cities current situation, role and perspectives, location quotient (local GBSCs specialization). 7. *Gross Domestic Product related indicators*: employment and its components as the most important GDP aggregate, spending/consumption and cross-sectorial growth as subsequent GDP components stimulated by employment in GBSCs; forecasting/projections: projected average monthly salary in GBSCs, GBSCs employment projections, projected additional gross disposable income created due to higher average salary in GBSCs in CEE countries; survey of Lithuanian, Polish and Slovakian experts from national investment promotion agencies.

The following research methods were used in the third logical part of the research, which aims to evaluate multiplier effect of GBSCs impact on distinguished macroeconomic indicators: modelling of evaluation of multiplier effect according to methodology developed by Economic Development Research Group (direct, indirect, induced and dynamic effects of GBSCs) complemented by author's offered methodology; one-on-one interview with the head of SEB Global Services Vilnius and the head

of services in Technopolis and business case study of SEB Global Services as example of multiplier effect of GBSCs impact on macroeconomic indicators in Lithuania; personal author's observations according to the experience collected while working in one of the most significant in size and scope GBSCs located in Lithuania, Vilnius.

Fourth logical part of the research concentrates on the panel data analysis. Fixed, random effects and pooled OLS models using unbalanced panel data was applied in order to evaluate the impact of GBSCs on macroeconomic indicators, for which statistical data was available.
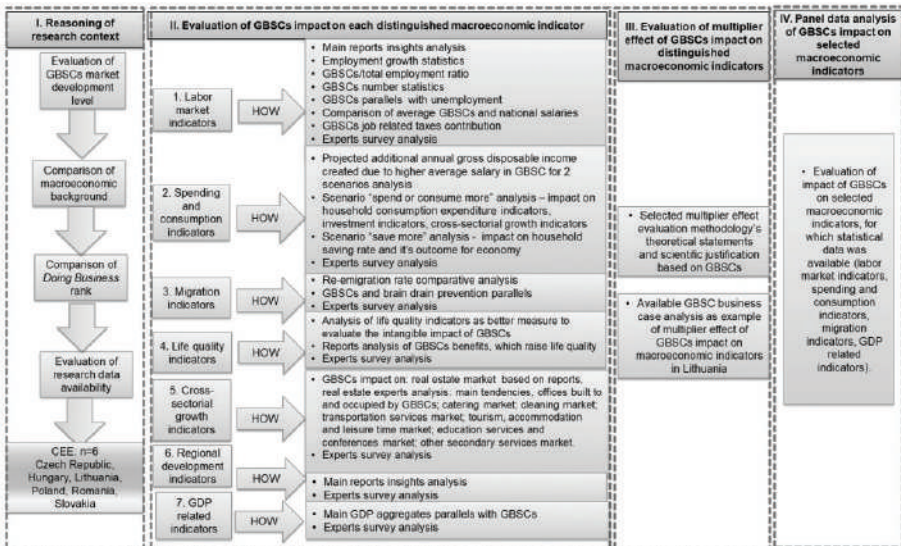
Figure 16. *Logical Structure of Dissertation Research*
Source: *compiled by author*

The reasoning for choosing the methods described above is based on the novelty of GBSCs phenomenon, specific intangible GBSCs macroeconomic outcomes and scarcity of statistical data on GBSCs topic. This encouraged author to choose the variety of mainly qualitative research methods, which, according to the author, can improve the current GBSCs impact on macroeconomic indicators exploration level (see more detailed reasoning in Chapter *2.1. Reasoning of Research Methods for Evaluation of Global Business Services Centers Impact on Macroeconomic Indicators*). Quantitative

research method such as panel data analysis is quite limited at the current stage of evolution of GBSCs phenomenon, but also significantly contributes to the research of the dissertation as econometric method, which was not found by author in any existing GBSCs related research. What is more, the distinctive feature of the dissertation research such as exposure of GBSCs macroeconomic outcomes multiplier effect manifestation, according to the author, is a valuable contribution to the GBSCs phenomenon exploration level and measuring the scope of GBSCs macroeconomic outcome.

2.2.2.1. Reasoning of Central and Eastern Europe Countries as Context for Evaluation of Global Business Services Centers Impact on Macroeconomic Indicators

The reasoning of CEE countries as context for model of evaluation of GBSCs impact on macroeconomic indicators consists of the following parts:

1. General overview of CEE region and it's growth paths in connection with internationalization, FDI and GBSCs market.

2. Reasoning of excluding from further analysis CEE countries with extremums in macroeconomic background and data availability[8] / reasoning of selection Czech Republic, Hungary, Lithuania, Poland, Romania and Slovakia as target group of countries for further GBSCs analysis based on comparative analysis of selected macroeconomic indicators from 7 subcategories distinguished by author in Table 4 (labor market indicators, spending and consumption indicators, migration indicators, life quality indicators, cross-sectorial growth indicators, regional development indicators and GDP related indicators).

There are many discussions about increasing importance of CEE in terms of economic development and this geographical region is seen as one of the most attractive destinations for international business form such as GBSCs in Europe (see country or region specific analysis of GBSCs presented in Chapter *1.2.3.2. Analysis of Macro Level Global Business Services Centers Researches* and information below).

Trąpczyński et al (2016) emphasize that there have been recent discussions about the extent, to which the CEE region still constitutes as unique business environment. The researchers notice that the region's economies have reached different levels of market development and of modern business practice adaption, some of them being frequently classified as advanced economies. Trąpczyński et al (2016) also emphasize

---

8   Reasoning of excluding will be mainly based on macroeconomic background presented in ABSL (2016).

the internationalization process, which played crucial role in the CEE region catch-up process and distinguish such attractive opportunities as privatization, lower costs and overall market size, which attracted a significant number of internationally operating firms to this region. These changes in the CEE region increased the number of empirical papers devoted to the analysis of international competitive position of the CEE.

It is important to mention that the comprehensive concept of the region competitiveness including not only traditional macroeconomic factors, but also factors determining quality of live, has to be taken into consideration (Stiglitz et al, 2009; Servetkienė, 2013 and others) and GBSCs destinations in the CEE region benefits have to be evaluated based on that (see Chapter *1.2.4. Interconnectedness Between Global Business Services Centers and Macroeconomic Indicators Expresses by Multiplier Effect* and Chapter *3.1.8. Evaluation of Multiplier Effect of Global Business Services Centers Impact on Macroeconomic Indicators*).

According to many of researchers and McKinsey Global Institute (2013), emerging economies, including those in CEE, will play an expanding role in the global economy. McKinsey Global Institute (2013) forecasted that by 2025, average economic growth in this region may rise to 4.6 %, making CEE one of the growth engines of Europe as a whole due to number of enablers such as expanding exports and rising export value added (outsourcing and offshoring, which are closely related to GBSCs phenomenon, are being emphasized), attracting renewed FDI inflows, raising domestic savings and other.

CEE is named as well established and excellent destination for GBSCs and BPO investment. With Poland the strongest location in the region, other countries such as Hungary, Czech Republic, Romania, Lithuania and Slovakia are important investment destinations (CEE Shared Services and Outsourcing Awards, 2020).

Skanska Commercial Development Europe, Colliers International, JLL and ABSL (2015) in their *CEE Investment Report* state that investing in the West is becoming less and less profitable, forcing companies to consider allocating capital elsewhere, in less obvious but still stable places. According to these criteria, CEE is the most attractive region benefiting from the safety that the EU provides, stability and sharing of western values.) The following strengths of CEE region are being distinguished in the report:

1. Economic stability;
2. Until 2020, CEE is the recipient of a huge inflow of funds from the EU;

3. Growing transparency;

4. Huge supply of high-quality multilingual labor;

5. Strategic location;

6. Strong internal market;

7. Relatively low costs.

These and other aspects of the CEE region increasing the need of analysis of different investment forms impact on separate CEE countries economies. Since the phenomenon analyzed in this dissertation is GBSCs, it is important to identify the target group of CEE countries for further GBSCs investments within CEE region analysis.

Data availability was the main criteria for the including into the research appropriate CEE countries. The grounding for choosing Czech Republic, Hungary, Lithuania, Poland, Romania and Slovakia as target group of countries for further GBSCs analysis is also based on the following reasons/factors:

1. Global insights from researches on CEE as GBSCs destination analyzed in this dissertation;

2. Outcomes distinguished after analysis of both SSON Analytics (2017) and ABSL (2016) researches;

3. Geographical similarities;

4. Similarities in circumstances and time of joining of EU;

5. Macroeconomic background similarities presented above;

6. Statistical data accesibility (there are some data inhomogenity problems due to not unified statistical data source, but there is at least some statistical data available).

The author of this dissertation aimed to select several CEE countries, which will be included into the model of evaluation of GBSCs impact on macroeconomic indicators. One more way to compare the countries according to important to GBSCs indicators is to analyze *Doing Business* indicators ranked and presented by the World Bank. *Doing Business* measures such topics as opening a business, getting a location, accessing finance, dealing with day-to-day operations and operating in a secure business environment among 190 economies and selected cities at the subnational and regional level. Ease of doing business according to this ranking is summarized in Table 12.

Table 12. *Ease of Doing Business in Selected CEE Countries*

Country	Region	Income category	City covered	Doing Business rank 201[9]	Doing Business score 2020
Czech Republic	OECD high income	High income	Prague	41	76.3
Hungary	OECD high income	High income	Budapest	52	73.4
Lithuania	OECD high income	High income	Vilnius	11	81.6
Poland	OECD high income	High income	Warsaw	40	76.4
Romania	Europe & Central Asia	Upper middle income	Bucharest	55	73.3
Slovakia	OECD high income	High income	Bratislava	45	75.6

Source: *Doing Business, The World Bank 2019*

All the selected CEE countries capitals except Bucharest are categorized as OECD high income region and high income category countries and their *Doing Business* ranks 2020 are similar (from 40 to 55 out of 190 economies except Lithuania, which is ranked as 11th according to ease of *Doing Business*). It is one more argument for selection of the particular CEE countries for further analysis in this dissertation. Author would also like to emphasize that despite the fact that Romania is similar to other selected CEE countries according to some macroeconomic indicators according to ABSL (2016) and other criteria mentioned in this chapter above, it has different income category and the lowest *Doing Business* rank and score. Therefore, author decided to include Romania to research and eliminate this country in case research will show other deviations of this country among other selected CEE countries.

---

9   Out of 190 economies

2.2.3. Research Limitations

Research performed in this dissertation is characterized by peculiar features, which dictated certain research methodological principles. The main reason for peculiarities of the research and some deviations from standard research is that GBSCs is a comparatively new phenomenon, which has no unified understanding among researchers and practitioners yet and which is lacking unified statistical data, which could be used to analyze how GBSCs impact economy. The majority of the existing researches concentrate on GBSCs impact on microeconomic/companies aspects, which is usually derived from evaluation of specific surveys with a comparatively small sample, i.e. only small part of GBSCs from all GBSCs population is being included into the surveys due to the access only to some disclosed GBSCs data and unwillingness of GBSCs to disclose the data, which can be treated as sensitive due to hyper competition conditions within GBSCs market.

Author of this dissertation, whose target is to evaluate the impact of GBSCs on macroeconomic indicators in selected CEE countries, believes that the lack or limited number of general statistics (such as number of GBSCs, employed in GBSCs end employment dynamics, youth employment in GBSCs, salaries in GBSCs, cross-sectorial growth due to GBSCs appearance and development etc.) about GBSCs in selected CEE countries is a result of:

1. Understanding of GBSCs as new phenomenon – evolution of the phenomenon and transition from Shared Services Centers definition to Global Business Services Centers definition results in discussion what this phenomena is about and what data should be gatheres. What is more, the majority of available statistical data mainly provided by investment promotion agencies in selected CEE countries is at starting point of publishing or reach only few previous years.

2. Lack of awareness and political will to investigate the peculiarities in GBSCs market – author noticed that despite the fact that GBSCs are named as priority sector in the majority of investment promotion agencies of selected CEE countries, which means that the awareness and political will to investigate GBSCs market and its impact on economies is increasing, but there is still no common view on how to do it and there is no regulation for GBSCs to publish data on a compulsory basis. Some countries such as Poland, Czech Republic and Romania has chosen ABSL as a partner to analyze and present reports on GBSCs market, which is in author's opinion is a first step to GBSCs

statistical data unification and further development. However, for some countries it is just starting point and such country as Romania, who claims in ABSL report of Business Services Sector in Romania (2018, 2019) and Romania's Business Service Sector IT&C, SSC & BPO presentation (2018) that the majority of GBSCs organizations in Romania are highly matured, shows the example that this country started to collect and publish statistics on country level only from year 2018 (no previously published statistical data on GBSCs found by author apart these two documents). The rest of the selected CEE countries – Hungary, Lithuania and Slovakia – are performing GBSCs sector analysis and publishing the reports with the help of investment promotion agencies and other institutions in these countries, who are seen as the best experts in this field. In any case, GBSCs statistics in selected CEE countries counts few years. In author's opinion, unified reporting by ABSL partners would be a good solution for further collecting and publishing of representative GBSCs statistics in all CEE countries in the future. However, this is a political decision on each country level.

3. Fear of GBSCs representatives to disclose sensitive data – author's personal experience shows that it is difficult for single researchers to access GBSCs statistical data, to reach the majority of GBSCs management and ask for data, which they are not obliged to disclose. Therefore, compulsory regulation to include statistical data about GBSCs on selected CEE countries level would be a solution for further deeper analysis of GBSCs sector impact on countries economic indicators.

As a consequence, these conditions affected the research of dissertation. The main limitations noticed by author while performing research on GBSCs impact on macroeconomic indicators in selected CEE countries, which complicated the research and it's results interpretation are listed below:

1. Fragmentation of GBSCs literature and lack of prior research studies on the topic – author of this dissertation would name GBSCs as comparatively new and narrowly studied phenomenon. Despite the fact that number of researches on GBSCs topic is increasing in recent years, there is clear predominance of research revealing the GBSCs impact on microeconomic indicators or managerial aspects rather than macroeconomic indicators. What is more, GBSCs related topics are mainly being escalated in economic practice oriented literature (prepared by business representatives and/or investment promotion agencies or some other institutions) rather than scientific literature. Furthermore, author found and analyzed insignificant number of researches, which cover macroeconomic indicators influenced by GBSCs and these researches are

usually limited to only some macroeconomic aspects analysis (usually traditional macroeconomic indicators), but not comprehensive, multidimensional macroeconomic indicators analysis (see more information in Chapter *1.2.3. Scientific Exploration Level of Global Business Services Centers as Segment of Services Sector Foreign Direct Investment in Context of Social Science* and Chapter *1.2.3.1. Analysis of Micro Level Global Business Services Centers Researches in Managerial and Economic Literature).* Therefore, due to this limitation the research of this dissertation is mainly based on economic practice oriented literature, which escalates GBSCs impact on one or few macroeconomic indicators.

2. <u>Differences in definition of GBSCs phenomenon</u> - in the recent years the business model analyzed in this dissertation experienced breaking point in the scope of responsibilities as well as change in definition, which evolved from Shared Service Centers to Global Business Services Centers. Transitional moment of change of scope and definition of this new phenomenon results in some differences in naming it in different literature sources. It can lead to some discussions on this topic since the same business model can be named differently (Shared Service Centers, Global Services, Business Services, Global Business Services, Global Business Services Centers), but the meaning of it is the same, just the time of analysis is different and the scope of the phenomenon is broader.

3. <u>Lack of available and comprehensive statistics on the topic</u> – there is no problem to find statistics on macroeconomic indicators in selected CEE countries. However, there is lack of unified statistical data on GBSCs topic on selected CEE countries level. There is some statistics such as number of GBSCs, employed in GBSCs, average salary in GBSCs in selected CEE countries, but due to the fact that GBSCs is comparatively new phenomenon, it usually takes start only few years ago, so this limited short-term statistical data cannot be used together with macroeconomic indicators statistics in econometric models or other quantitative techniques to make reasoned conclusions on the dissertation topic. Therefore, due to this limitation author combined such researches methods as secondary data analysis, qualitative comparative analysis, descriptive sttaistics forecasting/projections, observations (mainly what author states as her own experience of working in one of the biggest GBSCs in Lithuania), one-on-one interview/case study (see Chapter *3.1.9. SEB Global Services Business Case as Example of Multiplier Effect of Global Business Services Centers Impact on Macroeconomic Indicators in Lithuania)*, experts survey (see Chapter *3.1.10. Central and Eastern Europe Countries*

Investment Promotion Agencies Experts Survey Analysis), evaluation of multiplier effect (see Chapter *3.1.8. Evaluation of Multiplier Effect of Global Business Services Centers Impact on Macroeconomic Indicators*), panel data analysis (fixed, random effects and pooled OLS models of unbalanced panel data) for selected macroeconomic indicators impacted by GBSCs (see Chapter 3.1.11. *Evaluation of Global Business Services Centers Impact on Macroeconomic Indicators Based on Panel Data Analysis*). See more information about the used research methods in Chapter *2.1.3. Reasoning of Research Methods.*

4. Lack of access to sensitive GBSCs data – lack of unified statistical data of GB-SCs on selected CEE countries level could be partially solved by publishing some data about GBSCs in selected CEE countries. However, this data is not compulsory to report on country level and usually GBSCs emphasize the sensitiveness of this information. Therefore, only some available and disclosed or observed by author data about some GBSCs in selected CEE countries was analyzed in the research.

5. Predominance of secondary data analysis – the majority of generalizations made by author of this dissertation are based on results of secondary data analysis. Therefore, already performed researches by mostly investment promotion agencies in selected CEE countries, were used as a basis for analysis and performing research made by the author.

6. Lack of interest of experts to contribute to research – author experienced difficulties in receiving the response from GBSCs area experts from investment promotion agencies in selected CEE countries. Experts from Hungary refused to fill in the questionnaire and no response received from the Czech Republic and Romania. During e-mail conversations with number of experts, author noticed that some bureaucratic procedures, fear to disclose sensitive information about the country or comparatively new GBSCs analysis experience in selected CEE countries were main reasons why this limitation occurred.

7. CEE countries as a context for research – increasing investors' attention to CEE countries in as destinations for GBSCs in Europe encouraged the author to choose this region as the context for the research. Hungary, Lithuania, Poland, Romania and Slovakia were included into the research according to available statistical data. Subject to data availability, research period covers from 4 to 13 years (2007-2019) depending on country and analyzed macroeconomic indicator.

Author of this dissertation would like to emphasize that the majority of research limitations distinguished above are related with the novelty of GBSCs phenomenon.

New and not sufficiently explored phenomenon raises many questions and complicates the research and usage of standard quantitative research methods to reveal the economic nature of this phenomenon. However, author of this dissertation finds this as an evidence of the need of researches on GBSCs topic and this dissertation could significantly contribute to the scientific exploration level of the GBSCs phenomenon together with it's parallels with macroeconomic indicators. What is more, mainly qualitative research methods are available and accessible at this moment until few years pass and more GBSCs related statistical data for quantitative research methods is available. Quantitative research methods can be used at this GBSCs phenomenon development stage. However, using of quantitative research methods face many limitations mainly related to the gathering and analysis of scarce statistical data. Nevertheless, panel data analysis (fixed, random effects and pooled OLS models of unbalanced panel data) was applied where possible in this dissertation and this research part significantly contributes to the whole dissertation research as reliable econometric method.

3. TESTING OF DEVELOPED MODEL FOR EVALUATION OF GLOBAL BUSINESS SERVICE CENTERS IMPACT ON MACROECONOMIC INDICATORS IN CENTRAL AND EASTER EUROPE COUNTRIES

3.1. Testing of Model of Evaluation of Global Business Services Centers Impact on Macroeconomic Indicators

The aim of third part of this work is to test the model distinguished in Figure 14 and complemented in Tables 5-11. Therefore, the third part of this scientific work will include the research of 7 macroeconomic indicators groups, which are being influenced by GBSCs in selected CEE countries, including evaluation of GBSCs macroeconomic outcomes multiplier effects and panel data analysis (see summarized data, quantitative and qualitative expression of the main GBSCs macroeconomic outcomes in Appendix 4, Table 43 and Table 44). The summarized research data was derived during testing of model of evaluation of GBSCs impact on macroeconomic indicators in selected CEE countries. The testing consists of the following testing stages according to selected macroeconomic indicators groups: labor market indicators; spending and consumption indicators; migration indicators; life quality indicators; cross sectorial growth indicators; regional development indicators; GDP related indicators. Also, testing includes evaluation of multiplier effect of GBSCs impact on macroeconomic indicators in CEE, which is seen by the author of this dissertation as research distinctive feature. First of all, Economic Development Research Group methodology's theoretical statements and scientific justification based on GBSCs are presented – direct, indirect, induced and dynamic effects are evaluated. Secondly, SEB Global Services Vilnius business case analysis as example of multiplier effect of GBSCs impact on macroeconomic indicators in Lithuania is presented. Finally, testing of GBSCs impact on available macroeconomic indicators using panel data analysis was done (see dissertation research logical parts in Figure 16).

3.1.1. Global Business Services Centers Impact on Labor Market Indicators Testing Stage

First GBSCs impact on macroeconomic indicators in selected CEE countries

stage is testing how labor market indicators are being influenced by GBSCs (see Figure 17). Author's aim is as accurately as possible for each selected CEE country to answer to the following questions: how to evaluate GBSCs impact on employment dynamics, youth and graduates employment, how GBSCs salaries level and job related taxes positioned on the national salary and job related taxes level? In order to answer to these questions, labor market indicators analysis of each selected CEE country is presented below. The following sources were used for the analysis: Business Services Sector in the Czech Republic by ABSL (2016, 2017, 2019, 2020), Paslaugų centrai Lietuvoje (2015), Lithuania's Business Services Report (2016-2020), Business Services Centers in Hungary (2017-2020), Business Services Sector in Poland by ABSL (2014-2020), Romania's Business Service Sector IT&C, SSC & BPO (2018, 2020), Business Services Sector in Romania by ABSL (2018-2020), Shared Service & Business Process Outsourcing Centers in Slovakia (2017-2021), Eurostat statistics, selected CEE countries national statistics offices.

Research methods used in this part of scientific work: secondary data analysis, qualitative comparative analysis, descriptive statistics, forecasting/projections, experts survey, panel data analysis.
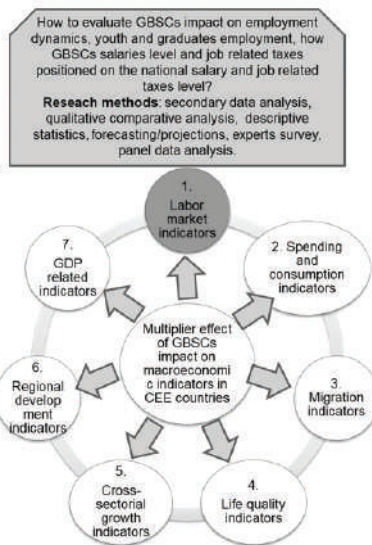
Figure 17. *Labor Market Indicators Testing Stage Elements*
Source: *compiled by author*

122

First of all, comparative analysis of main labor market changes enhanced by GBSCs in analyzed CEE countries was made based on the literature sources mentioned above (see Table 13).

Table 13. *Labor Market Changes Enhanced by GBSCs*

Labor market change aspects	Country specifics[10]
	Czech Republic
Employment dynamics	Second highest GBSCs employment growth and leadership in GBSCs market share. GBSCs employment almost doubled from 2014 to 2019 and the employment growth is higher than projected by the experts. GBSCs sector is one of the largest employers and one of the fastest growing industries in the country. Slowing GBSCS employment growth is expected in next years. GBSCs sector is maturing and gravitating towards a long-term sustainable employment growth rate.
Youth/social science graduates employment	72 % of GBSCs employees are millenials or generation Z (from early early 1980's to mid 2000's). 2015-2019 years show significant decrease in youth unemployment, which can be related to increasing youth employment in GBSCs.
Employment restructuring	Social, technological developments and GBSCs development are changing our working lives and careers. Four dynamics of change in workplace learning are being emphasized: technology (change in ways of working, automation of job tasks and requirement of new skills), evolving workplace (interpretation of data, communication, vision and strategy will be top responsibilities in future), self-curate learning (moving from the traditional, so called „ladder" path to a more dynamic path where we increasingly make career choices aligned to our personal growth agendas), flexibility in career. GBSCs reflect the trend of the emerging jobs of the future, which are more knowledge-based than transactional services. Increasing demand for robotics and automation experts, data scientists and analysts, experts in digital transformation, social media, digital content administrators is seen.

---

10 Comparative analysis made based research made in this dissertation (period 2007-2019, selected and analyzed CEE countries). GBSCs growth average (Table 14), market share according to GBSCs/total emplyment ratio (Table 15), youth unemplyment statistics (Figure 19) were used for this comparative analysis.

Labor market change aspects	Country specifics
GBSCs and educational institutions cooperation to meet the increasing GBSCs labor market demand	Global reach of GBSCs increases their demand for language capabilities. Mentioned labor market transformation and employment restructuring aspects enhance national education strategy to adapt to the new labor market demands and reflect this in national study programmes.
	Hungary
Employment dynamics	Average, but stable growth in employment in GBSCs. GBSCs employment doubled from 2014 to 2019. One of the most mature GBSCs markets in the CEE region (50 % of GBSCs are operating within the market for more than 11 years already).
Youth/social science graduates employment	-
Employment restructuring	GBSCs broaden the scope of high-value added activities and place greater emphasis on conscious talent management, education cooperation and innovation. Data analytics and automation become extensive in this field, employee skillsets are also undergoing changes. Specialist roles, such as data analyst, finance analyst, and software engineer, make up an increasingly larger proportion of the workforce sought by companies, while there is a similar growing demand for experienced employees with advanced skills.
GBSCs and educational institutions cooperation to meet the increasing GBSCs labor market demand	More and more GBSCs have realised the importance of cooperation with educational institutions. Almost two-thirds of them have some form of relations with educational institutions. There are successful regional initiatives (e.g.: Debrecen, Szeged), where companies have established joint co-operation with the local educational institutions in different fields (e.g.: professional knowledge sharing and GBSCs specific language courses). This cooperation can result in the better reaction to further GBSCs employment demands.

Labor market change aspects	Country specifics
	Lithuania
Employment dynamics	Third highest GBSCs employment growth. GBSCs employment doubled from 2014 to 2019. Rapid positive changes in employment structure in GBSCs and constant increasing number of GBSCs show Lithuania is emerging market with high potential for further growth.
Youth/social science graduates employment	Average age of GBSCs employee in Lithuania is 30 years and the majority of employed in GBSCs in Lithuania are social sciences graduates. Taking into account that the majority of graduates registered in Lithuanian Labor Exchange (2020) are social sciences graduates and more than 28 % of total unemployed population in 2020 Q2 was unemployed youth up to 29 years, GBSCs provide possibilities to decrease youth and social science graduates unemployment rates.
Employment restructuring	Diversity of functions provided by GBSCs. The share of centers performing 8 or more functions jumped to 56 % in 2019, compared to 44 % in 2018. New demands for more sophisticated functions: customer support, robotics, R&D, Know Your Customer, data managment, data analytics, cyber security are seen.
GBSCs and educational institutions cooperation to meet the increasing GBSCs labor market demand	6th year in a row Vilnius has been acknowledged as the best city for GBSCs in CEE, which can positively effect labor market. Well-known for its multilingual talent, the Lithuanian GBSCs sector can adapt to the increasing need of languages abilities emphasized as one of the core competences in the GBSCs sector worldwide.
	Poland

Labor market change aspects	Country specifics
Employment dynamics	Leadership in GBSCs employment growth and second highest GBSCs market share. Tremendous 41.33 % growth in the employment in GBSCs market from year 2015 to 2016. Solid and stable employment growth rate is showing that the sector entering a mature phase. Poland is one of the minority countries, who tries to evaluate the GBSCs employment multiplier effect. According to the Polish experts, direct, indirect and induced effects should be taken into account. Using the multiplier developed by EY and country's GBSCs personal access database, the number of jobs generated by GBSCs in Poland should be estimated as 608 000, which is almost double as employment in GBSCs in Poland in 2019. This analysis shows that the real effect of GBSCs operating in CEE countries could be much higher that according to analysis of GBSCs related statistical data. However, the limitation of data accessibility for such analysis arises.
Youth/social science graduates employment	GBSCs sector show the demand for languages, business and administration, information and communication technology, and engineering specialists. Taking into account that business and administration graduates are the vast majority in all the locations in Poland, these social sciences graduates have huge potential in GBSCs market. Young professionals aged <27 years and 27-34 years represent the majority of GBSCs sector in Poland (19.7 % and 48.4 % accordingly). Significant decrease in youth unemployment in Poland in years 2015-2019 can be related to increasing youth employment in GBSCs.
Employment restructuring	Initiative of GBSCs talent communities - they would be valuable not only for the existing GBSCs companies, but for attraction of new GBSCs companies to the market. It could be also valuable for the policymakers on the country level since it would possible to see, analyze and predict the clear trends and situation in this labor market, to take actions for making new education strategies, investment incentives etc.

Labor market change aspects	Country specifics
GBSCs and educational institutions cooperation to meet the increasing GBSCs labor market demand	Development of GBSCs market in Poland influence the changes in educational structure on the country level and new fields of study are being created to accommodate the GBSCs market. 5 % of colleges and universities in Poland offer specialized post-graduate business services study programs. These are holistic professional development programs that prepare attendees for careers in GBSCs/ BPO/R&D and IT centers. To respond to market needs, universities have also created post-graduate programs addressed to management-level employees, in order to prepare them for managing GBSCs.
Romania	
Employment dynamics	GBSCs market growth has a tendency to slowdown and be moderate in comparison with other CEE countries GBSCs sector growth. These slight changes also indicate the maturity of GBSCs companies in Romania.
Youth/social science graduates employment	Average age of employed in the majority of GBSCs is 26-35. Therefore, the potential for youth employment on a country level are seen.
Employment restructuring	If over the last decade the Romanian GBSCs sector witnessed a fast growth, in the last years an increase in diversification of services, intelligent automation adoption, focus on data analytics, digital incorporation into the business model can be observed.
GBSCs and educational institutions cooperation to meet the increasing GBSCs labor market demand	GBSCs enhance education system change. In 2016 ABSL Romania and the Bucharest University of Economic Studies launched the Business Services Master's degree program, which is available for 50 students every year. The fact that 98 % of them have already been employed in companies in the industry at the end of their studies, confirms how important it is to continue the investment in the education of the next generation of specialists.
Slovakia	
Employment dynamics	Comparatively lowest GBSCs employment growth and GBSCs market share. GBSCs in Slovakia are mostly mature centers.

Labor market change aspects	Country specifics
Youth/social science graduates employment	Average age of Slovak GBSCs employees is 34, which is quite similar to other selected CEE countries analyzed in this scientific work and this shows the potential for decrease in youth unemployment influenced by GBSCs market growth.
Employment restructuring	GBSCs provide value-add services and sophisticated processes for their global or regional operations. Many Slovak initiatives and Business Service Center Forum (BSCF) enhance the GBSCs employment in the country and help to adapt to the employment restructuring due to GBSCs.
GBSCs and educational institutions cooperation to meet the increasing GBSCs labor market demand	As a pioneer in this field, since the academic year 2013/2014, T-Systems Slovakia (one of the GBSCs) implements ICT dual education initiative, where 70 % of the program is dedicated to practical training. Many other GBSCs have developed individual cooperation platforms with educational institutions at all levels resulting in implementation of their own subjects taught by tutors from GBSCs. Different initiatives examples: • Career4u – the goal of this initiative is to promote Slovak GBSCs and increase their awareness among potential candidates. This is done by presenting short videos of individual careers in various departments in different companies. • Work in Slovakia-Good Idea – the aim of this initiative is to promote competitive job vacancies within Slovak GBSCs. The pilot project was initiated in London (January 2019) and it is now launched in other European cities. • Train the Trainer - workshop series of trainings on soft skills for university teachers and the fully accredited university course for master students entitled Skills for Success: from University to Practice.

Source: *Compiled by author based on literature sources mentioned in this Chapter above and detailed statistics represented in this Chapter below*

Secondly, the more detailed analyzis of labor market indicators impacted by GBSCs in selected CEE countries was performed.

Table 14 presents the available and accessible generalized GBSCs employment statistics and computed employment growth average in analyzed CEE countries.

However, more representative data to evaluate GBSCs impact on employment in selected CEE countries should show which part of employment on country level

Em-ploy-ment in GBSCs, in thousand	2014	2015	Annual growth from 2014	2016	Annual growth from 2015	2017	Annual growth from 2016	2018	Annual growth from 2017	2019	Annual growth from 2018	Growth average 2014-2019
Czech Republic	50	59	18.00%	65	10.17%	75	15.38%	100	33.33%	112	12.00%	17.78%
Lithuania	8.8	11.1	26.14%	13.2	18.92%	15	13.64%	17	13.33%	19.3	13.53%	17.11%
Hungary	34	41.7	22.65%	43.8	5.04%	54.5	24.43%	61	11.93%	69.9	14.59%	15.73%
Poland	128	150	17.19%	212	41.33%	244	15.09%	279	14.34%	338	21.15%	21.82%
Romania	-	109	-	120	10.09%	125	4.17%	131	4.80%	-	-	6.35%
Slovakia	-	-	-	25+	-	30+	20.00%	37+	23.33%	37+	0.00%	14.44%

Table 14. *Employment in GBSCs, in Thousand in Selected CEE Countries*

Source: *compiled by author based on the literature sources presented in references [4, 5, 6, 73, 89, 90, 151]*

129

take GBSCs. Therefore, GBSCs and total employment ratio was calculated according to equation stated below (see Equation 10) and was expressed in percentage for more clear view. According to this ratio percentage of GBSCs market share on the country level is visible. As it is seen from Table 15, GBSCs market share has tendency to increase in all selected CEE countries and varies from around 1 % to more than 2 %. It is from 1.45 % to 2.17 % employed in GBSCs on analyzed CEE countries level in 2019 and the GBSCs share in services sector employment is also constantly increasing according to data from 2014-2019 (see Appendix 9).

$$GBSCs/total\ employment\ ratio = \frac{Employment\ in\ GBSCs}{Total\ employment} \qquad (10)$$

Table 15. *GBSCs Market Share in Selected CEE Countries*

GBSCs market share according to GBSCs/total emplo-yment ratio, %	2014	2015	2016	2017	2018	2019
Czech Republic	1.02%	1.20%	1.30%	1.47%	1.94%	2.17%
Lithuania	0.68%	0.85%	1.00%	1.15%	1.28%	1.46%
Hungary	0.84%	1.00%	1.01%	1.25%	1.38%	1.58%
Poland	0.82%	0.95%	1.33%	1.52%	1.73%	2.10%
Romania	-	1.32%	1.47%	1.49%	1.56%	-
Slovakia	-	-	1.01%	1.20%	1.46%	1.45%

Source: *authors calculations based on Eurostat (extracted on 2021-02-28) and other sources in Table 14)*

Taking into account that service sector is growing and employs the majority of nationals in the selected CEE countries as discussed in this scientific work before, GBSCs as economic phenomenon are increasing in importance on each selected CEE country level and need more attention and researches.

Number of GBSCs	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Czech Republic										180+	200	219	310
Lithuania	16	19	22	23	27	32	36	45	52	60	70	78	81
Hungary				104	114	125	135	145	153	164	174	179	186
Poland								470	532	593	724	831	970
Romania											265	280	-
Slovakia										40+	60+	65+	65+

Table 16. *Number of GBSCs in Selected CEE Countries*

Source: *compiled by author based on the literature sources presented in references [4, 5, 6, 73, 89, 90, 151]*

Increasing number of GBSCs in selected CEE countries (see Table 16) discussed in this scientific work before can be also paralleled with the trend in decreasing general unemployment and youth unemployment rates (see Figure 18 and Figure 19).

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
European Union - 28 countries (2013-2020)	6.10	6.10	6.70	6.90	6.50	6.00	5.50	4.90	4.40	4.10
Czechia	4.60	4.20	4.40	4.50	3.90	3.30	2.60	1.90	1.50	1.30
Lithuania	11.10	9.80	8.60	7.60	7.10	6.10	5.30	4.80	4.30	4.40
Hungary	6.10	6.10	6.20	5.80	4.50	4.10	3.10	2.60	2.30	2.20
Poland	5.80	5.80	6.10	6.30	5.50	4.60	3.80	3.00	2.40	2.00
Romania	4.20	4.20	4.10	4.20	4.10	4.10	3.50	3.00	2.50	2.40
Slovakia	9.00	8.50	8.80	9.00	8.40	7.30	6.20	5.20	4.20	3.70

Figure 18. *Unemployment as Percentage of Total Population in EU and Selected CEE Countries*
Source: *Eurostat, data extracted on 2021-02-28*

As it is seen from Figure 18, general unemployment rate in all selected CEE countries is lower than EU average and in such countries as the Czech Republic, Hungary, Poland and Romania it is almost or more than twice lower. However, as it is seen from Figure 19, youth unemployment rate in Hungary and Romania is higher than average in EU. Therefore, despite the fact that countries analysis show that GBSCs provide possibilities for youth employment, GBSCs sector is occupying from 1.45 % to 2.17 % of all working force in these countries, so even that GBSCs working places parallels with the trend in decreasing general unemployment and youth unemployment rates can be done, but GBSCs market size is too small to make generalizations on the country level, where the employment dynamics in other sector can have exclusions, which lead to misinterpretation of employment trends. Therefore, in author's opinion, deeper employment and unemployment analysis needs to be done to make generalizations about GBSCs impact on employment dynamics, panel data analysis will be used for this reason.
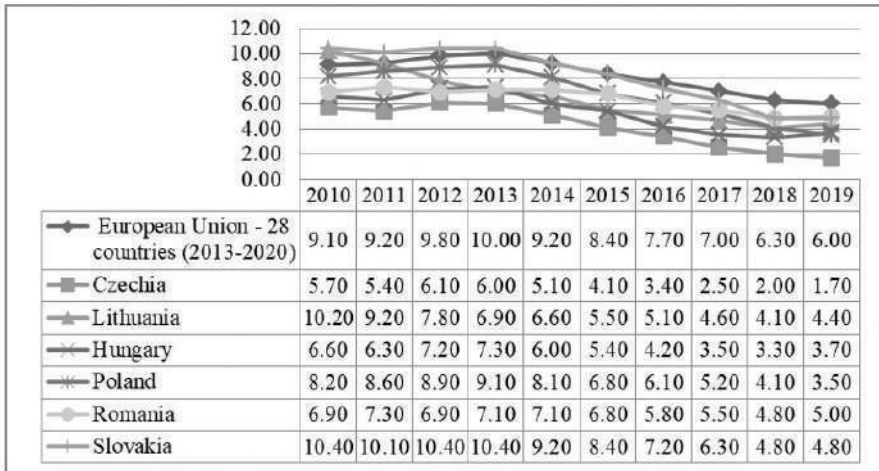
Figure 19. *Youth Unemployment as Percentage of Total Population in EU and Selected CEE Countries*

Source: *Eurostat, data extracted on 2021-02-28*

Another labor market indicator, which should be emphasized, is salaries in GBSCs compared to national average salaries. Eurostat data and national investment promotion agencies reports of CEE countries were used as information sources to identify how GBSCs salaries look like on the national level. The following data sources were used for GBSCs monthly salaries analysis:

• Czech Republic – data in Business Services Sector in the Czech Republic by ABSL (2020) based on Grafton Recruitment Salary Guide for Business Services, survey carried out during 2nd quarter of 2019. The amounts in survey are given as monthly gross salary in Czech Crowns, including variable components and represents the minimum and maximum average monthly salary according to position and level of expertise. Author of this dissertation estimated average monthly salary and converted it to Euro according to exchange rate 0.0393204 from 1st January 2020.

• Hungary – data in Business Services Centers in Hungary report by HIPA (2020) based on information gathered together with Grafton Recruitment, Hays, Randstad and Trenkwalder, which represent the minimum and maximum average salary in gross according to position and level of expertise in 2020. The amounts in survey are given as monthly gross salary in Hungarian Forints. Author of this dissertation estimated general average monthly salary and converted it to Euro according to exchange

rate 0.00301892 from 1st January 2020.

- Lithuania – data in Lithuania's Business Services Report by Invest Lithuania (2020) based on Alliance for Recruitment, Strategic Staffing Solutions and Amston Recruitment, which represent the minimum, average and maximum monthly salary in gross according to position and level of expertise in 2019 in Vilnius and Kaunas cities. Author of this dissertation estimated general average monthly salary.

- Poland – data in Business Services Sector in Poland by ABSL (2020) based on Mercer 2019 Poland SSC Survey, which represents the average monthly salary in gross according to position and level of expertise in 2019. Salary in EUR calculated by the authors of the report according to PLN to EUR exchange rate 0.2344. Author of this dissertation estimated general average monthly salary.

- Romania – data in Business Services Sector in Romania by ABSL (2019) based on KPMG analysis, which represents minimum, maximum and median monthly salary in gross according to position level and level of expertise in 2019. The amounts in survey are given as monthly gross salary in Romanian leu. Author of this dissertation estimated general average monthly salary and converted it to Euro according to exchange rate 0.208708 from 1st January 2020.

- Slovakia – Shared Service & Business Process Outsourcing Centers in Slovakia by SARIO (2020) based on Grafton Recruitment Slovakia, which represent minimum and maximum average gross monthly salary according to position level in 2020. Author of this dissertation estimated general average monthly salary.

Figure 20, which presents the statistics of national average national monthly salary in 2020 and average monthly salary in GBSCs in years 2019-2020, shows that salaries in GBSCs in selected CEE countries are significantly higher than average national monthly earnings. What is more, average salary in GBSCs is almost double or more than double as average national monthly earnings in majority of analyzed CEE countries. Average monthly salary in GBSCs is 26.68 % higher than average national Slovakian salary, 32.44 % higher than average national Czech salary, 69.93 % higher than average national Lithuanian salary, 70.71 % higher than average national Hungarian salary, 113.19 % higher than average national Romanian salary and 115.19 % higher than average national Polish salary.

Therefore, significantly higher salaries offered in GBSCs should have positive effect on life quality of employees, who contribute to national economy by higher spending and other positive effects.
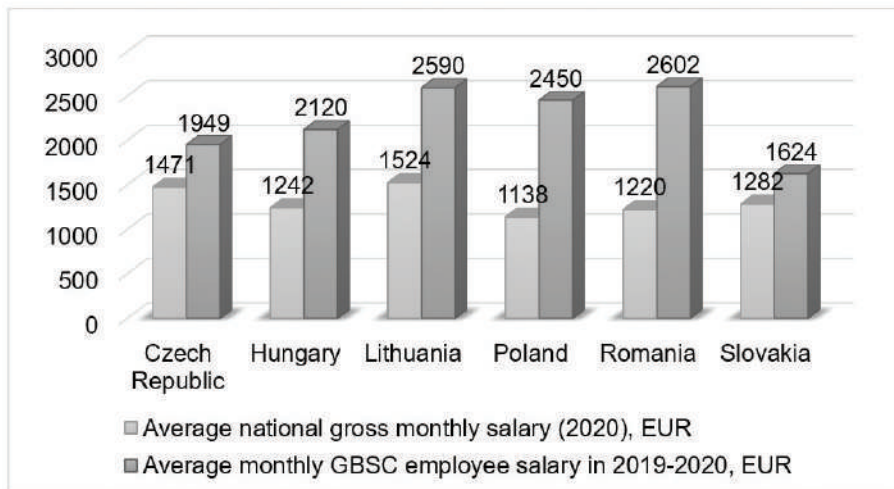
Figure 20. *Average National Monthly Salary and Average Global Business Services Centers Monthly Salary in Selected CEE Countries, EUR*
Source: *Compiled by author based on Czech Statistical Office (2021), Trading Economics (2021), Lithuanian Ministry of Social Security and Labour (2021), Statistics Poland (2021, accessed on 2021-03-13, also literature sources presented in references [4, 5, 6, 73, 89, 90, 151]*

To continue the salary-related topic in GBSCs, employment related taxes is one more employment indicator, which can be analyzed on the GBSCs level. Gruževskis et al (2009) state that wages and employer's labor related cost are considered among the most important labor market indicators in determining the country's level of economic development. Despite the fact that some researchers believe that foreign capital enterprises represent a huge competition for local businesses, GBSCs appearance in the market has obvious benefits for employed persons, wages, paid job related cost, increased consumption etc. Deeper contributions and GBSCs job related taxes analysis is needed to evaluate GBSCs impact on job related taxes in selected CEE countries. For instance, BSCF (2015-2019) presents annual data on GBSCs contribution to the Slovak economy by estimating employee income tax, social insurance taxes paid by employer and employee, salaries expenditures based on average monthly salary in Slovakia.

According to author of this scientific work, in general, it is difficult to make ex-

act estimations and projections for employment related taxes due to constantly changing taxes structure, huge differencies in calculations in different CEE countries and limitation in disclosure of GBSCs salaries information. Therefore, estimations and projections based on the present taxation system and retrospective information as well as projections for average salaries in GBSCs can be done.

In order to evaluate and compare GBSCs job related taxes in selected CEE countries, first of all, author of this scientific analyzed contributions of employers and employees in these countries (see Table 17). The main similarity in all countries that: a) there are both employers and employees contributions; b) employers contribution is higher; c) there are constant contribution parts and some CEE countries have variable (caps); d) joint contributions in majority of cases is more or less 40 % plus personal income tax; e) there are different tax exempts or peculiarities for personal income calculation in selected CEE countries.

Table 17. *Employers and Employees Contribution to Job Related Taxes in Selected CEE Countries*

	Contribution
Czech Republic	* Employers: 34 % (for social security and health insurance) * Employees: 11 % (for social security and health insurance) * Income tax: 15 % from super gross wage (gross wage + 34 %) . Employment and/or business income in excess of 48-times the average wage is subject to 7 percent solidarity tax.
Hungary	* Employers: -Vocational training contribution: 1.5 % -Social contributions: 17.5 % * Employees: -Health insurance and labor market contribution: 8.5 % -Pension contributions: 10 % *Income tax: 15 %

	Contribution
Lithuania	* Employers: - 1.45 % social security contribution - 0.32 % the guarantee fund and long-term unemployment contribution * Employees: -19.50 % social insurance contribution -1.8 % – 3 % pension accumulation contribution (optional, calculated at the choice of the employee) *Income tax: 20 % or 27 % resident income tax (20 % if the wage doesn't exceed 120 average wages, 27 % if the salary does exceed 120 average wages per year).
Poland	* Employers: 19.48-22.14 % for annual salary up to approx. €28 100; 3.22-5.88 % for the amount exceeding the cap (once an individual's gross remuneration exceeds 30 average estimated national salaries for a given year (PLN 142.950 for 2019) contributions toward these funds cease) * Employees: 13.71 %; 2.45 % for the amount exceeding the cap * Income tax: 18 % up to 85 528.00 PLN (~19 890. 23 EUR), 15 395.04 PLN (~3 580.24 EUR) plus 32 % of excess over 85 528.00 PLN. Mandatory health insurance contributions are also payable by the employee at 9 % of income, however, 7.75 % is deductible from tax as a credit, so in practice the net cost to the individual is 1.25 %.
Romania	*Employers: -Social security contribution: 4 % hard wor- king conditions, 8 % special working conditions -Work insurance contribution: 2.25 % *Employees: -Social security contribution: 25 % -Health insurance: 10 % * Income tax: 10 %
Slovakia	* Employers: 35.2 % (for social security and health insurance) * Employees: 13.4 % (for social security and health insurance) * Income tax: 19 % up to EUR 36 256.38 annual taxable income (except for income from capital and dividend income), 25 % above EUR 36 256.38 annual taxable income

Source: *compiled by author based on literature sources presented in references [4, 5, 6, 73, 89, 90, 151]*

Therefore, in order to evaluate GBSCs job related contribution (job related taxes) to economies in selected CEE countries, author of this scientific work presents own

calculations of employee income tax and social contributions paid by employer and employees based on average monthly salary in 2019-2020 (see Figure 20) and employment in GBSCs in 2019 (see Table 14) in these countries (see Equation 11, Equation 12, Appendix 12 and Table 18).

$$GBSCs\ contribution\ (PIT)=Employment \cdot (AVG\ salary\text{-}TEI) \times PIT \times 12, \quad (11)$$

where: *GBSCs contribution (PIT)* – annual GBSCs contribution to personal income tax in selected CEE countries, e*mployment* – employment in GBSCs in selected CEE countries in 2019, *AVG salary* – average salary in GBSCs in selected CEE countries in 2019-2020, *TEI* – tax-exempt income (if applicable) in selected CEE countries in 2019, *PIT* – personal income tax percentage in selected CEE countries in 2019, *12* – number of months in the year

$$BSCs\ contribution\ (SOC\ CONT)=Employment \cdot (AVG\ salary\text{-}TEI) \cdot SOC\ CONT \cdot 12, \quad (12)$$

where: *GBSCs contribution (SOC CONT)* – annual GBSCs contribution to social employment contributions in selected CEE countries, e*mployment* – employment in GBSCs in selected CEE countries in 2019, *AVG salary* – average salary in GBSCs in selected CEE countries in 2019-2020, *TEI* – tax-exempt income (if applicable) in selected CEE countries in 2019, *SOC CONT* – social employment contributions (percentage) paid by employer and employee in selected CEE countries in 2019, *12* – number of months in the year

Therefore, in order to evaluate GBSCs job related contribution (job related taxes) to economies in selected CEE countries, author of this scientific work presents own calculations of employee income tax and social contributions paid by employer and employees. Equations 11 and 12 are general equations applicable in majority of cases. Some selected CEE countries have special calculations for personal income tax, which are mainly specific due to differences in tax exempts/personal allowances, which are deductible from income and are not included into taxable amounts. These differences were mainly noticed by author in salary calculators, which were used by the author as ancillary tool for employment taxes calculations. What is more, calculations represented by author in Table 18 according to data in Appendix 12 can slightly differ from

reality due to the following reasons:

1. 2019 or 2020 years average salaries data in GBSCs has been taken due to accessibility to salaries data depending on CEE country.

2. The last available total receipts from taxes and social contributions data from 2018 (Eurostat, 2021) was included into calculations.

3. Contributions and income tax for standard employee without any additional personal tax exempts such as lower taxes for employees with children, disabilities etc. were included into calculations presented by author of this scientific work. This fact can also affect some discrepancies from real employment related taxes numbers.

Country	GBSCs personal income tax contributions in 2019, EUR	GBSCs social employment contributions in 2019, EUR	Total GBSCs contributions in 2019, EUR	Total receipts from taxes and social contributions in 2018, EUR[11]	GBSCs (2019)/ social security funds collected contributions (2018) ratio
Czech Republic	119,264,688.72	1,178,615,747.32	1,297,880,436.04	11,998,700,000.0	0.10816842
Hungary	175,576,185.19	524,820,118.77	700,396,303.96	16,222,900,000.0	0.04317331
Lithuania	112,658,014.04	127,590,923.91	240,248,937.95	5,745,400,000.0	0.04181588
Poland	1,476,176,120.47	3,386,923,974.29	4,863,100,094.76	65,178,900,000.0	0.07461157
Romania	244,905,909.16	1,453,823,922.88	1,698,729,832.04	20,785,000,000.0	0.08172864
Slovakia	91,718,274.64	29,202,955.31	120,921,229.95	13,732,600,000.0	0.00880541

Table 18. *Personal Income Tax and Social Employment Contributions Paid by GBSCs and Total Receipts from Taxes and Social Contributions in Selected CEE Countries*

Source: *sources indicated in Appendix 12, Eurostat (2021), data accessed on 2021-01-25*

11   Including imputed social contributions) after deduction of amounts assessed but unlikely to be collected (social security funds

According to calculations presented in Table 18, GBSCs personal income tax and social employment contributions in 2019 count from approximately 1 % to more than 10 % of total receipts from taxes and social contributions collected by social security funds in 2018 in the selected CEE countries. Therefore, author of this scientific work concludes that significant part of employment related taxes are paid by GBSCs on the countries level and this ratio is higher than GBSCs/total employment ratio presented in Table 15. The Czech Republic (10.82 %) and Poland (7.46 %) are leading in employment tax contribution and again proves the best results among selected CEE countries. That proves that despite to the fact that GBSCs employment on the selected CEE countries level varies from around 1 % to more than 2 %, GBSCs employment taxes contribution to the states economies is much higher due to higher than average national salaries.

Therefore, each person employed in GBSCs creates more economic value in terms of employment taxes than person employed in other average company in the given country. Also, taking into account that according to annual reports presented by selected CEE countries, the number of GBSCs employees in CEE countries is constantly increasing and average salary in GBSCs had been constantly increasing, contributions made by GBSCs have potential to grow in the future.

The main outcomes of GBSCs impact on labor market indicators testing stage noticed by the author of this scientific work are the following:

• According to the experts surveyed by the author of this dissertation as well as according to the analyzed GBSCs related reports in each selected CEE country, GBSCs play one of the most important roles as labor market indicators accelerators.

• Employment restructuring is the important GBSCs economic outcome. According to the author of this dissertation, way of working in GBSCs have a huge potential to change the overall view on the way of working in other companies in selected CEE countries.

• Due to recent digital transformations GBSCs in CEE countries are employing more and more robotisation experts and stimulate the demand for other new competencies (for instance languages) and professions, which has to be seen as a sign to study programmes implementors to review these programmes and to adapt to these transformation in order to fulfill the further demands in labor market.

• Author of this scientific work sees the potentially valuable initiatives men-

tioned in the analyzed GBSCs related reports as employment restructuring element. GBSCs talent communities, which employers are expressing a strong interest to create, are of great potential, but it is still unclear how to get started or maintain such a community. In author's view, these talent communities would be valuable not only for the existing GBSCs companies, but for attraction of new GBSCs companies to the market. It could be also valuable for the policymakers on the country level since it would possible to see, analyze and predict the clear trends and situation in this labor market, to take actions for making new education strategies, investment incentives etc. Both employers and employees as well as educational institutions should be aware and ready for this kind of employment restructuring.

- GBSCs market is extremely growing in CEE countries and in some countries it is even maturing and gravitating towards a long-term sustainable employment growth rate. GBSCs market share (GBSCs/total employment ratio) has tendency to increase in all selected CEE countries and counted from 1.45 % to 2.17 % of employed on country level and this share is also constantly increasing. The data of analyzed CEE countries shows that GBSCs share in the total employment on national level doubled from year 2014 to 2019.

- Increasing number of GBSCs in selected CEE countries can be also paralleled with the trend in decreasing general unemployment and youth unemployment rates. However, in author's opinion, deeper employment and unemployment indicators analysis needs to be done to make grounded generalizations about GBSCs impact on this employment dynamics, which is now limited due to lack of gathered statistical data. However, panel data analysis will be done according to availeble statistical data in this dissertation.

- Social sciences graduates have huge potential in GBSCs market and this statement was emphasized in the majority of reports made by selected CEE countries. What is more, social sciences graduates are usually being presented as the highest part of unemployed in the selected CEE countries, so GBSCs provide significant employment possibilities in this work force category.

- Significantly higher salaries offered in GBSCs in comparison to average national salaries as well as wide scope of additional benefits offered to GBSCs employees should have positive effect on life quality of GBSCs employees, their family members and their economic decisions, which influence the economic prosperity of the selected CEE countries.

- Despite the fact that according to author of this scientific work, in general, it is difficult to make exact estimations and projections for employment related taxes due to constantly changing taxes structure, huge differences in calculations in different CEE countries and limitation in disclosure of GBSCs salaries information, author of this dissertation presented own calculations of employee income tax and social contributions paid by employer and employees based on average monthly salary in 2019-2020 and employment in GBSCs in 2019 in order to evaluate GBSCs job related contribution (job related taxes) to economies in selected CEE countries. These calculation lead to the following conclusion: GBSCs personal income tax and social employment contributions in 2019 count from approximately 1 % to more than 10 % of total receipts from taxes and social contributions collected by social security funds in 2018 in the selected CEE countries, which is significant part taking into account that it is higher percentage than GBSCs/total employment ratio in the selected CEE countries. Therefore, GBSCs employ from 1.45 % to 2.17 % nationals in selected CEE countries, but GBSCs employment taxes contribution to the states economies is much higher than statistical average due to higher than average salaries (from approximately 1 % to more than 10 % depending on analyzed country).

- The research performed in second logical part of dissertation above indicates that there is a strong positive GBSCs effect on labor market indicators, but author of this dissertation will also additionally verify this conclusion in the fourth dissertation research logical part where panel data analysis according to available statistical will be performed.

3.1.2. Global Business Services Centers Impact on Spending and Consumption Indicators Testing Stage

Second GBSCs impact on macroeconomic indicators in selected CEE countries stage is testing how spending and consumption indicators are being influenced by GBSCs (see Figure 21). Author's aim is as accurately as possible for each selected CEE country to answer to the following question: how GBSCs influence purchasing power and spending trajectories of employees, their family members and related third parties (secondary, tertiary and further value chains)? In order to answer to these questions, spending and consumption indicators analysis of each selected CEE country is presented below. The following sources were used for the analysis: Business Services Sector in the Czech Republic by ABSL (2016, 2017, 2019, 2020), Paslaugų centrai Lietuvoje

(2015), Lithuania's Business Services Report (2016-2020), Business Services Centers in Hungary (2017-2020), Business Services Sector in Poland by ABSL (2014-2020), Romania's Business Service Sector IT&C, SSC & BPO (2018, 2020), Business Services Sector in Romania by ABSL (2018-2020), Shared Service & Business Process Outsourcing Centers in Slovakia (2017-2021), Eurostat statistics, selected CEE countries national statistics offices and other public institutions providing statistical data.

Research methods used in this part of scientific work: secondary data analysis, qualitative comparative analysis, descriptive statistics, forecasting/projections, experts survey, panel data analysis.
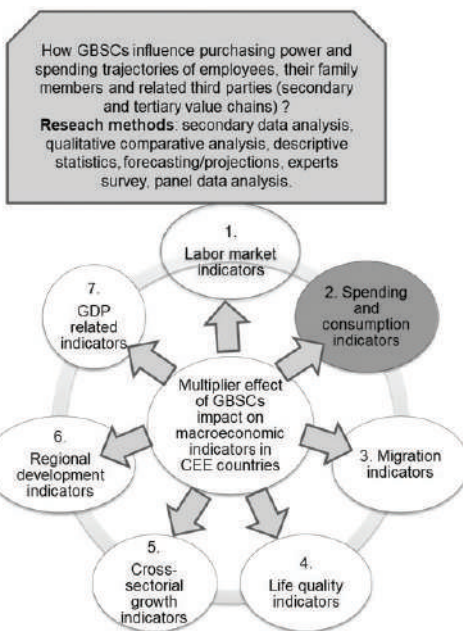
Figure 21. *Spending and Consumption Indicators Testing Stage Elements*
Source: *compiled by author*

According to Eurostat (2019, see Appendix 13), net wages take the highest part in contribution to gross household adjusted disposable income on EU level (from 34.5 % to 36.1 % in years 2007-2017). The second largest contribution to gross household adjusted disposable income was from social benefits (from 22.1 % to 24.5 % in years 2007-2017). These two components take more than half of contribution to gross house-

hold adjusted disposable income. Therefore, statistics and calculations of salaries/wages and social contributions paid by GBSCs presented in GBSCs impact on labor market indicators testing stage show not only the potential of this business to contribute to the state economy, but also can show how important can be employment in GBSCs in terms of the changes in structure of disposable income for consumption, spending, investment or saving.

In author's opinion, employment of GBSCs in selected CEE countries and higher than the countries average salaries positively impact economy and result such macroeconomic outcomes as increased purchase power of GBSCs employees and their family members, increased purchase power of youth employed in GBSCs, increased purchasing power of secondary, tertiary and further value chains according to multiplier effect. These are the topics for analysis. However, it is important to note that spending and consumption trajectories is a difficult economic phenomenon and by disposing the higher than average income due to higher than national average wages, employees of GBSCs will not necessarily spend more, but they can act in two possible ways, which will be analyzed in this part of this scientific work:

1. Spend or consume more (this would influence household consumption expenditure indicators, investment indicators, cross-sectorial growth indicators).

2. Save more (this would influence households saving rate).

In order to evaluate how employment (higher salary) in GBSCs can affect household consumption expenditure indicators, investment indicators, cross-sectorial growth indicators and household saving rate, first of all, author of this scientific work estimated the difference between average salary in GBSCs and average national salary in selected CEE countries. This difference expressed in EUR will be treated as possibly higher economic value created by each employed in GBSCs, which can be revealed in spending/consumption and/or saving indicators distinguished above.

According to Figure 20, which represents the statistics of average monthly national salary in 2020 and average monthly salary in GBSCs in CEE countries in 2019, author calculated projected average monthly salary in GBSCs in 2020 (see Equation 13). This salary projection is based on the statements and predictions expressed by experts in national GBSCs reports in selected CEE countries, according to whom at least 5 % annual growth in salaries in GBSCs was noticed from year 2016. Therefore, author has chosen 5 % annual growth in monthly salary in GBSCs.

Average salary in GBSC 2020 (proj)= Average salary in GBSC 2019 · 5 %, (13)

where: a*verage salary in GBSCs 2020 (proj)* – projected average monthly salary in GBSCs in 2020, EUR, *average salary in GBSCs 2019* – average monthly salary in GBSCs in 2019, *5 %* – annual salary growth in GBSCs

Difference between projected average monthly salary in GBSCs and average national monthly salary in 2020 was calculated and presented in Table 19.

Table 19. *Comparison of Average Monthly Salary in GBSCs and Average Nation Monthly Salary in selected CEE countries, 2019 and 2020*

	Average national gross monthly salary (2020), EUR	**Average monthly gross salary in GBSC (2019), EUR**	**Projected average monthly salary in GBSC 2020, EUR**	**Difference between projected average monthly salary in GBSC and average national monthly salary in 2020, EUR**
Czech Republic	1,471.46	1,948.77	2,046.21	574.75
Hungary	1,242.14	2,120.49	2,226.51	984.37
Lithuania	1,524.20	2,590.08	2,719.59	1,195.39
Poland	1,138.29	2,449.52	2,571.99	1,433.70
Romania	1,220.50	2,601.92	2,732.02	1,511.52
Slovakia	1,282.00	1,624.01	1,705.21	423.21

Source: *Compiled by author based on Czech Statistical Office (2021), Trading Economics (2021), Lithuanian Ministry of Social Security and Labour (2021), Statistics Poland (2021), Statistical Office of the Slovak Republic (2021) accessed on 2021-03-13*

Projected employment in GBSCs in 2020 was calculated according to employment growth statistics presented in Table 14 using Excel function *FORECAST*, which calculates future value predictions using linear regression (see Table 20 below).

Table 20. *GBSCs Employment Projections for Year 2020*

	Year	Czech Repu-blic	Hun-gary	Lithua-nia	Poland	Roma-nia	Slova-kia
	2014	50	34	8.8	128	-	-
	2015	59	41.7	11.1	150	109	-
	2016	65	43.8	13.2	212	120	25
	2017	75	54.5	15	244	125	30
	2018	100	61	17	279	131	37
	2019	112	69.9	19.3	338	-	37
Projected value	**2020**	**121.1**	**75.6**	**21.3**	**372.1**	**146.1**	**43.0**

Source: *author's calculations according to Table 14*

Difference between projected average monthly salary in GBSCs and average national monthly salary in 2020 (Table 19) and projected employment in GBSCs for 2020 (Table 20) were used for estimation of projected additional gross disposable income created due to higher average salary in GBSCs in year 2020 and estimation of projected additional gross disposable income created due to higher average salary in GBSCs in 2020 per one employee per year (see Table 21).

Table 21. *Projected Additional Gross Disposable Income Created Due to Higher Average Salary in GBSCs in Selected CEE Countries in 2020*

	Projected additional annual gross disposable income created due to higher average salary in GBSCs in 2020, one employee per year	**Projected additional annual gross disposable income created due to higher average salary in GBSCs in 2020, in thousand EUR**
Czech Republic	6,896.99	835,455.20
Hungary	11,812.43	938,312.43
Lithuania	14,344.65	317,244.41
Poland	17,204.43	6,814,714.06

| Romania | 18,138.24 | 2,614,670.11 |
| Slovakia | 5,078.53 | 228,624.81 |

Source: *author's calculations according to Table 19 and Table 20*

Projected additional annual gross disposable income created due to higher average salary in GBSCs in 2020 (per one employee per year) - this annual amount is derived from the difference between average GBSCs salary and average national salary in selected CEE countries and shows how much is additionally spent/consumed or saved by one GBSCs employee, who earns higher wage than country average. Author will operate with this number in making spending (consumption)/saving generalizations on the selected CEE countries level.

Additional annual gross disposable income of one employee in GBSC (proj)=(Average monthly salary in GBSC 2020(proj)-Average national monthly salary 2020)·12, (14)

where: *a– additional annual gross disposable income of one employee in GBSC (proj)* projected additional annual gross disposable income created due to higher average salary in GBSCs in 2020, one employee per year, *a – average monthly salary in GBSC (proj)* projected average monthly salary in GBSCs in 2020, *12* – number of months.

First generalization was done by estimating the projected additional annual gross disposable income created due to higher than average salary in GBSCs in 2020 (see Table 20). Therefore, it is projected that all employed in GBSCs in selected CEE countries will generate for the given countries additional amounts indicated in Table 21.

As it was mentioned above in this scientific work, additionally earned money can be spent (consumed) or saved by GBSCs employees.

In case of scenario „Spend or consume more", household consumption expenditure indicators, investment indicators, cross-sectorial growth indicators would be influenced as follows:

• Household consumption expenditure indicators – author of this scientific work compares absolute numbers of projected additional annual gross disposable income created due to higher than average salary in GBSCs in 2020 with the absolute numbers of final consumption expenditure of households by consumption purpose in

selected CEE countries in year 2019 (Eurostat, accessed on 2021-03-13). According to consumption expenditure of households by consumption purpose selected by author (Total expenditure, Food and non-alcoholic beverages, Electricity, gas and other fuels, Recreation and culture and Education in 2019) presented in Appendix 14, projected additional annual gross disposable income created due to higher than average selected CEE countries salary in GBSCs in 2020 would cover from 0.44 % to 2.24 % of total household expenditures in 2019, from 2.51 % to 13.66 % of food and non-alcoholic beverages expenditure in 2019, from 5.11 % to 55.29 % of electricity, gas and other fuels expenditure in 2019, from 4.52 % to 29.62 % of recreation and culture expenditure in 2019 and from 29.34 % to 223.71 % of education expenditure in 2019 (see Table 21). As an example, in some selected CEE countries, projected employment in GBSCs in 2020 would cover majority, more than 100% or even more than double (217.15 % in Poland or 210.60 % in Lithuania) of education expenditure of households or for instance it would cover substantial part of electricity, gas and other fuels expenditure (54.78 % in Romania and 31.63 % in Lithuania). Poland and Romania would feel the strongest impact on household expenditures since according to author's calculations, projected employment in GBSCs in these countries would cover the highest part of total households expenditure in selected CEE countries (2.24 % and 1.93 % accordingly).

• Investment indicators – according to the author of this scientific work, projected additional annual gross disposable income created due to higher than average salary in GBSCs in 2020 would also affect such economic indicator as gross investment rate of households. Eurostat defines the gross investment rate of households (including Non-Profit Institutions Serving Households) as gross fixed capital formation divided by gross disposable income, with the later being adjusted for the net change in pension entitlements. Household investment mainly consists of the purchase and renovation of dwellings according to Eurostat. Therefore, the increasing employment in GBSCs in selected CEE countries would mainly affect the ability of GBSCs employees to purchase or renovate the dwellings what is seen more as improvement of life quality of GBSCs employees and their family members. Despite the fact that according to data from Eurostat it is known that gross household investment rate expressed in percentage was from 6.5 % to 9.0 % in 2017 and it was growing from year 2012 to year 2017 (this overlaps with evolution of GBSCs in selected CEE countries), the scope of this scientific work does not cover analysis of all the economic behaviors (one of them is investment rate as economic indicator), therefore author can only assume that higher employ-

ment in GBSCs raised and would affect further raise life quality via increased gross investment rate of household (positive investment rate changes are seen in Appendix 15). Further analysis of household investment rate is needed to make more complex generalizations.

Cross-sectorial growth indicators – increasing number of GBSCs in the selected CEE countries is naturally increasing the demand for different products and services needed to maintain the business. Therefore, GBSCs can influence not only household expenditure (employee spends higher than average salary), but also corporate expenditure (employer expenditure to establish and maintain the business) and this promotes cross-sectorial growth (expenditure in secondary, tertiary and further value chains). According to author of this scientific work, GBSCs influence the following cross-sectorial indicators growth: real estate market growth influenced by building and rent of premises for developing and new GBSCs, catering market, cleaning market, transportation (both air and land) services market, tourism market, accommodation market, leisure time market (team buildings, massive sport events and other team activities), education services and conferences market, other secondary services markets. Cross-sectorial growth indicators influenced by GBSCs will be analyzed on more detailed level in this scientific work in Chapter 3.1.5. *Global Business Services Centers Impact on Cross Sectorial Growth Indicators Testing Stage.*

In case of scenario „Save more", gross household saving rate and GBSCs impact on it can be analyzed.

OECD (2012) defines saving rate as the fraction of income that is not consumed and states that its measurement depends on the content of two fundamental aggregates – income and consumption. According to OECD (2012), in the short term, households save as a precaution against temporary risks that can evolve over time and that can be covered only partly, such as the loss of the job. In the longer term, households save in order to create a capital to supplement their income and enable them to maintain their level of consumption when they retire. In turn, their saving serves to finance productive investment. In the short term, it shows a country's capacity to cope with a cyclical downturn. In the long term, it indicates the economy's capacity to finance itself . In particular, it should show households' saving to provide for their future needs.

Table 22. *Projected Additional Annual Gross Disposable Income Created Due to Higher Average Salary in GBSCs in 2020/Selected Expenditure in 2019 Ratio in Selected CEE Countries*

	Projected additional annual gross disposable income created due to higher average salary in GBSCs in 2020/Total expenditure in 2019 ratio, %	Projected additional annual gross disposable income created due to higher average salary in GBSCs in 2020/ Food and non-alcoholic beverages expenditure in 2019 ratio, %	Projected additional annual gross disposable income created due to higher average salary in GBSCs in 2020/ Electricity, gas and other fuels expenditure in 2019 ratio, %	Projected additional annual gross disposable income created due to higher average salary in GBSCs in 2020/ Recreation and culture expenditure in 2019 ratio, %	Projected additional annual gross disposable income created due to higher average salary in GBSCs in 2020/ Education expenditure in 2019 ratio, %
Czech Republic	0.78%	5.01%	11.67%	8.82%	145.98%
Hungary	1.29%	7.42%	32.41%	17.07%	74.80%
Lithuania	1.08%	5.33%	26.61%	13.13%	216.11%
Poland	2.24%	13.66%	29.50%	27.23%	223.71%
Romania	1.93%	8.36%	55.29%	29.62%	156.87%
Slovakia	0.44%	2.51%	5.11%	4.52%	29.34%

Source: *Author's calculations according to Table 21 and Eurostat, 2021 (accessed on 2021-03-13)*

Eurostat (2019) defines the gross saving rate of households (including Non-Profit Institutions Serving Households) as gross saving divided by gross disposable income, with the latter being adjusted for the change in the net equity of households in pension funds reserves. Gross saving is the part of the gross disposable income, which is not spent as final consumption expenditure.

Figure 22 presents author's summarized view of the economic value of household saving rate and author's generalization regarding the economic role of GBSCs in household saving. Author states that higher than country's average saving due to higher than average salary in GBSCs in case of scenario that GBSCs employees „save more", has short term and long term economic impact on selected CEE countries economies: increases country's capacity to cope with a cyclical downturn (short term) and economy's capacity to finance itself (long term).
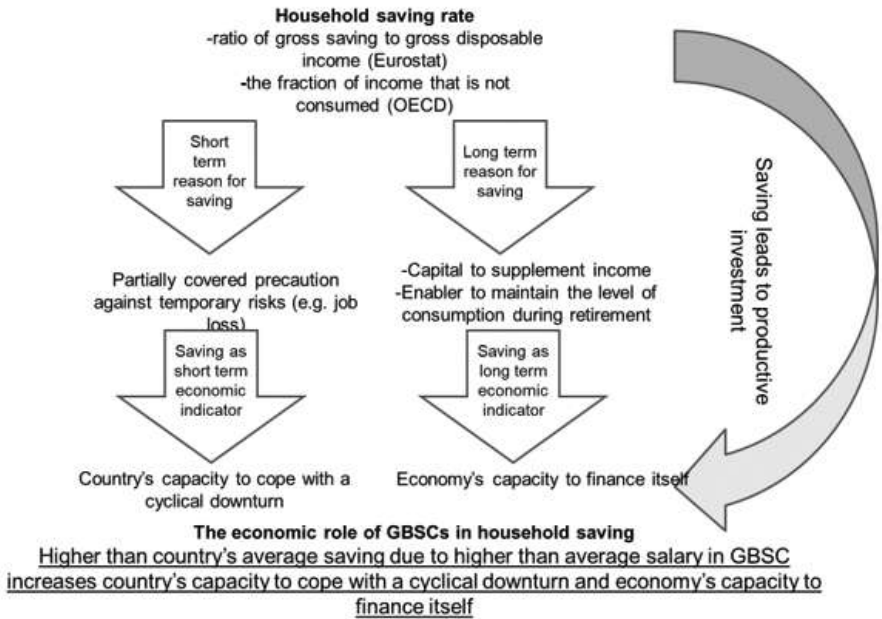
Figure 22. *Household Saving Rate and Economic Role of Global Business Services Centers in Household Saving*
Source: *created by author according to OECD, 2012 and Eurostat, 2019*

According to Eurostat (see Appendix 16 and Appendix 17), gross household saving rate in selected CEE countries comprised from -1.5 % to 12.1 % in 2017 and this saving rate changed from -3.3 % to 2.9 % during years 2012 to 2017. Lithuania and Czech Republic experienced negative change and Poland, Slovakia and Hungary experienced positive change in gross household saving rate. This means that capacity to cope with a cyclical downturn (short term) and capacity to finance themselves

(long term) decreased in countries with negative change and increased in countries with positive change. For instance, negative saving rate in Lithuania in 2017 shows that Lithuanians are not able to save any amount due to the reason that their expenditure exceeds their income. Author assumes that negative saving rate can be explained as the outcome of shadow economy or large scale of lending (which decreases disposable income) in Lithuania. Therefore, increasing employment in GBSCs in countries with negative or decreasing saving rates (Lithuania, Czech Republic in this case) is especially important since it potentially helps countries to increase saving rate by increasing countries capacity to cope with a cyclical downturn (short term) and economy's capacity to finance itself (long term). Projected additional annual gross disposable income created due to higher average salary in GBSCs in 2020 presented in Table 20 would be contribution of employment in GBSCs to increase countries saving rate.

Therefore, the main outcomes of GBSCs impact on spending and consumption indicators testing stage noticed by the author of this scientific work are the following:

• Statistics and calculations of salaries/wages and social contributions paid by GBSCs presented in GBSCs impact on labor market indicators testing stage show not only the potential of this business to contribute to the state economy, but also can show how important can be employment in GBSCs in terms of the changes in structure of disposable income for consumption, spending, investment or saving.

• Increase in employment and higher than average salaries in GBSCs leads to restructured consumption in selected CEE countries – additional amounts are being spent or saved (also applicable for increasing GBSCs employees and their family members purchasing power, youth purchasing power, secondary, tertiary and further value chains purchasing power).

• In case of scenario „spend more" household consumption expenditure indicators, investment indicators and cross-sectorial growth indicators are being influenced. Operating with additional income leads to increased life quality of GBSCs employees and their family members (increased investment rate). Multiplier effect can be also noticed here: the employment and wage increase in GBSCs generate additional income, which employees then spend, potentially generating additional employment and cross-sectorial growth.

• In case of scenario „save more", higher than country's average saving due to higher than average salary in GBSCs increases countries saving rate and capacity to

cope with a cyclical downturn (short term impact) and economy's capacity to finance itself (long term impact).

- According to consumption expenditure of households by selected by author consumption purpose (Total expenditure, Food and non-alcoholic beverages, Electricity, gas and other fuels, Recreation and culture and Education in 2019) presented in Appendix 14, projected additional annual gross disposable income created due to higher than average selected CEE countries salary in GBSCs in 2020 would cover from 0.44 % to 2.24 % of total household expenditures in 2019, from 2.51 % to 13.66 % of food and non-alcoholic beverages expenditure in 2019, from 5.11 % to 55.29 % of electricity, gas and other fuels expenditure in 2019, from 4.52 % to 29.62 % of recreation and culture expenditure in 2019 and from 29.34 % to 223.71 % of education expenditure in 2019 (see Table 21).

- The research performed in second logical part of dissertation above indicates that there is a strong positive GBSCs effect on spending and consumption indicators, but author of this dissertation will also additionally verify this conclusion in the fourth dissertation research logical part where panel data analysis will be performed.

3.1.3. Global Business Services Centers Impact on Migration Indicators Testing Stage

Third GBSCs impact on macroeconomic indicators in selected CEE countries stage is testing how migration indicators are being influenced by GBSCs (see Figure 23). Author's aim is as accurately as possible for each selected CEE country to answer to the following question: how GBSCs influence emigration, re-emigration level and brain drain? In order to answer to these questions, migration indicators analysis of each selected CEE country is presented below. The following sources were used for the analysis: Business Services Sector in the Czech Republic by ABSL (2016, 2017, 2019, 2020), Paslaugų centrai Lietuvoje (2015), Lithuania's Business Services Report (2016-2020), Business Services Centers in Hungary (2017-2020), Business Services Sector in Poland by ABSL (2014-2020), Romania's Business Service Sector IT&C, SSC & BPO (2018, 2020), Business Services Sector in Romania by ABSL (2018-2020), Shared Service & Business Process Outsourcing Centers in Slovakia (2017-2021), Eurostat statistics, Demographic Yearbooks of selected CEE countries, national statistics offices and other public institutions providing statistical data.

Reasearch methods used in this part of scientific work: secondary data analysis,

qualitative comparative analysis, descriptive statistics, experts survey, one-on-one interview with the head of SEB Global Services Vilnius and head of services in Technopolis Vilnius.. panel data analysis.
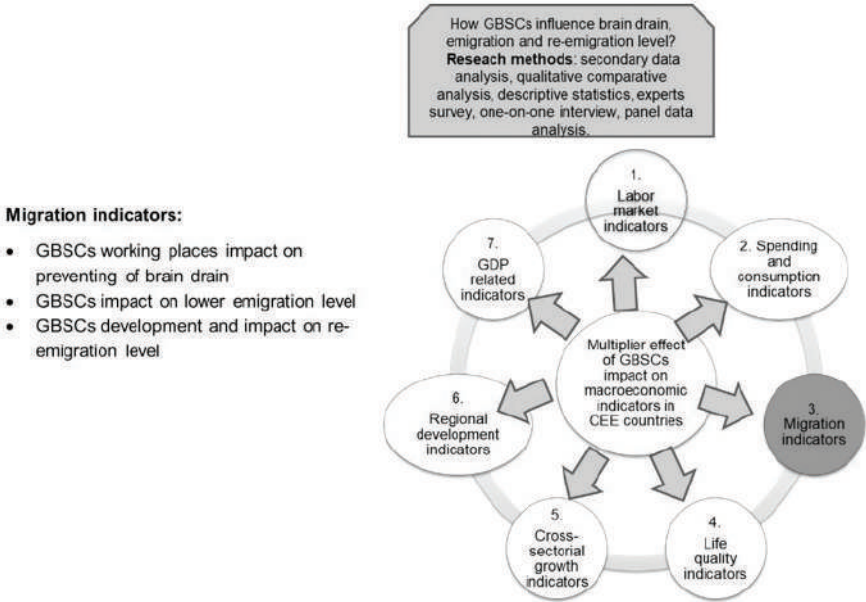
Figure 23. *Migration Indicators Testing Stage Elements*
Source. *compiled by author*

Migration and population indicators analysis was done by the author in order to reveal *emigration and re-emigration levels connections with GBSCs in selected CEE countries*. According to emigration and re-emigration statistics in selected CEE countries presented in the Appendixes 5-9 author of this dissertation presents generalization of these statistics (see Appendix 10), which also includes emigration and re-emigration rates based on the following calculations in Equations 15 and 16:

$$Emigration\ rate = \frac{Emigrants}{Population}\ ;\ (15)$$

$$Re\text{-}emigration\ rate = \frac{Nationals\ who\ returned\ to\ their\ country}{Emigrants}\ .\ (16)$$

Due to limitations of statistical data accessibility, only partial statistics for re-emigration and re-emigration rates was presented. Therefore, re-emigration data for only three years from year 2015 to year 2017 was presented for Slovakia. What is more, the data for Romania was not presented at all due to the fact that Romanian Statistic Yearbooks does not include return migration data as majority of other CEE countries statistic/demographic yearbooks. Only country of previous usual residence statistic is being collected by this country, but not the country of origin.

Migration indicators analysis with available data for selected CEE countries shows that from ~1 % to ~123 % of emigrated nationals returned (re-emigrated) to selected CEE countries during years 2012-2019 (see Table 23). Such countries as Lithuania, Hungary and Slovakia show extremely high re-emigration rates, what means that almost half or more than half emigrated nationals returned (re-emigrated) to their countries of origin. What is more, Slovakia's example shows that the number of re-emigrated nationals exceeded the number of emigrated nationals in years 2016 and 2017 (107.23 % and 123.40 % accordingly). Author of this scientific work assumes that working places created by GBSCs in selected CEE countries could have impact on improving re-emigration rates and this will be also verified by panel data analysis.

Table 23. *Percentage of Nationals Reemigrated to CEE Countries*

Country	2012	2013	2014	2015	2016	2017	2018	2019
Czech Republic	3.67%	6.70%	11.01%	12.98%	6.93%	8.90%	8.51%	2.87%
Hungary	18.33%	26.96%	26.90%	34.26%	40.65%	52.49%	48.57%	46.53%
Lithuania	42.23%	48.88%	53.32%	41.28%	28.23%	21.19%	51.52%	69.73%
Poland	2.50%	1.99%	2.03%	2.10%	1.05%	1.20%	1.57%	1.72%
Romania	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Slovakia	n/a	n/a	n/a	83.28%	107.23%	123.40%	n/a	n/a

Source: *computed by author based on statistical data from Appendixes 5-10*

Other researchers also conclude that re-emigration, which is also being name as return migration, is comparatively recent phenomenon in CEE (Kahanec, Zimmermann, 2016; Martin, Radu, 2009; Eurofound, 2012; Re-Turn, 2012 and others). Researchers of re-emigration in CEE countries claim that this phenomenon attracted increasing academic and policy attention in the last few years (Kahanec, Zimmermann,

2016). However, the researchers also acknowledge that measuring re-emigration is challenging, since no comparable data across the countries exist due to different data collection methods and definitions (Eurofound, 2012). Experts survey also shows that migration data is hard to parallel with GBSCs data due to the fact that there is no clear statistics on re-emigrated persons employment in GBSCs and brain-drain statistics related to GBSCs (more information in Chapter *3.1.10. Central and Eastern Europe Countries Investment Promotion Agencies Experts Survey Analysis*). One of the researches (Re-Turn, 2012) found that if employed, returnees are more likely to work in the service sector. This statement can be paralleled with surveys made by Invest Lithuania (2015, 2016), which found that 12 % of employed by GBSCs are returnees and the largest shares of returned employed by surveyed GBSCs is 47 % (Invest Lithuania, 2016). What is more, according to Invest Lithuania (2017) 11 % of the total workforce in the GBSCs sector in Lithuania is composed of repatriates and expats, and this number is growing. According to the head of SEB Global Services Vilnius (see Chapter *3.1.9. SEB Global Services Business Case as Example of Multiplier Effect of Global Business Services Centers Impact on Macroeconomic Indicators in Lithuania),* around 5 % of re-emigrants are employed in this organization. According to these data, author's assumption regarding GBSCs impact on improving re-emigration level in selected CEE countries is grounded. However, due to lack of comprehensive data and researches or re-emigration and employment or re-emigrated nationals in GBSCs, author is unable to ground this scientifically. The difficulty to evaluate the impact of GBSCs on re-emigration level is also emphasized in the experts survey. According to the surveyed expert from Lithuania, higher than average salaries and the economic impact of GBSCs in the country help bring some people back to Lithuania, but those people may seek employment in other sectors such as real estate, transportation, etc. Jobs offered in GBSCs contribute to the re-emigration rates, yet it is difficult to say how much of a factor it is without the data (see more experts views in Chapter *3.1.10. Central and Eastern Europe Countries Investment Promotion Agencies Experts Survey Analysis*).

One more migration indicator, which can be analyzed in the background of GBSCs and migration indicators is brain drain. Analysis of emigration and its economic impact on Eastern Europe made by International Monetary Fund (2016) shows that the share of emigrants from majority of CEE countries[12] with tertiary education was well above the equivalent ratio in the general population and has been increasing over time.

12   Selected CEE countries are analyzed in this dissertation.

The prevalence of better-educated and working-age people among emigrants leaving CEE countries has significantly reduced the supply of skilled labor and brain drain may have had particularly important implications for productivity of these countries.

Despite the fact that lack of systemized information about brain drain in selected CEE countries and difficulties to perform deeper research on this topic, two examples of Lithuania and Poland show that brain drain is an important topic and GBSCs market can have positive effect on brain drain. Invest Lithuania emphasizes that expanding GBSCs market in Lithuania is able to lure top employees from overseas, and also deliver home grown talent with international experience (Invest Lithuania, 2016). According to report of Business Services Sector in Poland prepared by ABSL (2019), despite a significant slowdown in workers emigrating to the United Kingdom (UK), Poland is a significant source of emigrant labor to many other markets in the EU and around the world, further exacerbating talent scarcity at home. According to UK government data, Polish expats accounted for the single-largest bloc of foreign nationals in the UK. The scarcity of skills and rising competition for talent is a reality many Polish employers face every day. More than half (58 %) of human capital and C-suite leaders they surveyed said talent scarcity is one of the biggest concerns for their executive teams, and 82 % believe competition for top talent will have as much if not more impact on their business in the near future. Therefore, GBSCs in Poland implement strategies enhancing talent acquisition and this can have positive effect on country's brain drain decrease.

International Monetary Fund notices that emigration of better-educated people has been associated with weaker governance[13]. As better educated people are more likely to demand and drive change in societies, high-skill emigration is a sign of weak governance according to International Monetary Fund. In opinion of author of this dissertation, based on examples from Lithuania and Poland, on International Monetary Fund considerations and on experts survey (see Chapter *3.1.10. Central and Eastern Europe Countries Investment Promotion Agencies Experts Survey Analysis)*, brain drain and weak governance dependency outcome can be reduced in selected CEE countries by providing support to GBSCs implementations and growth. Taking into consideration that selected CEE countries have recently shown GBSCs excellence, governmental support for increasing number of attractive working places created by GBSCs would be

---

13 Control of corruption, voice and accountability, rule of law, and government effectiveness indicators etc.

one of the solutions for preventing of brain drain.

Therefore, the main outcomes of GBSCs impact on migration indicators testing stage noticed by the author of this scientific work are the following:

• Migration indicators analysis with available data for selected CEE countries shows that from ~1 % to ~123 % of emigrated nationals returned (re-emigrated) to selected CEE countries during years 2012-2019. Such countries as Lithuania, Hungary and Slovakia show extremely high re-emigration rates, what means that almost half or more than half emigrated nationals returned (re-emigrated) to their countries of origin. What is more, Slovakia's example shows that the number of re-emigrated nationals exceeded the number of emigrated nationals in years 2016 and 2017 (107.23 % and 123.40 % accordingly). Author of this scientific work assumes that working places created by GBSCs in selected CEE countries could have impact on improving re-emigration rates.

• Despite the fact that such assumption as working places created by GBSCs in selected CEE countries could have impact on improving re-emigration rates was made by the author according to comparative analysis of re-emigration rate and according to the information that SEB Global Services Vilnius employs around 5 % o re-emigrants, the lack of systemized information and statistics about migration indicators and about brain drain complicates the research on evaluation of GBSCs impact on these indicators.

• The experts surveyed by the author of this dissertation also agree that it is difficult to parallel migration indicators and brain drain with GBSCs due to lack of researches/statistics on the employment of re-emigrated nationals in selected CEE countries.

• Brain drain/emigration and weak governance dependency outcome have to be reduced. Weak understanding on the gain derived from attractive working places created in GBSCs and lack of governmental support to GBSCs implementation and growth is a huge obstacle, which potentially can influence well-educated nationals brain drain/higher emigration level. Therefore, according to the author of this dissertation, governmental support for increasing number of attractive working places created by GBSCs can be one of the solutions for preventing of brain-drain/emigration. However, there is limited possibility to make more precise generalization due to lack of statistical data on this topic mentioned in this dissertation before.

- The research performed in second logical part of dissertation above indicates that there can be a positive GBSCs effect on migration indicators, but author of this dissertation will also additionally verify this conclusion in the fourth dissertation research logical part where panel data analysis will be performed.

3.1.4. Global Business Services Centers Impact on Life Quality Indicators Testing Stage

Fourth GBSCs impact on macroeconomic indicators in selected CEE countries stage is testing how life quality indicators are being influenced by GBSCs (see Figure 24).

Author's aim is as accurately as possible for each selected CEE country to answer to the following question: which life quality indicators GBSCs influence and how influence? In order to answer to this question, life quality indicators analysis of each selected CEE country is presented below.

The following sources were used by the author of this scientific work for the analysis of life quality indicators influenced by GBSCs in selected CEE countries: researchers, who support life quality in economy (Stiglitz et al, 2009, Gruževskis et al, 2009, Pukelienė, Starkauskienė, 2011, Servetkienė, 2013 and others), Business Services Sector in the Czech Republic by ABSL (2016, 2017, 2019, 2020), Paslaugų centrai Lietuvoje (2015), Lithuania's Business Services Report (2016-2020), Business Services Centers in Hungary (2017-2020), Business Services Sector in Poland by ABSL (2014-2020), Romania's Business Service Sector IT&C, SSC & BPO (2018, 2020), Business Services Sector in Romania by ABSL (2018-2020), Shared Service & Business Process Outsourcing Centers in Slovakia (2017-2021).

Research methods used in this part of scientific work: secondary data analysis, qualitative comparative analysis, experts survey, observation.
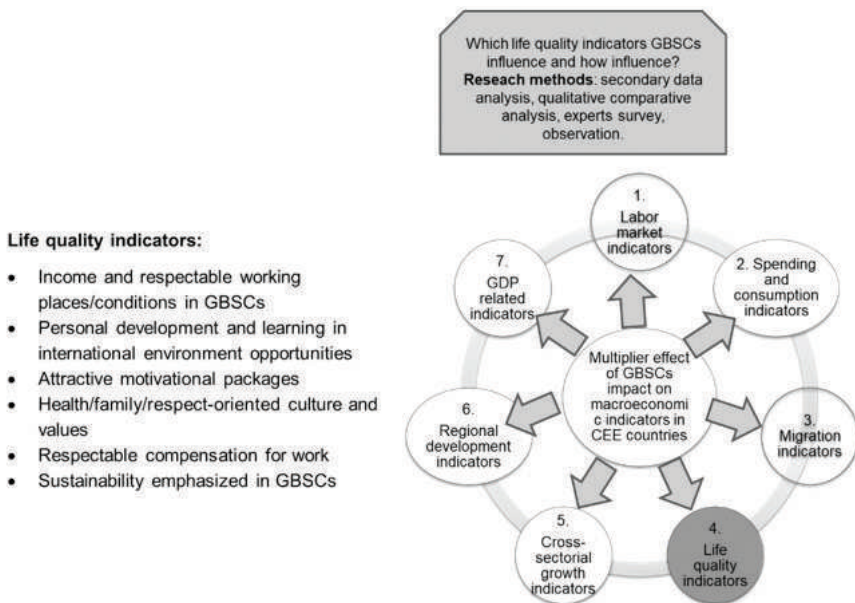
Figure 24. *Life Quality Indicators Testing Stage Elements*
Source: *compiled by author*

Author of this dissertation expresses the opinion that GBSCs analysis has to be performed based not only on traditional macroeconomic view. It is very important to evaluate life quality indicators, which are seen as even more important intangible assets from GBSCs way of working prospective. Famous researches on worldwide scale (Stiglitz et al, 2009 and others) as well as researches of Lithuanian economy specialists (Gruževskis et al, 2009, Pukelienė, Starkauskienė, 2011, Servetkienė, 2013 and others) prove that general traditional economic indicators such as GBP, inflation, budget deficit etc. do not fully reflect the real state of the economy. Therefore, evaluation of GBSCs impact on CEE economy has also be complemented with life quality indicators.

Different researches incorporate different life quality indicators in their economic evaluation models. Economists and organizations from all over the world (Stiglitz, Sen, Fitoussi in Report by the Commission on the Measurement of Economic Performance and Social Progress, 2009 and others) distinguish different components of life quality such as health, education, personal activities political voice and governance, social connections, environmental conditions, personal insecurity level, economic in-

security level. Eurostat measures quality of life by the similar indicators, but complements them with material living conditions, productive or main activity, overall experience of life.

The experts surveyed by the author of this dissertation unequivocally agree that GBSCs affects life quality indicators in a positive way and that this impact is very important for economic well-being in selected CEE countries.

Author of this scientific work believes that GBSCs in selected CEE countries can be analyzed from life quality prospective in the following way:

1. Attractive and dignified working places offered by existing and newly established GBSCs, which contribute to personal and economic safety.

2. Dignified salary and other financial benefits, which GBSCs can offer to their employees and which enhance the purchasing power of GBSCs employees.

3. Non-financial benefits, which GBSCs can offer to their employees. It mainly can be seen as system of culture, moral-ethical and spiritual values – GBSCs international working culture oriented to diversity of opinions, age, nationalities, religions etc. Foreign capital companies such as GBSCs motivate employees to be tolerant, learn new languages, participate in international trainings, broaden the view, seek for additional education, foster social connections.

4. Health strengthening and well-being oriented motivational packages offered by GBSCs to employees – such motivational packages as health insurance, life insurance, gym, sport events and other promote healthy lifestyle of GBSCs employees and ensure better healthcare.

5. Migration, re-emigration, brain drain and demographic indicators as outcome of political voice and governance toward GBSCs in selected CEE countries.

6. Development of other sectors as outcome of GBSCs appearance, which leads to improvement of general life quality indicators in the selected CEE countries.

7. Regional development stimulated by GBSCs lead to spread of life quality indicators in smaller cities in selected CEE countries, where new GBSCs are being established.

8. Economic multiplier effect impact on economic status of different GBSCs value chains: higher purchasing power and consumption level, emerging of new businesses in different sectors, new working places, higher wages, more job related taxes paid etc.

Therefore, life quality indicators are mostly covered in other macroeconomic

indicators listed in Table 4 and analyzed in this scientific work. This shows that this scientific work evaluates the impact of GBSCs on not only traditional macroeconomic indicators, but also wider life quality indicators.

There are differnet payroll and non-payroll benefits, which GBSCs in analyzed CEE countries offer to their employees according to the most recent GBSCs reports mentioned in this dissertation (published by national investment promotion agencies or ABSL). The substantial part of them are indicated in the Table 24. However, there are plenty of other benefits, which were not mentioned here, but exist in GBSCs.

Table 24. *GBSCs Life Quality Benefits Offered to GBSCs Employees*

Benefit	Czech Republic	Hungary	Lithuania	Poland	Romania	Slovakia
Training, education benefits	GBSCs sector invests more than 4 times the national average in educating their professionals. Many GBSCs established internal Academies. The level of cooperation with Czech universities and schools is at a record level. There are working practices, technical trainings, training on soft skills, language courses and other.	Large variety of learning and development tools and other	Subsidized training and other.	Different trainings, which promotes personal growth and other.	Language courses, educational allowance for studies or external trainings and other.	Respectable compensation for work, family and health „work-life balance", attractive motivational packages, remuneration and other.
Financial/ tangible benefits	Dignified salary, commute to work/other travel cost cover, cafeteria system and other.	Dignified salary and other.	Dignified salary and other.	Dignified salary, kitchens with fruit and healthy snacks and other.	Dignified salary, annual bonuses, meal tickets, discounts for various products and services, reimbursement for public transport and other.	
Intangible benefits	Organization values, organization goals and strategies, perception of business in the marketplace, the ability of managers to use different management styles with their employees, actively addressing diversity. 41 % of Czech GBSCs employed people with disabilities in 2019 (9 % more than in 2018), 52 % of them employed people older than 50 years in 2019 (5 % more than in 2018) and other.	GBSCs employees satisfaction with their colleagues/people, whe whole other than financial benefits package, proved decreasing sick-leave, attrition rates, increasing female employees and employed people with disabilities rate and other.	Gender equality (54 % of employees are women, 51 % of senior management positions are held by women), corporate and social responsibility programs: charitable, environmental and ecological initiatives, social and educational activities for children, animal care, welfare and other.	Level of women in employment in GBSCs sector are significantly higher than in other sectors, diversity and social inclusion, gender and gender identity, race and ethnicity, age and generation, disability and ability, sexual orientation, religious and spiritual beliefs, socioeconomic status and other life quality aspects.	-	

Benefit	Czech Republic	Hungary	Lithuania	Poland	Romania	Slovakia
Workplace benefits	Physical workplace location and home office, physical workplace design and other.	Attractive work environment, working from home possibilities.	-	Work from any distance location and other.	Possibilities to work from home and other.	
Work-life balance benefits	Flexible working hours, additional payed days off, leasure trips/activitie and other.	Attractive work-life balance package, flexible work time and other.	Entertainment facilities and other.	Flexible working hours and other.	Extra holidays, flexible working hours and other.	
Health related benefits	Sport entertainment, medical pack, health insurance and other.	-	Health insurance/medical package, sport facilities and other.	Sports packages, health and fitness programs, encouraging biking including showers and other.	Private healthcare, sports / wellness packages and other.	
Investment benefits	Pension fund, life insurance, preferential share purchase options and other.	-	Life insurance, private pension schemes, preferential share purchase option and other.	-	-	

Benefit	Czech Republic	Hungary	Lithuania	Poland	Romania	Slovakia
Investment benefits	Child care/infant care subsidies, GBSCs kindegartens, part time or reduced work arrangements to maternity or paternity leavers (in 2017 72 % of GBSCs offered such arrangements, in 2018 this share rose to 83 %) and other.	-	Child/infant care subsidies, kindergarten and other.	-	Keeping benefits during maternity leave.	

Source: *Compiled by author based on the literature sources presented in references [4, 5, 6, 73, 89, 90, 151]*

Therefore, the main outcomes of GBSCs impact on migration indicators testing stage noticed by the author of this scientific work are the following:

- Life quality indicators incorporation into economic evaluation models is a crucial according to the author of this dissertation. Standard econometric models have to be complemented or even replaced by the models explaining life quality indicators, which are intangible, difficult to measure, but more representative. Therefore, author of this dissertation believes that GBSCs in selected CEE countries can be analyzed from life quality prospective and followed this believe in this scientific work.

- GBSCs in selected CEE countries show the gain including, but not limited to the following life quality indicators: income and respectable working places/conditions in GBSCs, personal development and learning in international environment opportunities, attractive motivational packages, health/family/respect-oriented culture and values, respectable compensation for work, sustainability, diversity and social inclusion emphasized in GBSCs.

3.1.5. Global Business Services Centers Impact on Cross Sectorial Growth Indicators Testing Stage

Fifth GBSCs impact on macroeconomic indicators in selected CEE countries stage is testing how cross sectorial growth indicators are being influenced by GBSCs (see Figure 25). Author's aim is as accurately as possible for each selected CEE country to answer to the following questions: how GBSCs influence development of secondary services markets (real estate, catering, cleaning, transportation, tourism, accommodation, leisure time, education and other) growth? This part of dissertation is closely related to the analysis of cross-sectorial growth influenced by the expansion of SEB Global Services Vilnius (see Chapter *3.1.9. SEB Global Services Business Case as Example of Multiplier Effect of Global Business Services Centers Impact on Macroeconomic Indicators in Lithuania*). The following sources were used for the analysis: Business Services Sector in the Czech Republic by ABSL (2016, 2017, 2019, 2020), Paslaugų centrai Lietuvoje (2015), Lithuania's Business Services Report (2016-2020), Business Services Centers in Hungary (2017-2020), Business Services Sector in Poland by ABSL (2014-

2020), Romania's Business Service Sector IT&C, SSC & BPO (2018, 2020), Business Services Sector in Romania by ABSL (2018-2020), Shared Service & Business Process Outsourcing Centers in Slovakia (2017-2021), real estate agencies, other real estate and other markets analysis professionals data.

Research methods used in this part of scientific work: secondary data analysis, qualitative comparative analysis, descriptive statistics, experts survey, one-on-one interview, observation.

Figure 25. *Cross Sectorial Growth Indicators Testing Stage Elements*
Source: *compiled by author*

Real estate market growth influenced by building and rent of premises for developing and new GBSCs. The main information sources regarding office market in selected CEE countries are the worlds largest privately held global commercial real estate services provider Cushman & Wakefield, CBRE, countries business services reports and some other real estate agencies analysis. According to country specific information about office market in selected CEE countries, it is difficult to distinguish separate GBSCs office market, but business services sector is seen as the main driver of

the demand for office space.

Czech Republic. According to Business Services Sector in the Czech Republic Report (2020), there is the second largest office market in CEE (over 4.4 million sq. m of modern office stock) and continues to expand at a healthy pace (400 thousand sq. m. under construction, more than 136 thousand sq. m. of them in capital Prague). The Czech Republic currently offers 3 main city hubs from which to launch and grow business services – Prague, Brno and Ostrava. According to Cushman & Wakefield (2019), professional services and IT have been driving most of the demand for office space.

The office market has shifted from landlord's to tenant's market in 2020. With the experience of more extensive working from home during the first wave of the pandemic, employers are now considering more flexible working schemes together with a higher number of shared desks resulting in lower demand for office space in a short term. This is evident from the the growth of the available space for sublease and decreasing take-up figures. Current vacancy rate still keeps relatively low (7 %) due to high volume of renegotiations (Cushman & Wakefield, 2020).

Hungary. According to Business Services in Hungary Report (2020), due to pandemic situation in Europe and globally, the handover of many office project developments has been delayed. However, construction activity has not stopped, only slowed down slightly. According to Office Marketbeat prepared by Cushman & Wakefield (2020), most office occupiers are in "wait-and-see" mode and rethinking their future space requirement based on their home office experience. Large occupiers are requiring shorter terms in their renewal negotiations, whilst some excess space has been put on the market for sublease. Therefore, Cushman & Wakefield (2020) also do not see major delays, large-scale transactions, have proceeded and large occupiers are committing for long term leases as the Budapest market remains attractive for large GBSCs business.

Lithuania. According to CBRE (2020), GBSCs sector firms demanded the majority of office space. What is more, the record-high number of people who switched to remote working in 2020 coincided simultaneously with the record-high development of new business centers. The culminating number of new developments may lead to the view that Vilnius office market has already reached a peak and will slowly enter the contraction stage. However, the quick pace of new developments and even higher number of projects in the development pipeline indicate that the culmination is yet to come. Based on the current development pace, existing building plans and the fact that commissions of some projects have been delayed, 2021 is expected to bring an unprec-

edentedly high supplement of more than 183 thousand sq. m. to the Vilnius office stock (103 % rise from 2020).

According to Lithuania's Business Services Report (Invest Lithuania, 2019), on site facilities routinely include a choice of restaurants and cafes, comfort for cyclists, meeting rooms, sports facilities, and kindergartens, while co-working spaces are also common. Importance is also increasingly being placed on sustainable development and green buildings. This tendency shows the expansion of other sectors growth together with the growth of office market influenced by GBSCs and the importance of life quality indicators emphasized by the companies, who choose the offices for GBSCs as well.

According to Lithuania's Business Services Report (Invest Lithuania, 2020), Vilnius' market for office space continues to grow in quality and quantity.

Also, according to the head of services in Technopolis interviewed by the author of this dissertation, expansion of GBSCs (SEB Global Services Vilnius, Western Union Processing Lithuania, Bazaarvoice, Booking.com, DXC technology Baltic and others), who leased the premises in Technopolis Ozas before, was a major incentive to expand their business, too and to build new buildings for lease (see more information in Chapter *3.1.9. SEB Global Services Business Case as Example of Multiplier Effect of Global Business Services Centers Impact on Macroeconomic Indicators in Lithuania*). Since Technopolis is a company, which develops, owns and operates a chain of business parks and is representative market player in Lithuania, author of this dissertation treats that the statement that GBSCs enhance the development of real estate business, which is also proved by the expert from Technopolis, is grounded.

Poland. According to Business Services Sector in Poland Report (2020), Poland is the largest economy in CEE, which directly translates into demand for office space. Currently, the modern office space available in the country's major office markets (Warsaw, Kraków, Wrocław, the Tri-City, Katowice, Poznań, Łódź, Lublin and Szczecin) is approximately 11 million sq. m in total. Polish cities are the top choice for companies considering establishing locations in major business centers and for commercial developers. Entities operating on the Polish market acquire additional space, while a number of newcomers to the Polish market also choose to begin operating on it using flexible workspace solutions. Secondary office markets like Białystok, Bydgoszcz, Kielce, Olsztyn, Opole, Radom, Rzeszów or Toruń are growing constantly and their standing compared to other cities is improving year after year. Every major city in Poland is witnessing robust growth of the office market as Warsaw is experiencing record-high

demand levels.

However, despite the high office space demand, according to Office Marketbeat prepared by Cushman & Wakefield (2020), occupier activity was down by 35 % in 2020 dur to lockdown and subdued occupier activity and increased space availability pushed prime office rents down.

Romania. According to Office Marketbeat prepared by Cushman & Wakefield (2020), there was a small decline in terms of new office space supply in Bucharest, pandemic situation was still seen as leasing activity disruptor, prime rents were still stable and the pipeline was solid.

What is more, according to Business Services Sector in Romania Report (2020), flex office sector has risen over the years from the office market niche to the important market component whose rise is fueled by pandemic situation and serving its optimization. Flex offices (usually 90 % private offices), coworking spaces (up to 80 % open plan office), hybrid offices (private offices and coworking space combination) are seen as the fundamental aspect of agile work strategies and support the temporary decrease in general office market due to pandemic situation.

Slovakia. According to Office Marketbeat prepared by Cushman & Wakefield (2020), higher share of renegotiations results from companies increasingly seeking cost reduction in their workplaces which leads to even lower share of employees that are physically present in offices and hence more competitive leasing market overall. Many tenants tend to move to office premises of higher standard while downsizing to smaller leased areas. Increasing vacancy rates, strong pipeline and downsizing of some tenants put increasing pressure on office landlords in Bratislava. However, leasing numbers are in line with last year.

Table 25 below represents office market snapshot in selected CEE countries and built stock part occupied by GBSCs employees in 2020 (according to projected employment in GBSCs, see Table 20). Due to lack of information about built stock part in all the cities in selected CEE countries (only capitals are presented in Table 25), built stock part occupied by GBSCs employees in 2020 shows what is the approximate percentage of built stock in capitals is occupied by all GBSCs employees in selected CEE countries. Therefore, total number of GBSCs employees would approximately occupy 42.24 % of built stock in Prague, 27.37 % of built stock in Budapest, 32.99 % of built stock in Vilnius, 89.47 % of built stock in Warsaw, 74.94 % of built stock in Bucharest and 31.87 % of built stock in Bratislava.

Table 25. *Office Market Snapshot and Built Stock Occupied by GBSCs Employees in Selected CEE Countries, 2020*

Location (capital)	Built Stock (sq. m)	Avai-lability (sq. m)	Vacan-cy rate (%)	Under cons-truction (sq. m)	Sq. m oc-cupied by GBSCs employees in 2020*	Built stock part occu-pied by GBSCs emplo-yees in 2020
Czech Republic (Prague)	3,727,335	261,003	7.00%	154,757	1,574,300.00	42.24%
Hungary (Buda-pest)	3,866,460	312,245	8.10%	446,055	1,058,400.00	27.37%
Lithu-ania (Vilnius)	774,700	n/a	7.20%	246,000	255,600.00	32.99%
Poland (War-saw)	5,822,400	559,200	9.60%	579,300	5,209,400.00	89.47%
Romania (Bu-charest)	2,924,500	314,400	10.80%	388,800	2,191,500.00	74.94%
Slovakia (Bratisla-va)	1,889,200	189,800	10.00%	171,600	602,000.00	31.87%

Source: *Cushman & Wakefield (Q3 2020), CBRE (2021), author's calculations according to Table 20*

Therefore, according to insights from real estate experts, countries office market snapshots and calculated built stock part occupied by GBSCs employees in 2020, author of this dissertation concludes that despite the fact of pandemic situation, which

is seen as temporary condition, current and potentially increasing employment in GB-SCs market in selected CEE countries is one of the main drivers of demand for office spaces. New properties building, renovation of already built properties and rental of all the available is creating new working places, opportunities and economic value for building and office rental sectors in selected CEE countries. What is more, relatively low vacancy rates in built stock shows the demand for office spaces is being covered wisely. The lowest vacancy rate in Czech Republic (7 %) and Lithuania (7.2 %) even in pandemy times shows the further potential for increasing demand for new properties and GBSCs as new market players or expanding existing market players are potentially one of the most important drivers for it.

Catering market growth influenced by GBSCs. Author of this dissertation finds it difficult to make comprehensive analysis of expansion of catering market, which is being influenced by GBSCs due to lack of data and clear reason for opening new cafes and restaurants on all selected CEE countries level, which can be not necessarily the outcome of GBSCs only. However, it is clear that each new business center, where GB-SCs are usually solely located due to high employees number or located together with other companies, attracts new catering market players.

Author of this dissertation, who was working in one of the GBSCs in Vilnius for more than 7 years, would also complement that GBSCs create promising opportunities for small food and beverages businesses. GBSCs offices attract food and beverages wagons, self-service machines and other similar small businesses, which are popular choice as lunch or snacks alternative for GBSCs employees. What is more, massive sports event or team building activities of GBSCs employees attract different catering businesses.

Cleaning market growth influenced by GBSCs. Due to confidential information about the services providers and these services prices, there is no possibility to make exact calculations regarding cleaning services in GBSCs in selected CEE countries. However, according to approximate calculations of sq. m occupied by GBSCs employees in 2020 in selected CEE countries capitals (see Table 26), there is 1,574,300.00 sq. m of offices in Prague, 1,058,400.00 sq. m offices in Budapest, 255,600.00 sq. m offices in Vilnius, 5,209,400.00 sq. m offices in Warsaw, 2,191,500.00 sq. m offices in Bucharest and 602,000.00 sq. m offices in Bratislava (see Table 25), which create value and jobs in commercial real estate cleaning market.

Table 26. *Hourly Rate for Cleaning*

Country	City	Hourly USD rate for cleaning, 2014	Hourly USD rate for cleaning, 2018	Hourly USD rate for cleaning, 2019	Approximate hourly EUR rate for cleaning, 2020	Cleaning market revenue due to 1 hour cleaning offices occupied by GBSCs in 2020, EUR
Czech Republic	Prague	7	8	7	6.26	9,855,118.00
Poland	Warsaw	10	8	7	6.26	32,610,844.00

Source: *Deutsche Bank (2019), author's calculations*

According to Deutsche Bank Research (Mapping the World Prices 2019), hourly USD rate for cleaning in Prague and Warsaw in 2019 is 7 $ (see Table 26). Hourly rate for cleaning are not available for other selected CEE countries analyzed in this dissertation and data from 2020 are not available. However, taking into account similarities of the countries analyzed in this work, the price level should be similar in all analyzed CEE countries. Since this rate is calculated for both commercial and non-commercial cleaning, author assumes that there can be some inadequacies in calculations due to differences in commercial and non-commercial real estate prices. However, author has taken 6.26 EUR rate for cleaning and calculated approximate cleaning market revenue due to 1 hour cleaning offices occupied by GBSCs in 2020.

Since it is not only daily cleaning, but also such cleaning services as vacuuming, window cleaning, floor cleaning, carpet & upholstery cleaning, and other cleaning services, which are needed for GBSCs, it is expected that several cleaning services employees have to work all day to clean such building (it depends on the office sq. m and expectations for cleaning). For example, according to interview with the head of SEB Global Services Vilnius, 10 full-time (8 working hours) cleaners and 11 evening-shift cleaners are employed to fulfill the needs of SEB Global Services Vilnius. If we assume that 21 cleaner employment in SEB Global Services generate at least 21 minimum national monthly salaries (607 EUR gross in 2020 in Lithuania, Lithuanian Ministry of Social Security and Labour (2021)), SEB Global Services Vilnius generates at least 12,747.00 EUR monthly revenue for cleaning market. Taking into account that average approximate hourly cleaning rate in Warsaw and Praha was 6.26 EUR (see Table 26),

author assumes that Lithuania should have similar rate, so the real SEB Global Services contribution to monthly cleaning market revenue should be approximately 21,033.60 EUR. If author would know the working hours needed for each sq. m cleaning in GBSCs buildings, it would be possible to calculate the more exact cleaning services market value created due to existence of GBSCs in selected CEE countries. However, author had no possibility to access such information. Further cleaning services market analysis is needed to make more accurate calculations.

Despite limited data for more accurate calculations, the following generalization can be made: commercial real estate cleaning market experiences growth together with each additional sq. m offices in GBSCs market in selected CEE countries.

Transportation (both air and land) services market growth influenced by GBSCs. Due to lack of harmonized and GBSCs-oriented statistics for transportation services market in selected CEE countries and due to no possibility to separate GBSCs related trips from other trips, there is no possibility to make calculations on GBSCs impact on this market. However, personal experience of author, who was working in one of the GBSCs located in Vilnius for more than 7 years (country of origin of organization is Sweden), due to specific business model, GBSCs employees are working in international environment and despite the fact that the majority of communication between colleagues, stakeholders can be done at a distance (by phone, conference call, e-mail etc.), they are tend to travel due to different business purposes: processes migration projects, learnings, teambuilding activities, special recruitment process, problem solving sessions etc. Such business trips provide travelling by air transport (flights) and land transport (taxi from airport, from/to work, public transport from/to work or after work activities). At the same time, national investment promotion agencies reports analyzed in previous Chapter show that GBSCs tend to add additional benefits such as travel to work and other travel expenses reimbursement for their employees. Therefore, based on this experience, generalization that GBSCs positively influence transportation services market in selected CEE countries can be made.

Tourism, accommodation and leisure time market growth influenced by GBSCs. Due to lack of harmonized and GBSCs-oriented statistics for tourism market in selected CEE countries and due to no possibility to separate GBSCs related tourism activities from other activities, there is no possibility to make calculations on GBSCs impact on this market. However, personal experience of author, who was working in one of the GBSCs located in Vilnius for more than 7 years, shows that after work activ-

ities such as team buildings, massive sport events and other team activities or business trips to CEE locations where GBSCs are located, positively influence tourism, accommodation and leisure market in selected CEE countries. It is common practice to have a monthly/yearly budget on different team activities purpose, different cities are being visited, revenue is being generated for museums, art galleries, other cultural and entertainment activities organizers, rural tourism providers, accommodation providers such as hotels, restaurants etc. Author of this dissertation sees not only positive financial (revenue) impact for tourism, accommodation and leisure time markets, but also improvement of life quality of GBSCs employees, to whom possibility to take part in cultural, sport and other similar activities is being provided. Author sees this intangible effect as very important for selected CEE countries economic development (see more information in Chapter *3.1.4. Global Business Services Centers Impact on Life Quality Indicators Testing Stage)*.

Education services and conferences market growth influenced by GBSCs. Personal development and learning in international environment opportunities (see Table 4 and Chapter *3.1.4. Global Business Services Centers Impact on Life Quality Indicators Testing Stage*) is life quality indicator, which is being discussed in majority of selected CEE countries report as one of the benefits and competitive advantages of GBSCs. Due to lack of harmonized and GBSCs-oriented statistics for education and conferences markets in selected CEE countries, there is no possibility to make calculations on GBSCs impact on this market. However, personal experience of author, who was working in one of the GBSCs located in Vilnius for more than 7 years, shows that GBSCs investments into education, learning and employees development generate significant revenue for education and conferences market growth. Usually GBSCs have budget for education, learning and development purpose, which is being used on a daily/weekly/monthly basis. Some learning such as languages courses, internal learnings are being held within the GBSCs premises (part of them are organized by GBSCs employees other part is organized by external services providers), other learnings are being held outside GBSCs in this way contributing to development of education services and conference market growth. Well-educated employees, in author's opinion, is a valuable intangible asset in countries economies, so despite the fact that it is difficult to express the value of it in numbers, there is no doubt such investments pay off not only for GBSCs, but for the countries, in which GBSCs are located.

Other secondary services market growth influenced by growth of GBSCs.

Personal experience of author, who was working in one of the GBSCs located in Vilnius for more than 7 years, shows that development of GBSCs and increasing number of employees in them create value for other secondary services markets such as:

- Postal services. There are some processes performed by GBSCs employees, which are still using physical letters for customers. Also, some internal procedures need postal services to deliver some documents from/to country of origin to/from GBSCs located in different location.

- Laundry services. Since there is usually some dress code in GBSCs and GBSCs employees are frequent users of laundry services, more such services providers are offering their services to GBSCs employees.

- Medical care services – health insurance is one of the common benefits for GBSCs employees distinguished in GBSCs reports in selected CEE countries. This encourages GBSCs employees to use privately held medical care services. Author of this dissertation sees this valuable not only from medical care services providers revenue prospective, but as valuable practice on the country level. The more health care expenditures are used via GBSCs health insurance, the more country saves on public health and the healthier nationals are. In author's view, it is one of the critical life quality indicators.

- Sports/wellness/health centers services – health insurance in GBSCs mentioned above is usually covering sports/wellness/health Centers expenditures. This generates additional revenue for these services providers and complements the life quality indicator value described by author in medical care services above.

- Technical support services. GBSCs are located in the offices buildings, which need technical support on a daily basis. Therefore, this generates additional value for such services providers as plumbers, electricians, security and other support staff.

- Archiving services. Despite the fact that there is not so huge need for archiving of paper documents, different electronic archiving solutions are being purchased by GBSCs.

- Gas, water supply.

- Sales of other goods and services.

- Other services, which are not distinguished here, but are possibly being used by GBSCs employees.

The experts surveyed by the author of this dissertation also agree that cross-sectorial growth is one of the most important outcomes of GBSCs development in selected CEE countries.

Therefore, the main outcomes of GBSCs impact on migration indicators testing stage noticed by the author of this scientific work are the following:

GBSCs in selected CEE countries show significant positive impact on cross-sectorial development. The scope of the expansion of GBSCs and their way of running business let other secondary market players to expand their businesses, too.

• Some calculations and the following research on cross-sectorial development was done: office market snapshot and built stock occupied by GBSCs employees in selected CEE countries, hourly rate for cleaning and cleaning market revenue due to GBSCs cleaning, SEB Global Services Vilnius impact on cross-sectorial development (see Chapter *3.1.9. SEB Global Services Business Case as Example of Multiplier Effect of Global Business Services Centers Impact on Macroeconomic Indicators in Lithuania*) and other. However, lack of currently accessible information about all GBSCs in selected CEE countries complicates further research on this topic and enables partial researches according to general publicly accessible information or information revealed to the author by the experts. Therefore, this problem and possible solutions should be included into further author's researches.

• The research performed in second logical part of dissertation above indicates that there can be a positive GBSCs effect on cross sectorial growth indicators, but author of this dissertation will not be able to verify this conclusion in the fourth dissertation research logical part where panel data analysis will be performed due to insuficcient and unaccessible statistical data, which can be mainly collected from separate GBSCs in different GBSCs countries. This topic will be included into the further researches.

3.1.6. Global Business Services Centers Impact on Regional Development Indicators Testing Stage

Sixth GBSCs impact on macroeconomic indicators in selected CEE countries stage is testing how regional development indicators are being influenced by GBSCs (see Figure 26). Author's aim is as accurately as possible for each selected CEE country to answer to the following question: how GBSCs influence regional development? The following sources were used for the analysis: Business Services Sector in the Czech Republic by ABSL (2016, 2017, 2019, 2020), Paslaugų centrai Lietuvoje (2015), Lithuania's Business Services Report (2016-2020), Business Services Centers in Hungary (2017-2020), Business Services Sector in Poland by ABSL (2014-2020), Romania's Business

Service Sector IT&C, SSC & BPO (2018, 2020), Business Services Sector in Romania by ABSL (2018-2020), Shared Service & Business Process Outsourcing Centers in Slovakia (2017-2021).

Research methods used in this part of scientific work: secondary data analysis, qualitative comparative analysis, descriptive statistics, experts survey.

Figure 26. *Regional Development Indicators Testing Stage Elements*
Source: *compiled by author*

Czech Republic. According to Business Services Sector in Czech Republic Report (2020), the metropolitan hubs of Prague, Brno and Ostrava have been joined by clusters of new centers in over 20 regional locations that now host a growing hife of GBSCs. 50 % of GBSCs in the Czech Republic are located in the capital Prague, 22 % in Brno, 11 % in Ostrava, and the rest in other locations. What is more, the efforts in regional development made by the country are reflected in high scoring on attractiveness of the Czech regions. Ostrava is nominated as 6th most attractive mid-sized European city, Plzen is 4th most attractive small European city, Pardubice is 8th most attractive micro European city. What is more, 3 of the 10 top most attractive Eastern European regions are withon the Czech Republic – Prague Region (3rd), Plzen Region (9th), South Moravia (10th).

Hungary. According to Hungarian GBS Report (2020), the majority of GBSCs are located in Budapest or close to it, in Pest county. Other two big cities where GBSCs are located are Debrecen and Miskolc. It is worth to mention that the report states that in the decade from year 2010 to year 2020, four towns Biatorbagy, Hatvan, Szekszard and Szkolnok emerged on GBSCs sector map with new established centers. Therefore, despite the fact that the highest growth of GBSCs was seen in capital – Budapest, the regional development stimulated by GBSCs was also noticed.

Lithuania. According to Invest Lithuania Reports from 2017-2020, Lithuanian GBSCs landscape in terms of investment location is rather narrow and regional development just started to show the first results. In 2017 majority of GBSCs located in other cities than Vilnius (capital) were collocated in Vilnius and it was only one GBSCs in Panevezys and 4 colocated in Vilnius and Kaunas. Year 2019 shows slightly better situation and counts 1 GBSCs in Panevezys, 3 GBSCs in Klaipeda, 17 GBSCs in Kaunas, 7 colocated in Vilnius and Kaunas and the vast majority of GBSCs (55) is located in Vilnius. Even though Vilnius was awarded as best city for Global Business Services in CEE for six years in a row since 2014, Lithuania should look for more opportunities for establishing GBSCs in the regions. Such city as Kaunas with the number of educational institutions and young professionals (37 thousand of students while in Vilnius this number was 52 thousand in 2019) named as the centre for tech studies has a huge potential according to experts from Invest Lithuania and can be called rising star after efforts in enhancing infrastructural aspects (which were and sometimes still are the main obstacle) to attract more investors. Located in the center of Lithuania, Kaunas is well connected to Vilnius and neighboring countries via road and rail links. It also has an international airport, providing connectivity to over 25 different destinations worldwide. Internationally acknowledged in 2015 as CEE's "Emerging city of the year", Kaunas holds great potential for growth. Also, Lithuania's third largest conurbation, the port city Klaipeda, remains the destination of choice for logistics companies GBSCs and has a yet untapped potential of maritime competences.

Poland. Poland can probably be named as the best CEE example of regional development stimulated by GBSCs. According to Business Services Sector in Poland by ABSL Report (2020), GBSCs are located and have created jobs in almost 50 cities, including 17 where at least 1,000 people were employed in 2019. Changes are ongoing in the sector, with employment at particular centers going up or down as a consequence of various processes, including consolidation, difficulties in finding employees, or chang-

es in the business models of individual companies.

Poland is the example where not capital Warsaw, but Kraków is the leader in terms of headcount at GBSCs. Kraków GBSCs employ 77,700 people (23 % of total employment in the sector). 64,000 jobs in the sector are provided in the number two city, Warsaw, and 52,000 in Wrocław. In comparison with 2016, Kraków's share of total employment in the sector has declined slightly in 2020 (-1 percent point – thereafter p.p.), as has Wrocław's (-0.9 p.p.), whereas Warsaw's and the Tri-City's have grown (+1.2 p.p. and +0.8 p.p., respectively, see Table 27).

Business Services Sector in Poland by ABSL Report (2020) presents a unique approach where GBSCs as local specialization is being identified (named location quotient – LQ). LQ identifies the locations where GBSCs sector is local specialization according to the following data: headcount at GBSCs in a given location, employment in a given location, total headcount at GBSCs in all locations under analysis, employment at all locations under analysis. The LQ enables to determine the locations where GBSCs jobs are "overrepresented" (LQ>1) or relatively "underrepresented" (LQ<1) in relation to the average. In academic studies, the threshold value for the occurrence of a local specialization is taken to be an LQ of 25 % above the average, that is, LQ>1,25. With this as a point of reference, the GBSCs sector can be regarded as a local specialization in Kraków, Wrocław, the Tri-City, Łódź and Bydgoszcz. Poznań (almost 1,25), Warsaw and Lublin also exceed the average (i.e. LQ>1). In other locations (Katowice and Metropolis GZM, Szczecin and Rzeszów), those values are below the average.

Therefore, according to distribution of GBSCs locations (in number of cases non capital cities are leading), location quotient and other noticed regional changes, Poland is an excellent example of regional development influenced by GBSCs sector. Statistical GBSCs data are being gathered and analyzed not only on the country level, but on the region and even city level, which show representative data for a regional development analysis on a detailed level.

Table 27. *Share of Locations in Total Headcount at GBSCs in Poland, 2016 and 2020*

Location	Share of headcount	Change in the share in employment structure
Kraków	23 %	**-1.0 p.p.**
Warsaw	19 %	**+1.2 p.p.**
Wrocław	15.4 %	**-0.9 p.p.**
Tri-City	8.3 %	**+0.8 p.p.**
Łódź	7.7 %	**+0.4 p.p.**
Katowice and Metropolis GZM	7.7 %	**+0.1 p.p.**
Poznań	5.4 %	**+0.2 p.p.**
Bydgoszcz	3.00 %	**-0.5 p.p.**
Lublin	2.3 %	**+0.1 p.p.**
Szczecin	1.7 %	**-0.1 p.p.**
Rzeszów	1.6 %	**-0.3 p.p.**
Other (including Kielce, Bielsko-Biała, Białystok, Opole, Olsztyn, Częstochowa)	5 %	**-0.1 p.p.**

Source: *Business Services Sector in Poland by ABSL (2020)*

Romania. According to information from Business Services Sector in Romania by ABSL (2020), most of the GBSCs (over 50 %) are primarily based in Bucharest (capital). However, other cities such as Cluj Napoca, Iași, Timișoara, Sibiu, Brașov etc. are emerging on GBSCs map in Romania. Due to the lack of additional information, there is no possibility to make grounded conclusions regarding Romania's regional development influenced by GBSCs.

Slovakia. According to Sario (2020), the majority of GBSCs in Slovakia are mostly located in the capital city of Bratislava or in the second largest city of Košice. Nevertheless, new hubs are gradually developing offering great combination of conditions for doing business in the GBSCs sector. Banská Bystrica, Nitra, Prešov, Trenčín, Trnava and Žilina are new destinations on the Slovak GBSCs map providing excellent conditions for business. The locations combine availability of high quality personnel, reasonable wage levels, competitive prices of real estate market and attractive investment incentives with the intensity up to 35 % of total eligible costs. All regional capitals

are important academic centers and transportation crossroads with excellent highway connection. Companies tend to establish their centers also in smaller cities benefiting from proximity to existing or former production facilities, lower level of wage costs/ rent of office space market and availability of attractive investment incentives with the intensity up to 35% of total eligible costs.

Therefore, the main outcome of GBSCs impact on migration indicators testing stage noticed by the author of this scientific work is the following:

• According to the GBSCs related reports mentioned in this Chapter and according to the opinion of the experts surveyed by the author of this dissertation, GBSCs impact on regional development is questioned. From one side, emergence and development of GBSCs in selected CEE countries have positive influence on regional development and provides opportunities to cities other than capital and to the youth from province, but from another side, in some cases the disproportion between bigger and smaller cities is even growing due to GBSCs.

• Poland is the only country, which shows proved GBSCs sector growth. Poland is collecting GBSCs related statistics on regional level and is the only analyzed CEE country where non-capital cities are leaders in GBSCs sector headcount and where location specialization is proved by higher location quotient than in capital – Warsaw. In order to achieve such deep regional development evaluation level, national strategy of statistics collection has to be improved allowing to access more accurate GBSCs related statistics and operate with this data to evaluate the regional development stimulated by GBSCs. After it is done, panel data analysis or other econometric methods could be applied.

3.1.7. Global Business Services Centers Impact on GDP Related Indicators Testing Stage

Seventh GBSCs impact on macroeconomic indicators in selected CEE countries stage is testing how GDP related indicators are being influenced by GBSCs (see Figure 27). Author's aim was as accurately as possible for each selected CEE country to answer to the following question: how GBSCs influence GDP related indicators?

Research methods used in this part of scientific work: secondary data analysis, experts survey, panel data analysis.

According to expert from Lithuania (data from 2019), GBSCs generated 1.5 %

of Lithuania's GDP. Surveyed experts from Lithuania, Poland unitedly expressed the opinion about the comparatively low importance of GBSCs impact on GDP related indicators (importance ranked 2 from 4, see Appendix 19). Expert from Slovakia expressed the opinion that GBSCs impact on GDP related indicators is quite important (importance ranked 3 from 4, see Appendix 19), but there are some limitations in collecting GDP related data and paralleling it with GBSCs.

The expert from Poland mentioned she does not have GBSCs impact on GDP related indicators data and the expert from Slovakia mentioned that Slovakia do not have clear data on yearly GDP growth influenced by GBSCs in Slovakia. Slovakia has tracked the annual contribution to the Slovak economy measured on other indicators instead (employee income tax, social insurance contribution or salaries expenditures), see Appendix 19.
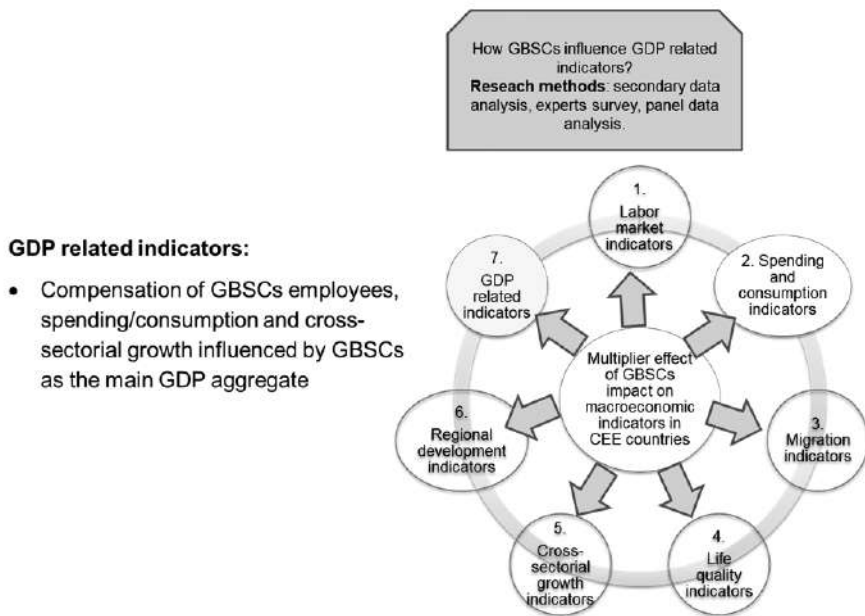
Figure 27. *GDP Related Indicators Testing Stage Elements*
Source: *compiled by author*

According to Eurostat (accessed on 2020-03-27), GDP at market prices is the final result of the production activity of resident producer units and it can be defined

in three ways: GDP Output approach. GDP Expenditure approach and GDP Income approach. According to income approach GDP is „compensation of employees" + „gross operating surplus and mixed income" + „taxes less subsidies on production and imports". What is more, according to Eurostat, while not strictly national accounts aggregates, such variables as population and employment are widely used in a national accounts context. Employment and its components are important economic indicators in their own right, and they serve in the construction of derived indicators, turning monetary aggregates from absolute into relative indicators and thus allowing the comparison of economies of very different size. This statement repeats the importance of other indicators also mentioned by the expert from Slovakia and proves the previously stated opinion that other than GDP indicators can reflect the impact of GBSCs on selected CEE countries economies.

Taking into account experts survey results, Eurostat definition given above together with the interpretation of employment and its component as an important GDP aggregate representing the situation of GDP as well as research made by author, author of this dissertation assumes that GBSCs potentially can have comparatively high impact on GDP indicator mainly due to employment, spending/consumption and cross-sectorial growth enhanced by GBSCs (see Chapters *3.1.1. Global Business Services Centers Impact on Labor Market Indicators Testing Stage, 3.1.2. Global Business Services Centers Impact on Spending and Consumption Indicators Testing Stage, 3.1.5. Global Business Services Centers Impact on Cross Sectorial Growth Indicators Testing Stage* and *3.1.9. SEB Global Services Business Case as Example of Multiplier Effect of Global Business Services Centers Impact on Macroeconomic Indicators in Lithuania*). The most important GDP aggregate, on which GBSCs have influence in selected CEE countries, according to the author is employment, which stimulate further changes in other GDP aggregates – spending/consumption and cross-sectorial growth indicators. What is more, research made by author revealed that average salary in GBSCs in selected CEE countries are higher than national average salary. Moreover, GBSCs offer plenty of additional non-payroll benefits to the employees. Therefore, author of this dissertation assumes that in terms of compensation of employees each GBSCs in selected CEE country contribute more to country's GDP than other average firm.

Therefore, the main outcome of GBSCs impact on migration indicators testing stage noticed by the author of this scientific work is the following:

- There is a clear positive GBSCs impact on GDP related indicators. However, due to statistically significant data unavailability for selected CEE countries, which is also proved by the experts from Poland and Slovakia, there is a limited possibility to conduct comprehensive quantitative investigation on GBSCs impact on GDP related indicators and some employment components, spending and consumption, cross-sectorial growth indicators mentioned previously in the research and by the surveyed experts are better reflection of GBSCs impact on macroeconomic indicators in selected CEE countries. Therefore, author of this dissertation assumes that GBSCs potentially can have comparatively high impact on GDP indicator mainly due to employment, spending/consumption and cross-sectorial growth enhanced by GBSCs. GDP macroeconomic indicator will be also addtionally verified using panel data analysis.

3.1.8. Evaluation of Multiplier Effect of Global Business Services Centers Impact on Macroeconomic Indicators

In this chapter of dissertation author will analyze multiplier effect of GBSCs impact on macroeconomic indicators in selected CEE countries based on theoretical background of economic impact/multiplier effect described in Chapter *1.2.4. Interconnectedness Between Global Business Services Centers and Macroeconomic Indicators Expressed by Multiplier Effect* as well as macroeconomic indicators affected by GBSCs analyzed in this dissertation in Chapters 3.1.1 – 3.1.7. Data collected from scientific literature analysis, author's personal experience of work in one of GBSCs in Lithuania, Vilnius, results of scientific research accomplished by author as well as experts questionnaire results will be used to reveal the multiplier effects of GBSCs in selected CEE countries. Author would like to emphasize that due to research limitations mentioned in Chapter *3.2. Revealing of Research Limitations*, in this particular Chapter author will distinguish qualitative aspects of multiplier effect received from GBSCs in selected CEE countries (see Figure 28 and explanation below).

Direct economic effects:

1. <u>Theoretical statement:</u> *GBSCs business implementation and maintenance has impact on changes in local business activity due to private business decisions or public policies and programs.* <u>Scientific justification:</u> appearance of GBSCs in selected CEE countries undoubtedly has such impact. First of all, the appearance and positive outcomes from GBSCs in selected CEE countries seen and evaluated by policymakers resulted in naming GBSCs as key sector players and putting the effort of investment promoting

agencies to attract more such investments to these countries (see Table 28). Investment promoting agencies in selected CEE countries distinguish the following facts about GBSCs as one of the key sectors:

- Business sector is now one of the fastest growing industries in Czech Republic. Potential for business shared services in the Czech Republic is not just it is the second most attractive country in the CEE region, but also one of the most attractive countries in Europe with respect to this sector (CzechInvest, 2019).

- Hungarian Business Services Centers expand to Centers of excellence with complex, services at a high value-added activities. The experiences of these firms are extraordinarily positive (HIPA, 2019).

- Having witnessed dramatic growth over the last 6 years, Lithuania's Business Services Sector is now home to a number of well known international corporations. Their Centers provide a diverse range of complex services to clients across the globe in over 30 different languages. And, with a young population and very high graduate numbers, Lithuania remains one of the least saturated Business Services locations in the region (Invest Lithuania, 2019). Business Services Sector includes 'in-house' Global Business Services Centers, Business Processing Operations primarily servicing external clients, IT Centers, and R&D Centers (including software development). Poland is the regional leader – both in the overall number of Centers as well as in the total volume of employment within the industry. More than 1050 Centers operate across the country (which accounts for about 70 % of all GBSCs in CEE), while the total employment figure exceeded 240,000 people, accounting for nearly 50 % of the total number of employees within the industry in this part of Europe. The modern GBSCs sector in Poland has been developing dynamically for over 15 years now, and the average annual increase in employment stands at between 15 and 20 percent in recent years (PAIH, 2019).

- GBSCs & BPOs give job opportunities leaving a significant footprint in the Slovak economy. These centers are important employers of young people with year-on-year headcount growth rate up to 10 %. Thanks to 15+ years of experience and the GBSCs & BPOs dynamic growth, Slovak centers are being outsourced more and more complex functions. Majority of the GBSCs and BPOs are transforming transactional tasks into value-added services and are striving to found centers of excellence. In 2016 the Government of the Slovak Republic has approved an action plan to actively support the development and expansion of the GBSCs & BPOs in Slovakia. There is

also institutional support of established GBSCs & BPO in Slovakia. GBSCs & BPOs in Slovakia can join the association called Business Service Center Forum, which includes the majority of companies in the sector and supports their interest at various platforms (SARIO, 2019).

1. Direct economic effects

Policymakers name GBSCs as a key sector
- GBSCs increase attractiveness of the countries
- positive GBSCs experience and expansion to centers of excellence broaden countries opportunities
- solid and growing (youth) employment in GBSCs

Other private business decisions and public policies changes due to GBSCs
- investment incentives for GBSCs
- education system restructuring and new programs
- employment restructuring
- new activities and legal entities created for institutional support of GBSCs

Employment in GBSCs and other economic gain derived from it
- GBSCs create significant part of working places and GBCCs/total employment ratio has a tendency to grow
- other gain due to employment in GBSCs: opportunities for youth, social science graduates, GBSCs employees spending and consumption trajectories changes, positive re-emigration and brain drain changes, GBSCs employees life quality indicators changes

Cost shift and location competitiveness
- positive migration indicators changes due to GBSCs proves attractiveness of CEE to population growth and retention
- increased live standards due to higher than average salary in GBSCs
- changes in business operating costs due to higher competition in employment market

2. Indirect economic effects

GBSCs directly affect other businesses, which are being established or developed to fulfill the GBSCs needs
- Other affected businesses: real estate market, catering market, cleaning market, education services and conferences market, transportation (both air and land) services market, tourism, acommodation and leisure time market, other secondary services markets– postal services, laundry services, medical care services, sports/welness/health centers services, technical support services, archiving services, gas, water supply services, sales etc.

3. Induced economic effects

GBSCs impact further shifts in spending as a consequence of the change in employees and payroll of directly and indirectly affected businesses, which leads to further business growth throughout the local economy.
-GBSCs employees generate generate additional disposable income, which can be spent/consumed on food, clothing, shelter and other consumer goods and services, or saved and impact household saving rate, which increases country's capacity to cope with a cyclical downturn (short term) and economy's capacity to finance itself (long term).

4. Dynamic economic effects

GBSCs consequences of broader shifts over time
-shift in population due to positive migration changes due to working places offered by GBSCs
-shift in business location pattern – CEE seen more attractive and long term destination in GBSCs strategies
-shifts in income and wealth in economies mostly seen through improved life quality indicators of GBSCs employees and their family members

Figure 28. _Global Business Services Centers Macroeconomic Outcomes Multiplier Effect in CEE Countries_

Source: _compiled by author according to methodology developed by Economic Development Research Group_

What is more, GBSCs sector named as one of the key sectors in selected CEE countries also results in such policy changes as investment incentives, education systems restructuring and new programs, which have to fit increasing GBSCs employment needs, employment restructuring within the countries and policymakers orientation toward new employment paths etc. (examples of such changes in specific CEE countries can be found in Chapter *3.1.1. Global Business Services Centers Impact on Labor Market Indicators Testing Stage.*)

Furthermore, institutional support and activities aiming to support and develop GBSCs sector are being seen as change driven by increasing importance of GBSCs in selected CEE countries. Slovakia is showing a good example of creating the association called Business Service Center Forum, which was established with the mission to raise awareness of the GBSCs sector's role in the Slovak economy and help it grow further in Slovakia (more information about the Forum can be found in Chapter *3.1.1. Global Business Services Centers Impact on Labor Market Indicators Testing Stage.*

Table 28. *Key Sectors in CEE Countries Economies Distinguished by Investment Promotion Agencies, 2019*

Country	Key sectors distinguished by investment promotion agencies	Details about investment promotion agencies and source
Czech Republic	Aerospace, Automotive, Business Services, Electrical Engineering and Electronics, Advanced Engineering, ICT and Data Centers, Life Sciences, Nanotechnology	Business and Investment Development Agency CzechInvest, key sectors <https://www.czechinvest.org/en/Key-sectors/Business-Services>
Hungary	Automotive Industry, Business Services Centers, Electronics Industry, Information & Communications Technology, Food Industry, Life Science, Logistics & Transportation Industry, Renewable Energy, Medical Technology	Hungarian Investment Promotion Agency HIPA, key investment sectors <https://hipa.hu/main#sectors>

Country	Key sectors distinguished by investment promotion agencies	Details about investment promotion agencies and source
Lithuania	Global Business Services and ICT, Manufacturing, Technology	Lithuanian Investment Promotion Agency Invest Lithuania, key sectors <https://investlithuania.com/key-sectors/>
Poland	Aerospace Sector, White Goods Sector, Electronics Sector, Automotive Sector, Business Services Sector, Food Processing Sector	Polish Investment & Trade Agency PAIH, prospective sectors of the Polish economy <https://www.paih.gov.pl/sectors>
Romania	IT & Communication, Automotive, Aerospace, Bio economy Industry, Agriculture, Creative Industry	Government's leading body in promoting and facilitating foreign investment in Romania InvestRomania, strategic sectors <http://investromania.gov.ro/web/doing-business/> GBSCs are under IT & Communication sector according to this source: <http://investromania.gov.ro/web/wp-content/uploads/2018/10/InvestRomania-ITC_BPO-SSC_EN_.pdf>
Slovakia	Automotive Industry, ICT, SSC & BPO, Wood Processing Industry, Aerospace, Mechanical Engineering, Chemical Industry, Electrical Engineering Industry	Slovak Investment and Trade Development Agency SARIO, sey sectors overview <https://www.sario.sk/en/invest/sector-overview>

Source: *CzechInvest (2019), HIPA (2019), Invest Lithuania (2019), PAIH (2019), Invest Romania (2019), SARIO (2019)*

2. Theoretical statement: *investment and spending decisions of GBSCs directly affect the flow of spending, income and jobs associated with economic activity*. Scientific justification: due to specifics of GBSCs business models, the income is not the phenomenon, which can be evaluated here since GBSCs create the income not for host countries, where they are located, but for home countries where the actual business is being set. However, analysis performed in this scientific work shows that the main in-

vestment and spending decisions in GBSCs in selected CEE countries are related to the main GBSCs intangible asset – people. GBSCs create significant part of working places in selected CEE countries (from 1.45 % to 2.17 % of total working places in 2019) and GBSCs/total employment ratio has a tendency to grow, so potential for employment in GBSCs sector is increasing and the impact on labor market indicators is constantly increasing in importance (see Table 15).

What is more, each person employed in GBSCs contributes to creating much more intangible value for selected CEE countries economies than just financial value via earned salary and paid social contributions and other taxes. Research performed in this scientific work shows that investment and spending decisions of GBSCs related to employment directly affects such areas as positive youth employment indicators changes, positive changes in employment of social sciences graduates (they are the majority graduates in selected CEE countries), GBSCs employees spending and consumption trajectories changes, positive re-emigration and brain drain changes, GBSCs employees life quality indicators changes derived from benefits such as income and respectable working places/conditions in GBSCs, personal development and learning in international environment opportunities, attractive motivational packages, health/family/respect-oriented culture and values, respectable compensation for work, sustainability and other cultural aspects emphasized in GBSCs.

3. Theoretical statement: *cost shift and location competitiveness –GBSCs may change the cost of living and/or business operating cost within a given area, affect the attractiveness of an area for population growth and retention, and for business investment and retention.* Scientific justification: research performed in this scientific work shows that GBSCs in selected CEE countries positively affect migration indicators, which means the attractiveness of selected CEE countries for population growth and retention. What is more, GBSCs in selected CEE countries affect the living standards of GBSCs employees, who receive higher than average salaries, as well as changes competition level in employment market, which forces other market players to offer better working conditions to their employees. The competition among market players undoubtedly rises business operating costs in selected CEE countries, but there is the tendency characteristic to GBSCs business model can be noticed – these organizations increase their business operating cost, but compensate this by optimizing the processes within GBSCs or transferring more sophisticated business processes to be performed in GBSCs. Therefore, author notices that transformation path of GBSCs usually leads to

the aim to have Centers of excellence in selected CEE countries, which according to the author is seen as long-term strategy for existence and further investments into GBSCs in selected CEE countries.

Indirect economic effects:

1. <u>Theoretical statement:</u> *business growth/decline resulting from changes in sales for suppliers to the directly-affected businesses.* <u>Scientific justification:</u> appearance and developments of GBSCs in selected CEE countries directly affect other businesses, which are being established or developed to fulfill the GBSCs partial or whole needs. Research performed in this scientific work distinguished the following businesses, which are being affected by GBSCs in selected CEE countries: real estate market growth influenced by building and rent of premises for developing and new GBSCs, catering market growth influenced by GBSCs, cleaning market growth influenced by GBSCs, education services and conferences market growth influenced by GBSCs, transportation (both air and land) services market growth influenced by GBSCs, tourism, accommodation and leisure time market growth influenced by GBSCs, other secondary services market growth – postal services, laundry services, medical care services, sports/wellness/health Centers services, technical support services, archiving services, gas, water supply services, sales etc. – influenced by growth of GBSCs (see Chapter *3.1.5. Global Business Services Centers Impact on Cross Sectorial Growth Indicators Testing Stage*).

Induced economic effects:

1. <u>Theoretical statement:</u> *GBSCs impact further shifts in spending on food, clothing, shelter and other consumer goods and services, as a consequence of the change in employment and payroll of directly and indirectly affected businesses. This leads to further business growth/decline throughout the local economy.* <u>Scientific justification:</u> according to research performed in this scientific work (see Chapter *3.1.2. Global Business Services Centers Impact on Spending and Consumption Indicators Testing Stage*), GBSCs employees in selected CEE countries, who receive higher than average salary, generate additional disposable income, which can be handled in two ways: spend or consume more (this would influence household consumption expenditure indicators, investment indicators, cross-sectorial growth indicators) and save more (this would influence households saving rate). Projected additional annual gross disposable income, which depends on projected employment increase in GBSCs, which is created due to higher average salary in GBSCs in selected CEE countries in 2020 calculated by author of this dissertation shows the annual amount, which is is derived from the difference

between average GBSCs salary and average national salary in selected CEE countries and shows how much is additionally spent/consumed or saved by one GBSCs employee, who earns higher wage than country average. These calculations show that each GBSCs employee in selected CEE countries generates from approximately 5 thousand to 18 thousand EUR per year, which is the amount, which can be spent/consumed or saved on food, clothing, shelter and other consumer goods and services, or saved and impact household saving rate, which increases country's capacity to cope with a cyclical downturn (short term) and economy's capacity to finance itself (long term).

Dynamic economic effects:

1. <u>Theoretical statement:</u> GBSCs *consequences of broader shifts over time in population and business location patterns, land use and resulting land value patterns, which may also affect government costs and revenues. These changes will ultimately affect income and wealth - both overall and for particular groups of people in the affected area.* <u>Scientific justification:</u> research performed in this scientific work shows the broader shifts such as return migration to country of origin in selected CEE countries due to employment opportunities offered by attractive employers – GBSCs. This also prevents brain drain, which is broad shift since potentially educated and in other terms valuable human assets are important for further economy development (see Chapter *3.1.3. Global Business Services Centers Impact on Migration Indicators Testing Stage).* What is more, business location patterns are showing decisive GBSCs investment flow to selected CEE countries and transferring more sophisticated business processes, which shows GBSCs long term strategy for these destinations. Huge investments in building of new business offices or updating of existing offices to maintain GBSCs needs in selected CEE countries also has impact on real estate sector and land value (see Chapter *3.1.5 Global Business Services Centers Impact on Cross Sectorial Growth Indicators Testing Stage.* Furthermore, GBSCs in selected CEE countries affect life quality indicators of GBSCs employees, their family members and other businesses within the country, which leads to further income and wealth changes (see Chapter *3.1.4. Global Business Services Centers Impact on Life Quality Indicators Testing Stage).*

The model for evaluation of GBSCs impact on macroeconomic indicators (see Figure 14 and Tables 5-11) as well as the analysis of the direct, indirect, induced and dynamic GBSCs macroeconomic outcome multiplier effect show that there is close interconnectedness between all the 7 macroeconomic indicators groups distinguished in this dissertation and paralleled with GBSCs. Therefore, the multiplier effect analysis

is better contributing to the improvement of exploration level of evaluation of GBSCs macroeconomic outcomes than it is done when each macroeconomic indicator is solely paralleled with GBSCs.

3.1.9. SEB Global Services Vilnius Business Case as Example of Multiplier Effect of Global Business Services Centers Impact on Macroeconomic Indicators in Lithuania

Due to sensitive, not publicly accessible data and lack of systemized statistical data for GBSCs, there is limited possibility to make comprehensive research on all or at least substantial part of GBSCs in selected CEE countries and their multiplier effect on the economies. Therefore, author of dissertation, who is employee of one of the most important GBSCs in Lithuania, will combine data on GBSCs multiplier effect in CEE countries presented in Figure 28, personal knowledge and experience, publicly accessible information, one-on-one interview (the head of SEB Global Services Vilnius and the head of services Technopolis Vilnius) and experts interview (representatives from investment agencies from selected CEE countries) to reveal multiplier effect of macroeconomic outcomes in Lithuania affected by SEB Global Services Vilnius. Since Technopolis Ozas, from which SEB Global Services Vilnius leases the premises (office space, meeting rooms, event venues etc.), is indirect business, which probably has one of the highest economic impacts due to presence of SEB Global Services Vilnius, author of this dissertation additionally interviewed Technopolis Ozas representative – the head of services.

Invest Lithuania, who is the official agency for Foreign Direct Investment and Business Development in Lithuania, positioned Global Business Services as one of three key sectors in Lithuania. Invest Lithuania describes appearance and development of SEB GBSCs in Vilnius (SEB Global Services) as one of the great success stories. According to Invest Lithuania (2021), SEB Global Services plays a crucial role in providing business support services (operations, IT, HR and finance) for the SEB Group – its subsidiaries and units in 20 countries. Established in 2008, it began operations with 67 employees. In 2020, the SEB Global Services has a team of 1200 (interview with Rūta Jasiulionienė, 2020) highly skilled, multilingual and motivated employees. The convenient geographical location, availability of talent, well-established infrastructure, and the possibility for future growth, along with SEB's presence in Lithuania, were the main reasons why SEB chose Vilnius. The SEB Global Services unites professionals from the

junior to the senior, and is constantly on the lookout for team players with aspiration.

Direct economic effects:

- *Labor market indicators*: solid and constantly growing employment in SEB Global Services (from 67 employees in 2008 to 1,200 employees in 2020). Rūta Jasiulionienė, the head of SEB Global Services Vilnius, emphasized that it was sustainable employment growth, which counted 15-19 % per year. Despite the fact that there are majority of young professionals employed, SEB Global Services Vilnius currently provides more and more employment possibilities for more matured persons. According to the head of SEB Global Services Vilnius, average age of employee is 32 in comparison to 23 in 2013. There are several reasons to that according to Rūta Jasiulionienė: 1) The changing roles within organization and the need for experienced employees; 2) Increased maturity level of organization.

- *Migration indicators:* youth and social science employment opportunities in SEB Global Services prevents brain drain from Lithuania and positively affects re-emigration rate. According to Rūta Jasiulionienė, the head of SEB Global Services Vilnius, up to 5 % of employees in SEB Global Services in Vilnius re-emigrated as they were employed here. Therefore, SEB Global Services Vilnius employed around 60 re-emigrated Lithuanians in 2020.

- *Life quality indicators*: employment in SEB Global Services results in other economic gain such as improvement of employees and their family members life quality indicators. SEB Global Services distinguish the following gains working within organization: comprehensive health insurance, additional time-off depending on length of tenure, paid holidays on family occasions, paid time-off for volunteering, recreational spaces, coffee & snacks, fitness classes, office sports teams, yearly profit-sharing programme, contributions to employee pension funds, personal finance guidance, trainings locally and abroad, paid leave for work-related studies, training programmes and Employee LABs and other.

- *Cost shift and location competitiveness*: changes in business operating costs due to higher competition in employment market is seen since competitors and other market players in Lithuania are also offering attractive working conditions. From one side, it leads to operating cost increase, from another side, highly-skilled and experienced employees prove their excellence and due to long term values such as speed, quality and risk mitigation, through competence and end to end understanding SEB Global Services in Vilnius changes the whole value chain and becomes attractive location to

centralize more and more sophisticated business operations.

Indirect economic effects:

- *Cross-sectorial growth indicators*: other affected businesses: real estate market, catering market, accommodation and leisure time market (mainly for teambuilding), cleaning market, education services and conferences market, transportation (both air and land) services market, tourism market, other secondary services markets– postal services, laundry services, medical care services, sports/wellness/health Centers services, technical support services, archiving services, gas, water supply services etc. Estimated value/gain to other business that were created due to expansion of SEB Global Business Services as for 2020 (see Appendix 20).

Author interviewed the head of SEB Global Services Vilnius Rūta Jasiulionienė and the head of services in Technopolis Vytautė Jonaitė with emphasis on the indirect economic effects distinguished above and found out that SEB Global Services Vilnius has a huge impact on cross-sectorial growth indicators (see Appendix 20 and explanation in this Chapter below).

Real estate market: Technopolis Ozas leasable space. According to Vytautė Jonaitė, the head of services in Technopolis, expansion of GBSCs (SEB Global Services Vilnius, Western Union Processing Lithuania, Bazaarvoice, Booking.com, DXC technology Baltic and others), who leased the premises in Technopolis Ozas before, was a major incentive to expand their business, too and to build new buildings for lease. Since Technopolis aim is to cover not only office lease, they introduced and expanded such services as meeting rooms, conference venue, reception, security services, restaurants, cafes and other services needed to serve the needs of their customers. Therefore, expansion of SEB Global Services Vilnius, which is served by Technopolis, significantly affected Technopolis and other indirect businesses, which Technopolis supplies as a whole service package.

Technopolis Ozas providing more than 77,000 sq. m in leasable space in five different-sized office buildings – Alfa, Beta, Gama, Delta and Penta. New NOVA building completed in the end of 2020, which will provide additional 26,740 sq. m leasable space (Technopolis, 2020). According to Vytautė Jonaitė, Technopolis Vilnius service manager, since the significant part of Technopolis tenants are GBSCs, the expansion of these businesses encouraged the emergence of new office buildings. This has not significantly affected the employment growth in Technopolis itself, but provided possibilities for other businesses serving the needs of global business services in Technopolis

buildings.

SEB Global Services, who is currently occupying significant part of few buildings in Technopolis Ozas, will move and occupy two thirds of the new building NOVA, where such services will be at tenants disposal: conference venue, reception, security service, cleaning, gym, food market, cafe, parking spaces etc.

Catering market: restaurants, cafes in Technopolis Ozas and other catering services providers for business dinners, sports event, team buildings etc. There are five restaurants in each building Alfa, Beta, Gama and Delta, Cafe in Beta building and terrace on the roof of the DELTA building with possibility to arrange meals and drinks. Food market in NOVA building will be available after completion of this building (Technopolis, 2020).

In the three biggest restaurants located in Technopolis building, where SEB Global Services Vilnius employees are also having lunch, 300-900 lunches per day are being eaten. Two smaller cafes are serving 100-300 customers per day. If we count that 5 EUR is on average being spent on lunch and 2 EUR is being spent on average in cafe, approximately 1,500-4,500 EUR per day (around 30,000-90,000 EUR per month) is being spent on lunch and 200-600 EUR per day (around 4,000-12,000 EUR per month) is being spent in cafes. Since SEB Global Services Vilnius is taking a substantial part of leased buildings in Technopolis, the substantial part of these calculated amounts have to be generated by SEB Global Services Vilnius employees. What is more, SEB Global Services Vilnius contributes to working places created in these restaurants and cafes.

What is more, employees from SEB Global Services Vilnius contribute to smaller catering businesses such as food trucks (burgers, salads, kebab etc.), which are on a daily basis located near Technopolis buildings. Author has no detailed information on the quantitative expression of this contribution. However, if 1 SEB employee in average spends 5 EUR per month (approximate price for one lunch with beverage), SEB Global Services Vilnius generates for these businesses at least 6,000 EUR revenue per month.

According to Rūta Jasiulionienė, SEB Global Services Vilnius have approximately 10 dinners with around 6 participants per month with guests in Vilnius restaurants. If on average 20 EUR is spent for one dinner participant, approximately 1200 EUR per month is being spent for dinners by SEB Global Services Vilnius. It is only measurable part of the catering services used by SEB Global Services Vilnius.

Due to lack of statistical data, other company's events such as annual sports event, team buildings (which are usually being held on a monthly basis or more often)

are not included into calculations, but these expenditures on catering services would be much higher.

Cleaning market. 10 full-time (8 working hours) cleaners and 11 evening-shift cleaners are employed to fulfill the needs of SEB Global Services Vilnius. Therefore, SEB Global Services Vilnius creates 21 cleaners working places and additionally creates working place for cleaning supervisors and additional value for other cleaning market players (for instance, cleaning tools providers).

Education services and conferences market. According to Rūta Jasiulionienė, around 20 conferences with 20-200 participants per year held by SEB Global Services in Vilnius. Conference venue are leased from Technopolis and Technopolis is also offering catering services. If we take the cheapest conferences catering package offered by Technopolis (1.98 EUR per person for coffee break or 8.30 EUR per person for half-day event) and would evaluate that there is also charge for conference venue, 20 conferences with 110 participants (average taken from 20 to 200 participants) in total would at least generate over 4,000-18,000 EUR annual (or over 333.33-1,500 EUR monthly) revenue. Conference venue would generate additional revenue for Technopolis. More expensive conference catering packages possibly chosen by SEB Global Services Vilnius would result higher revenue for Technopolis.

Due to lack of statistical data, other education services (Swedish language courses, different trainings, personnel development events etc.) are not included into calculations, but these expenditures would definitely show significant contribution to education services market growth.

Transportation (both air and land) services market. In normal conditions SEB Global Services Vilnius spent approximately 450 EUR per month on taxi services (guests from Sweden and other countries are also using taxi services, but there is no information about the numbers. However, this also affects Lithuanian transportation services market).

It is only measurable part of the transportation services used by SEB Global Services Vilnius. Due to lack of statistical data other transportation services such as flights, public transport services are not included into calculation, but would significantly raise the transportation expenditure of SEB Global Services Vilnius.

Tourism market. At least 1 excursion in Vilnius per month booked by SEB Global Services Vilnius. If we count the same 6 participants, who usually have dinner booked by SEB Global Services Vilnius, and count the average excursion price per

person (regular price per person is 11 EUR according to Vilnius City Tour operator), SEB Global Services approximately spends 66 EUR per month on excursions in Vilnius. Due to lack of statistical data, accommodation expenditures and other tourism expenditures of the guests of SEB Global Services Vilnius are not included into the tourism expenditure. Due to the fact that the number of guests from Sweden and other countries are visiting SEB Global Services Vilnius on a daily basis and they are also spending their personal income on Lithuanian tourism market, these expenditures would significantly raise the calculated tourism expenditures of SEB Global Services Vilnius.

Postal services. SEB Global Services Vilnius is mainly using digital post channels. However, some paper correspondence creates additional value for postal services providers. Due to lack of statistical data for this kind of services, there is no possibility to evaluate how SEB Global Services Vilnius contributes to postal services providers gain/value. However, some insignificant gain/value is being created for sure.

Laundry services. Delta building in Technopolis has dry-cleaning boxes, which are used by employees of SEB Global Services Vilnius. There are approximately 25-30 orders per month placed by SEB Global Services employees. Due to the fact that cleaning prices depends on what is being cleaned, there is no possibility to know how exactly SEB Global Services Vilnius contributes to this laundry services business. However, the existence of SEB Global Services Vilnius to some extend enhanced the growth of this business.

Medical care services. Sensitive information about private insurance holders (SEB Global Services Vilnius employees). However, this is one of the benefits for employees, who can use the insurance for medical care services. Therefore, more private medical service providers are serving SEB Global Services Vilnius employees and have economic gain from that.

Sports/wellness/health Centers services. Sensitive information about private insurance holders (SEB Global Services Vilnius employees). However, this is one of the benefits for employees, who can use the insurance for sports/wellness/health Centers services. Therefore, these services providers are serving SEB Global Services Vilnius employees needs and have economic gain from that.

Technical support services (plumbers, electricians, security and other support staff). There are 4 full-time technicians, 8 security guards and 3 building maintenance managers employed to fulfill SEB Global Services Vilnius needs. Therefore, SEB

Global Services Vilnius creates 15 technical support working places.

Archiving services. Due to digital documents in SEB Global Services, there is no need for physical vaults and digital archiving solutions are being used. However, due to lack of information and its sensitiveness, there is no possibility to evaluate how SEB Global Services Vilnius contributes to the gain/value for digital archiving services providers.

Gas, water supply services. Due to lack of information and its sensitiveness, there is no possibility to evaluate how SEB Global Services Vilnius contributes to the gain/value for gas, water services providers. However, SEB Global Services Vilnius contributed to both consumption and saving of electricity and other „green" statistics initiatives organized by Technopolis (see Appendix 21). This shows how SEB Global Services Vilnius together with Technopolis, who leases the building, contributes to improvement of life quality indicators also escalated in this dissertation.

Other secondary services. Author evaluated known by author/accessible quantitative expression of value/gain created in businesses affected by SEB Global Services Vilnius. However, there can be other secondary services, which are affected by SEB Global Services Vilnius, but not evaluated by author due to lack of information or sensitiveness of the information. Therefore, the multiplier macroeconomic indicators value/gain can be even higher than expressed above.

Taking into account all the information about contribution of SEB Global Services Vilnius to cross-sectorial growth, the following value/gain (see also Appendix 20) is being created due to existence of 1,200 working places in SEB Global Services Vilnius: expansion of SEB Global Services Vilnius affected the emergence of new Technopolis buildings with such services for tenant disposal as conference venue, reception, security service, cleaning, gym, food market, cafe, parking spaces etc.; approximately 41,200-109,200 EUR monthly revenue for Technopolis restaurants, cafes, other restaurants and other smaller catering services providers such as food trucks, contribution to working places created in mentioned catering services providers businesses, contribution to other catering services growth due to other company's events such as annual sports event, team buildings; SEB Global Services Vilnius creates 21 cleaners working places and additionally creates working place for cleaning supervisors and additional value for other cleaning market players (for instance, cleaning tools providers); approximately at least 333.33-1,500 EUR per month contribution to conference market and contribution to other education services such as Swedish language courses, differ-

ent trainings, personnel development events etc.; approximately 450 EUR per month contribution to taxi services providers; approximately 66 EUR per month contribution on excursions and contribution to accommodation expenditures and other personal tourism expenditures of the guests of SEB Global Services Vilnius; supposedly insignificant gain/value for postal services providers; supposedly insignificant gain/value for laundry services business (dry-cleaning boxes in Technopolis building); supposedly significant value/gain for private medical services providers; supposedly significant value/gain for private sports/wellness/health services providers; SEB Global Services Vilnius creates 15 technical support working places - if we assume that 15 technical support employee generate at least 15 minimum national monthly salaries (607 EUR gross in 2020 in Lithuania, Lithuanian Ministry of Social Security and Labour (2021)), SEB Global Services Vilnius generates at least 9,105.00 EUR salaries for them; supposedly insignificant gain/value for archiving services providers; supposedly significant gain/value for gas and water supply services providers and contribution to life quality indicators due to green statistics mentioned in Appendix 21; contribution to other secondary services, which are affected by SEB Global Services Vilnius, but not evaluated by author due to lack of information or sensitiveness of it.

All in all, according to available information revealed to the author, SEB Global Services Vilnius counting 1,200 employees approximately generates the following value/gain for other businesses:

- from 42,049.33 EUR to 111,216.00 EUR revenue per month (only part of available data for catering market, conferences market, transportation services market, tourism market);

- at least 36 working places (only available data for cleaning and technical support staff);

- supposedly insignificant value/gain for postal services providers, laundry services providers and archiving services providers;

- supposedly significant value/gain for private medical services providers, private sports/wellness/health services providers, gas and water supply services providers;

- supposedly insignificant or significant value/gain for other secondary services providers, which are affected by SEB Global Services Vilnius, but not evaluated by author due to lack of information or sensitiveness of it.

Therefore, according to available statistical data revealed to the author, 1 employee in SEB Global Services Vilnius approximately generates 2,321.71 EUR revenue

to secondary services providers on a monthly basis and contributes to 0.03 working places in secondary services providers businesses. Taking into account that not all the statistical data was disclosed to the author and evaluated in this dissertation, the contribution of 1 SEB Global Services Vilnius employee to secondary services providers businesses can be much higher. Since number of employees in SEB Global Services Vilnius is constantly growing, there is potential to even higher contribution to cross-sectorial growth.

Induced economic effects:

- *Spending and consumption indicators:* According to research results provided in Chapter *3.1.2. Global Business Services Centers Impact on Spending and Consumption Indicators Testing Stage*, author estimated that projected additional annual gross disposable income created due to higher than country's average salary in Lithuanian GBSCs in 2020 (one employee per year) is 14,344.65 EUR. Therefore, 1,200 employees in SEB Global Services would approximately generate additional 17,213,5800.00 EUR disposable income per year, which can be spent/consumed on food, clothing, shelter and other consumer goods and services, or saved and impact household saving rate, which increases country's capacity to cope with a cyclical downturn (short term) and economy's capacity to finance itself (long term).

Dynamic economic effects:

- *Migration indicators:* SEB Global Services Vilnius affects broader shifts over time in migration indicators. According to interviewed Rūta Jasiulionienė, the head of SEB Global Services Vilnius, current situation shows that up to 5 % of employees re-emigrated to Lithuania as they were employed here. The long term solid and sustainable employment growth in SEB Global Services Vilnius and attractive conditions to work here most likely have to stimulate the further positive re-emigration rate growth in the long term prospective.

- *Life quality indicators*: consequences of broader shift over time can be seen in result of improvement of life quality indicators of SEB Global Services employees and their family members. Benefits indicated in this dissertation above in the long term affects income and wealth of SEB Global services employees and persons related to them.

- *Regional development indicators*: successfully operating GBSCs such as SEB Global Services in Vilnius increase the attractiveness of other Lithuanian cities as GBSCs destination as well as CEE region as GBSCs destination. Consequences of bro-

ader shift over time can be seen in result of transferring more and more sophisticated business processes to Vilnius or other Lithuanian cities/CEE region – these locations become of strategic importance in a long term prospective. What is more, location quotient shows, that only Vilnius from analyzed Vilnius (1.67), Kaunas (0.47) and Klaipeda (0.03) is above 1.25 and has GBSCs specialization. Therefore, SEB Global Services Vilnius contributes to the increase of Vilnius as GBSCs location specialization (more information about location specialization was presented in *Chapter 3.1.6. Global Business Services Centers Impact on Regional Development*, Poland).

The main outcome of the research made on SEB Global Services Vilnius is that this organization shows the good example of strong multiplier effect of GBSCs impact on macroeconomic indicators in Lithuania, especially indirect effect mainly due to cross-sectorial growth enhanced by SEB Global Services Vilnius. This research shows how wide economic effect is due to existence of such organization type and rebut the common view that GBSCs have standard effect on economic as each average foreign direct investment organization.

Author of this dissertation by example of SEB Global Services Vilnius proves that the economic impact of GBSCs can be much higher than estimated and include not only standard economic indicators such as microeconomic indicators or such macroeconomic indicator as GDP growth or other, but also more intangible macroeconomic indicators including labor market indicators, spending and consumption indicators, migration indicators, life quality indicators, cross-sectorial growth indicators and regional development indicators (see Tables 26-27 below).

Author of this dissertation divided generalization of SEB Global Services Vilnius multiplier effect evaluation into 2 stages: numerical (Table 29) and non-numerical (Table 30) expression of multiplier effect stimulated by SEB Global Services Vilnius.

Numerical expression of multiplier effect stimulated by SEB Global Services Vilnius combines percentage/other expression, employment expression and EUR expression.

Percentage/other expression presents other than employment and EUR expression, which shows more general impacts on macroeconomic indicators, but does not show their exact numerical expression. Such percentages/other expressions are showing that SEB Global Services Vilnius employs almost 0.1 % of total 15-64 years employed in Lithuania, that SEB GBSCs employees annual additional gross disposable income due to higher than average national salary would cover 4.87 % total annual

consumption expenditure of household in Lithuania, that there are 5 % of reemigrants among employed in SEB Global Services Vilnius, that SEB Global Services Vilnius approximately occupies 14,440.00 sq. m office space and each sq. m maintenance is useful for Lithuanian economy.

Employment expression shows how many additional working places are being created due to existence of SEB Global Services Vilnius. It is important to mention that actual additional working places number is definitely higher than calculated by author since only data, which was accessible for author of this dissertation, was taken into account and there were no available information about the additional working places created in majority of analyzed services providers, who serve SEB Global Services Vilnius needs. Also, it is worth to mention that 60 reemigrated employed in SEB Global Services Vilnius were not added into total employment expression, but it shows that we would probably have 60 residents less if SEB Global Services Vilnius would not exist.

Table 29. *Numerical Expression of Multiplier Effect Stimulated by SEB Global Services Vilnius, 2020 (Labor Market, Spending/Consumption, Migration, Cross Sectorial Growth Indicators)*

Macroeconomic outcome	Evaluation method	Percentage/ other expression	Employment expression	EUR expression
Labor market indicators	Headcount share in SEB GBSC %; employment in SEB GBSC; monthly personal income tax and social contributions paid due to employment in SEB GBSC	$\dfrac{\textit{Employment in SEB GBSC}}{\textit{Total employment 15 to 64 years in Lithuania}}$ **0.09 %**	*Employment in SEB GBSC* **1200**	*Average monthly salary in Lithuanian - tax exempt) · employment in SEB GBSC · personal income tax rate + average monthly salary in Lithuanian GBSC · employment in SEB GSC · social contribution rate* **1,244,810.42 €**

Macroeconomic outcome	Evaluation method	Percentage/ other expression	Employment expression	EUR expression
Spending/ consumption indicators	SEB GBSC employees monthly additional gross disposable income due to higher than average national salary as share of total consumption expenditure of household in Lithuania; SEB GBSC employees monthly additional gross disposable income due to higher than average national salary	*Employment in SEB GBSC X projected average monthly salary in SEB GBSC - average national monthly salary* / *Total annual consumption expenditureof household in Lithuania* **4.87 %**	n/a	*Employment in SEB GBSC · (projected average monthly salary in SEB GBSC - average national monthly salary)* **1,434,468.00 €**
Migration indicators	Share of employed reemigrants in SEB GBSC; reemigrants employment number; monthly personal income tax, social contributions and additional gross disposable income gained due to higher than average salary in GBSCs paid to reemigrated	*Employment in SEB GBSC* / *Employed reemigrants in SEB GBSC* **5.00%**	*Employed reemi-grants in SEB GBSC* **60**	*Personal income tax+social contributions+ monthly additional gross disposable income of reemigrated employed in SEB GBSC* **133,963.92 €**

Macroeconomic outcome	Evaluation method	Percentage/ other expression	Employment expression	EUR expression
Cross sectorial growht indicators	Technopolis restaurants monthly revenue	n/a	n/a	*Average number of daily lunches · average amount spent on lunch · 20 business days per* **60,000.00 €**
	Technopolis cafes monthly revenue	n/a	n/a	*Average daily number of cafe customers · average amount spent on cafe · 20 business days per month* **8,000.00 €**
	Other small catering business food trucks (burgers, salads, kebab etc.) monthly revenue	n/a	n/a	*SEB GBSC employees number · average monthly amount spent on one lunch* **6,000.00 €**
	Monthly amount spent on business dinners	n/a	n/a	*Monthly amount of SEB GBSC business dinners · business dinner average price · number of business dinner participants* **1,200.00 €**

Macroeconomic outcome	Evaluation method	Percentage/ other expression	Employment expression	EUR expression
	Monthly cleaning market revenue	n/a	**21**	*Average hourly cleaning rate · daily cleaning hours · number of cleaning staff · 20 business days* **21,033.60 €**
	Monthly conference market revenue	n/a	n/a	$\dfrac{\text{\textit{Minimum surveyed conference price}} + \text{\textit{maximum surveyed conference price})}}{2}$ **916.67 €**
	Monthly education services revenue	n/a	n/a	n/a
	Monthly taxi services revenue	n/a	n/a	**450.00 €**
	Monthly other land and air transport revenue	n/a	n/a	n/a

Macroeconomic outcome	Evaluation method	Percentage/ other expression	Employment expression	EUR expression
	Monthly excursions services revenue	n/a	n/a	**66.00 €**
	Monthly other tourism services revenue	n/a	n/a	n/a
	Monthly postal services revenue	n/a	n/a	n/a
	Monthly laundry services revenue	n/a	n/a	n/a
	Monthly medical services revenue	n/a	n/a	n/a
	Monthly sport/wellness/health centers services revenue	n/a	n/a	n/a

Macroeconomic outcome	Evaluation method	Percentage/ other expression	Employment expression	EUR expression
Multiplier effect	Total known secondary employment outcome of 1.200 employed in SEB GBSC	36	Total known monthly EUR outcome of 1.200 employed in SEB GBSC	2,786,049.68 €
	Total known secondary employments of 1 employed in SEB GBSC	0.03	Total known monthly EUR outcome of 1 employed in SEB GBSC	2,321.71 €

Source: *Interview with head of SEB Global Services Vilnius and Technopolis Vilnius (2020), Eurostat (2020), Cushman&Wakefield (2020), Deutsche Bank (2019), Lithuanian National Statistics Office (2021), calculations used in this dissertation*

EUR expression shows the monthly numerical EUR gain for the Lithuanian economy through paid personal income tax, social contributions, received revenues by secondary services providers. Employment-related taxes paid by 60 reemigrated employed in SEB Global Services Vilnius were also not added into total EUR expression, but it shows that Lithuania would probably have 133,963.92 EUR less paid taxes and additional gross disposable income on a monthly basis if SEB Global Services Vilnius would not employ them.

Non-numerical expression of multiplier effect stimulated by SEB Global Services Vilnius (see Table 30) shows that it is important not to omit intangible or difficult to evaluate macroeconomic aspects in multiplier effect evaluation.

Despite the fact that there is no available quantitative data of additional SEB Global Services Vilnius employees benefits, they are inevitably together with numerical benefits such as higher than average salary or other strongly contribute to improvement

of life quality indicators of employees of SEB Global Services Vilnius and their family members.

Also, location quotient, which is indicator derived from employment data within given location and all locations under analysis (in this case Vilnius, Kaunas and Klaipeda) shows that SEB Global Services Vilnius is established in location characterized by high GBSCs specialization and contributes to further Vilnius specialization in this sector. This is important aspect due to the fact that when more GBSCs choose Vilnius as location, the competition within GBSCs sector in Vilnius increases, it helps to attract other GBSCs and stimulate such changes as changes in salaries, working conditions, offered benefits to employees, employment restructuring and other. Lithuanian location quotient shows the strongest GBSCs concentration in capital. However, previous analysis show that, for instance, in Poland the concentration is higher in some non-capital cities. Therefore, this indicator can show the potential of other regions to attract more GBSCs, but the evaluation of this indicator should also combine different non-numerical axpressions.

Moreover, despite the fact that GDP related indicators are usually numerical, they were assigned to non-numerical due to the reason that according to analysis performed in this dissertation and experts survey, previously discussed employment components, cross-sectorial growth indicators are better reflection of GBSCs impact on macroeconomic indicators in selected CEE countries. Therefore, analyzed employment indicators, spending/consumption indicators and cross-sectorial growth stimulated by SEB Global Services Vilnius are reflecting the macroeconomic outputs in a better way.

Table 30. *Non-Numerical Expression of Multiplier Effect Stimulated by SEB Global Services Vilnius, 2020 (Life Quality, Regional Development Growth, GDP Related Indicators)*

Macroeconomic outcome	Evaluation method	Percentage/ other expression	Employment expression	EUR expression
Life quality indicators	No available quantitative data, only information about additional benefits such as comprehensive health insurance, additional time-off depending on length of tenure, paid holidays on family occasions, paid time-off for volunteering, recreational spaces, coffee & snacks, fitness classes, office sports teams, yearly profit-sharing programme, contributions to employee pension funds, personal finance guidance, trainings locally and abroad, paid leave for work-related studies, training programmes and employee LABs, other.			
Cross sectorial growth indicators	Monthly technical support services (plumbers, electricians, security etc.) number and salaries	n/a	15	9,105.00 €
	Monthly archiving services revenue	n/a	n/a	n/a
	Monthly gas, water suply services revenue	n/a	n/a	n/a
	Monthly other services providers revenue	n/a	n/a	n/a

Macroeconomic outcome	Evaluation method	Percentage/ other expression	Employment expression	EUR expression
Regional development indicators	Location quotient in Vilnius;	*Headcount at GBSCs in given location Employment in given location Total headcount at GBSCs in all locations under analysis Employment at all locations under analysis* **1.674808243**	**n/a**	**n/a**
	Location quotient in Kaunas;	**0.465979751**		
	Location quotient in Klaipeda.	**0.032353543**		
GDP related indicators	Discussed employment components, cross-sectorial growth indicators are better reflection of GBSCs impact on macroeconomic indicators in selected CEE countries			

Source: *Business Services Sector in the Czech Republic by ABSL (2020), Lithuania's Business Services Report (2020), Business Services Centers in Hungary (2020), Business Services Sector in Poland by ABSL (2020), Business Services Sector in Romania by ABSL (2020), Shared Service & Business Process Outsourcing Centers in Slovakia (2020), experts interview.*

All in all, it can be said that according to available data disclosed by the head of SEB Global Services Vilnius and head of Technopolis Vilnius, 1,200 employed in SEB Global Services Vilnius generate at least 36 working places in secondary services sec-

tors, contribute to Lithuanian economy by at least 2,786,049.68 EUR monthly amount through jobs-related taxes and secondary services providers revenue. Additional gross disposable monthly income due to higher than average salary of 1,200 employed in SEB Global Services Vilnius would cover 4.87 % of total annual Lithuanian household expenditures. SEB Global Services Vilnius contributes to brain drain prevention and higher remigration since 5 % of employed here are reemigrants (Lithuanians, who returned from emigration). 1,200 employed here are also contributing to commercial real estate and other related sectors growth by occupying around 14,400 sq. m office space. Moreover, SEB Global Services Vilnius contributes to economy and life quality indicators through other intangible or difficult to evaluate gains such as additional benefits, contribute to GBSCs specialization in Vilnius. Author of this dissertation would like to emphasize that the actual multiplier effect contribution is even higher since there are secondary services providers, which were identified as stimulated by SEB Global Services Vilnius, but there is no available numerical data about their employment and revenue stimulated by SEB Global Services Vilnius.

Taking into account that only one of GBSCs from Lithuanian market, for which author of dissertation had possibility to collect the data, was analyzed, but there is 81 GBSCs employing 19,300 in Lithuania according to Invest Lithuania (data from 2019), author assumes that the similar effect can be seen in other GBSCs in Lithuania and the multiplier effect revealed in this Chapter can be applied to other GBSCs in Lithuania. If we would apply the same employment and EUR expression (0.03 employment and 2,321.71 EUR monthly amount generated by 1 GBSCs employee) as well as non-numerical expressions for other GBSCs in Lithuania (see Table 29 and Table 30), then we could generalize that 19,300 employed in Lithuania could generate at least 579 working places in secondary services sectors, contribute to Lithuanian economy by at least 44,808,965.75 EUR monthly amount through jobs-related taxes and secondary services providers revenue. In such case other gains such as additional gross disposable income due to higher than average monthly salaries, higher remigration rates, additional benefits contributing to life quality indicators and other would be respectively higher.

Unfortunately, due to lack of reliable statistical and other accessible data for other GBSCs in all selected CEE countries, due to difference in size of these GBSCs, possible geographical differences, possible differences in multiplier effect on macroeconomic indicators for each GBSCs and other specific differences, author of this dissertation cannot make generalizations regarding other GBSCs in all selected CEE countries.

3.1.10. Central and Eastern Europe Countries Investment Promotion Agencies Experts Survey Analysis

Lack of available and comprehensive statistics on the GBSCs topic and the novelty of GBSCs phenomenon was the main purpose to choose the CEE countries investment promotion agencies experts survey. The main experts selection criteria was that they would have expertise both in GBSCs field and analysis of macroeconomic indicators. Therefore, author of this dissertation contacted the experts from Czech Republic (Czech Invest), Hungary (Hungarian Investment Promotion Agency HIPA), Lithuania (Invest Lithuania), Poland (Polish Investment and Trade Agency PAIH), Romania (Invest Romania) and Slovakia (Slovak Investment and Trade Development Agency SARIO advised to contact AmCham Slovakia – Chambers of Commerce or business communities and Business Service Center Forum) and asked to fill in the questionnaire presented in Appendix 18. However, the responses from the experts from Lithuania (Laisvis Makulis, Head of Business Services & ICT at Invest Lithuania at the moment of response, currently Vice President at Invest Lithuania), Poland (name and Agency name will not be disclosed according to the request from the expert) and Slovakia (Peter Rusiňák, American Chamber of Commerce in the Slovak Republic, policy officer and Business Service Center Forum (BSCF) coordinator) received. Experts from Hungary refused to fill in the questionnaire and no response received from the Czech Republic and Romania. During e-mail conversations with number of experts, author noticed that some bureaucratic procedures, fear to disclose sensitive information about the country or comparatively new GBSCs analysis experience in selected CEE countries were main reasons why there is such response rate.

The survey's aims were the following:

1. Question No. 1 – to find additional statistical data sources or verify if the sources used in the dissertation are relevant.

2. Question No. 2 – to reveal the experts observations on GBSCs market situation, it's development level, main tendencies in selected CEE countries and if there are GBSCs oriented organizations/business forums/initiatives/educational institutions, which promote GBSCs emergence, development and spread the knowledge about GBSCs.

3. Question No. 3 – to introduce the experts with the author's distinguished 7 macroeconomic indicators groups, which GBSCs in selected CEE countries can eco-

nomically influence and to ask the experts to rank them according to importance for the further analysis and to ascertain that all the distinguished macroeconomic groups are reasonable in GBSCs context.

4. Question No. 4 – country specific questions to receive additional information on the macroeconomic indicators groups, which raised the questions to the author of the dissertation or for which there is lack of information in other information sources used in the dissertation.

5. Question No. 5 – to receive the experts opinion on the relevance of the research made by the author.

6. Question No. 6 – to ask the experts if they are interested in receiving of final dissertation copy when it is finished in order to spread the knowledge about the field of study of the dissertation.

7. Question No. 7 – to ask the experts about additional thoughts, recommendations or useful information/links, which were not considered by the author of this dissertation.

8. Question No. 8 – to know which information about the expert can be disclosed in the dissertation due to the experts right for anonymity if preferred.

The main outcomes from the survey are presented below.

Expert from Lithuania makes strong emphasis on recent changes in labor market influenced by GBSCs when describing the current situation in Lithuanian GBSCs market: the main tendency in the recent years is GBSCs taking on more responsibilities and providing broader scope of services to internal business partners. Technology is forcing GBSCs to evolve and provide more value-add activities and move from transaction processing to insight delivery across the functions. This automatically creates a need for a more talented and skilled workforce. Problem-solving, programming/coding and "soft" social skills are becoming a premium in the industry. It is increasingly harder to find the right talent. Add continuous rising salaries to the equation with low unemployment rates – this makes the situation even more difficult. Many organizations, even those with strong brand names now have to get more creative in figuring out ways to attract talent. EVP (employee value proposition) has become more than just salary and a job at a global brand. Wellness benefits, work-life balance, career-mapping, are all among very important fringe benefits necessary to lure the top talent. Another strong tendency according to the expert from Lithuania is the shifting focus form Nordic companies, which dominated Lithuania's industry for a decade, to United States

companies. As typical GBSCs hubs in CEE get more and more saturated, international companies look for new locations beyond the mature hotspots.

Expert from Slovakia emphasized that GBSCs market started to flourish in Slovakia after year 2000, when first big investors such as IBM, AT&T or Dell started to explore the business opportunities, mostly based on a favorable ration between the labor costs and skills availability. Currently, the majority of GBSCs is still clustered in Bratislava and Košice. However, investors are gradually discovering advantages of regional hubs in Nitra, Žilina, Prešov, Komárno, Banská Bystrica, Nové Zámky, Považská Bystrica and other cities. In the context of CEE Slovakia is noteworthy for having a significant number of X-Large GBSCs (employing more than a 1000 people). Together with the medium-sized they present the majority of all GBSCs in Slovakia.

There are different GBSCs oriented organizations/business forums/initiatives in selected CEE countries, which contribute to spread of information about GBSCs, their promotion and development. However, not all the selected CEE countries are on the same level of using different ways to promote and develop GBSCs sector. For instance, Invest Lithuania is the main body for representing GBSCs among many other their responsibilities. According to the expert from Lithuania, government agency Invest Lithuania collects GBSCs statistics and it is published in annual "Lithuania's business services report". The data is collected annually via survey that GBSCs fill out – it is accessible to individuals/organizations that need access to such data. Author of this dissertation noticed and experts survey confirmed that Association of Business Service Leaders ABSL is the main organization representing business services in the majority of selected CEE countries (except Lithuania), which is preparing annual reports important for GBSCs market analysis. Selected CEE countries established the number of other GBSCs oriented organizations such as Pro Gressio Group (mentioned by expert from Poland), which is supporting entrepreneurship growth in Poland with special focus on modern business services sector including such areas like BPO, GBSCs, R&D, Call Contact Center, etc., ASPIRE (mentioned by expert from Poland), which is among the leading business associations in CEE and the driving force behind Kraków's emergence as a world class technology and business services hub, Business Service Center Forum (mentioned by expert from Slovakia), which is an umbrella sectoral association, representing over 90 % of all FTEs in the sector in Slovakia and which was established with the mission to raise awareness of the GBSCs sector's role in the Slovak economy and help it grow further in Slovakia. These mentioned organizations/business forums/

initiatives are the important and in some cases the main or the only one source of statistical information about GBSCs in selected CEE countries. For instance, the expert from Slovakia claims that SARIO is the official governmental agency in Slovakia, covering the sector of GBSCs – however given their outreach as far as statistics are concerned, their capacity to collect and review sectoral data is highly limited (apart from basic statistical data such as number of GBSCs and FTEs in the sector). BSCF is the umbrella sectoral association representing over 90 % of all FTEs in the sector in Slovakia and their own statistical database, reviewed annually, serves as the primary source of all data in the sector, even though the expert thinks the data could be even more structured and detailed. BSCF's collected, reviewed and analyzed data is also being presented during GBSCs annual conference.

Labor market indicators, spending and consumption indicators, life quality indicators and cross-sectorial growth indicators were ranked as the most important (ranked as 3 or 4 from 4), which means that according to the experts, GBSCs has the highest impact on these four macroeconomic indicators groups. The expert from Slovakia emphasized higher than national average salary in GBSCs and mentioned that annually Slovakia-based GBSCs occupy first three places in the nation-wide competition „Best Employer" organized by the company Profesia.sk. The expert from Slovakia also emphasized the importance of life quality indicators such as respectable compensation for work, family and health work and life balance, attractive motivational packages, remuneration and benefits offered by GBSCs. According to the expert from Slovakia, GBSCs not only significantly contributed to the boost of local economy, but also inhabitants well-being.

Despite the fact that the expert from Poland emphasized GBSCs working places impact on preventing of brain drain and GBSCs impact on lower emigration level, according to the expert from Lithuania, higher than average salaries and the economic impact of GBSCs in the country help bring some people back to Lithuania, but those people may seek employment in other sectors such as real estate, transportation, etc. Jobs offered in GBSCs contribute to the re-emigration rates, yet it is difficult to say how much of a factor it is without the data. It would be helpful to know what percentage of total employees working in GBSCs have returned from abroad in the last 12 or 24 months, for example. Since there is limited possibility to collect such data (only SEB Global Services Vilnius example is presented in the dissertation, according to which around 5 % of all employees re-emigrated due to possibility to work here, see Chapter

3.1.9. SEB Global Services Business Case as Example of Multiplier Effect of Global Business Services Centers Impact on Macroeconomic Indicators in Lithuania), there is limited possibility to evaluate accurately GBSCs impact on migration indicators. Expert from Slovakia also questioned the importance of brain drain (migration indicators) and claimed the impact on brain-drain prevention has not been significant. However, the expert from Slovakia mentioned that since 2019 BSCF has been closely cooperating with the Government representatives on „Work in Slovakia – Good Idea" program to attract skilled Slovaks working/studying across EU to return to the GBSCs industry in Slovakia.

Regional development macroeconomic indicators were ranked as 2 from 4 according to the importance (influence made by GBSCs to them) by the experts from Lithuania and Poland, which also means that this group of macroeconomic indicators is hardly paralleled with GBSCs according to the experts. However, the expert from Slovakia ranked regional developments macroeconomic indicators as 3 from 4 and emphasized that non-capital city such as Košice is a great example of regional development influenced by GBSCs. The expert from Slovakia also claimed that other smaller regional capitals such Nitra, Trnava or Banská Bystrica are the ones slowly but surely profiting from GBSCs market growing. The important insight here is that from one side, emergence and development of GBSCs have positive influence on regional development and provides opportunities to cities other than capital, but from another side, as the expert from Poland commented, in some cases the disproportion between bigger and smaller cities is even growing due to GBSCs.

GDP related macroeconomic indicators were ranked as 2 or 3 from 4 according to the importance (influence made by GBSCs to them) by the expert from Lithuania and Slovakia and were not ranked by the expert from Poland with the explanation that the expert has no such data. The expert from Slovakia has also mentioned that they do not have clear data on yearly GDP growth influenced by GBSCs in Slovakia. They have tracked the annual contribution to the Slovak economy measured on other indicators such as employee income tax, social insurance contribution or salaries expenditures, but not GDP. Therefore, this group of macroeconomic indicators is hardly paralleled with GBSCs according to the experts and there is a limitation in evaluating the influence of GBSCs on GDP related macroeconomic indicators when no statistical data or limited statistical data on them are being collected.

The relevance of the research is proved by the comments from the experts, who

claimed that it is useful due to novelty of the research (expert from Poland is not aware of any studies covering the dissertation topic) and due to the reason that the more studies and data we have about GBSCs impact on our economy, the better we can work and educate the government and general population on how GBSCs contribute to improving people's lives (expert from Lithuania). The expert from Slovakia emphasized the relevance of the research because of the lack of official country level data and analysis of the macroeconomic impact of GBSCs industry.

3.1.11. Evaluation of Global Business Services Centers Impact on Macroeconomic Indicators Based on Panel Data Analysis

This part of the dissertation presents the evaluation of GBSCs impact on macroeconomic indicators in CEE countries based on the last part of presented by the author model (Figure 14), fourth research logical part (Figure 16) and panel data analysis research methodology presented in Chapter

3.2.1.1. Panel Data Analysis Research Methodology.

Based on the results of most of the authors analysed in this dissertation (Kuzior, Sobotka (2019), Ruzsa (2018), Milewska (2018), Ślusarczyk (2017), Skowroński (2017), Biernat-Stawecka (2016), Wirtz et al (2015), Marciniak (2014), Micek et al (2010), Micek et al (2011) and others) it could be said that GBSCs can have positive impact on CEE countries macroeconomic indicators, but due to limited empirical research, scarcity of statistical data and other research limitation, there is no clear evidence of positive impact. Author of this dissertation performed the research (see previous Chapters in third part of the dissertation) and the results of them also show the possible positive GBSCs impact on macroeconomic indicators in CEE countries, especially labor market, spending and consumption, life quality and cross sectorial growth indicators. However, according to the author, despite the scarce GBSCs-related statistical data and other limitations mentioned in this work, panel data analysis could contribute to the research and will reveal econometric evaluation results of at least part of the macroeconomic indicators analyzed in the dissertation. The aim of panel data analysis is to identify and assess the correlation and the direction of the impact of GBSCs on macroeconomic indicators in CEE countries. In previous dissertation research steps, the author noticed positive tendencies of GBSCs macroeconomic outcomes as well as differences in data, which according to the author can be due to inhomogenous statistical data sources for

all CEE countries, data gathering accuracy or mainly due to different GBSCs market development level despite the similar macroeconomic backgrounds of the selected and analyzed CEE countries. Therefore, the following **hypothesis** is raised:

H_1: GBSCs have a positive impact on the macroeconomic indicators in analyzed CEE countries.

This hypothesis will be accepted if the test result coefficients correspond to at least 0.1 statistical significance level and at least half of the results are consistent with the hypothesis raised.

Characteristics of econometric model variables. Author selects the macroeconomic indicators, which can be included into the panel data analysis. Not all the macroeconomic indicators groups (LMI, SCI, MI, LQI, CSGI, RDI, GDPI) and macroeconomic indicators (Table 4) analyzed in the dissertation could be included into the research due to number of reasons: more qualitative nature of the data (for instance LQI), scarcity of statistical data or limited data accessibility for single researcher (for instance CSGI, RDI). Therefore, author selects the following variables according to currently available statistical data: GBSCs (two *independent variables*: GBSC (GBSCs number, $X1_{it}$) and GBSCe (number of employees in GBSCs, X_{2it}) impact on the following macroeconomic indicators was evaluated (*dependent variables*): LMI – unemployment rate, percentage of total population (Y_{1it}), LMIY – youth unemployment rate, 15 to 24 years unemployed as percentage of total population (Y_{2it}), REC – total receipts from taxes and social contributions, social security funds, million EUR (Y_{3it}), ANEC – annual net earnings, single person without children earning 100% of the average earning (Y_{4it}); SCI – final consumption expenditure of households, current prices, million EUR (Y_{5it}); MI – reemigrated nationals (Y_{6it}); GDPI – GDP at market prices, current prices, EUR per capita (Y_{7it}). According to the panel data specification, cross-sectional/spatial data i and time-series data t are combined (data vectors X_1, X_2, Y_1, …, Y_7 contain observations over cross–sections i=1, 2, …,N, and time t=1, 2, …, T).

Research sample and period is defined, **panel data set** and the procedure to select **the most suitable regression model** is determined. Six CEE countries are included in the research as in previous research in this dissertation (n=6). The data (see Appendix 22) refer to the period of thirteen years from 2007 to 2019 (t=4-13). This is an unbalanced panel data, as a number of countries did not provide certain data, do not have such data or are missing for a total period.

Steps to determine the preferred type of the regression specification for each of

the dependent variables in Gretl are as follows:

1) Using a pooled ordinary least squares (OLS) regression specification, three tests are checked: test for the joint significance of differing group means, Breusch-Pagan test and Hausman test (see section Chapter *2.2.1.1. Panel Data Analysis Research Methodology* for more details);

2) Then the test for differing group intercepts is checked in a panel fixed-effects framework Also, Pesaran CD test is used and, after adding time-specific effect, - Wald joint test on time dummies;

3) Lastly, in panel random effects estimation, Hausman test is checked again.

4) Depending on the test results, the most suitable form for estimation is chosen and the equation is estimated taking into account the significance of regressors, goodness of fit, absence of autocorrelation in residuals and other characteristics of the estimators.

Given the small number of countries (6 countries: Czech Republic, Hungary, Poland, Lithuania, Romania, Slovakia) and the short period (2007–2019), and that GB-SCs-related data series cover only part of this period, the data set is rather small. Therefore, the number of explanatory variables and individual effects is also very limited. This can hamper the ability to apply such form of the regression which is provided for by the tests of model suitability in the above-mentioned procedure. In case the theoretically suitable model lacks desired statistical properties, the second-best alternative is used in the empirical estimation.

Limitations of the research. One of the most important limitation, which was also previously mentioned in the dissertation, is the scarcity of statistical data. Scarcity of data complicates the interpretation of the research results since the conclusions about statistical significancy can be wrongly intrepreted (for instance, there is no correlation or regression analysis shows statistical insignificance, but in fact there is an macroeconomic impact, which can be revealed only with more statistical data). Some corrections were applied into the model, some countries excluded from the model to have reliable research results on each analyzed macroeconomic indicator. Also, due to short research period macroeconomic indicators do not reflect the dynamics and cyclicality of economic development. Another limitation does not fully take into account late data and there is no study of the impact of GBSCs on macroeconomic indicators in the short and long term. Moreover, the data gathering about GBCSs and macroeconomic indicators itself depend on the policies of each country, which may vary. The

parties themselves may also omit data or incorrectly account for those data. However, given that data are collected not only from country-by-country GBSCs reports, but also from a single source (For instance, Eurostat), the comparability of the data and the reliability of the results increase.

Given the small number of countries (6 countries: Czech Republic, Hungary, Poland, Lithuania, Romania, Slovakia) and the short period (2007–2013), and that GBSC-related data series cover only part of this period, the data set is rather small. Therefore, the number of explanatory variables and individual effects that can be included in one regression is also very limited. This can hamper the ability to apply such form of the regression which is provided for by the tests of model suitability in the above-mentioned procedure. Therefore, in case the theoretically suitable model lacks desired statistical properties, the second-best alternative is also analysed.

Nevertheless, the panel estimation framework allows to get sufficiently credible results from a data set containing short time series, because it takes advantage of the variation among cross-sections.

Software for correlation and regression analysis of panel data. Econometric analysis software packages SPSS and Gretl were used for statistical and graphical research data processing. The main descriptive statistics (see Table 31), correlation analysis (see Table 32) and regression analysis data (see Tables 35-41) are provided below. In addition, unit-root testing was conducted in EViews, as EViews allows for a more comprehensive and convenient unit root testing for unbalanced panel data.

As previously mentioned in this dissertation, not all of previously analyzed macroeconomic indicators were included into the panel data analysis. Moreover, some data are missing for some countries (part of research period or even all the period). Main descriptive statistics of the analyzed GBSCs and macroeconomic indicators data as well as number of missing values in the research data set from Appendix 22 are presented in Table 31.

Table 31. *Descriptive Statistics on the GBSCs and Main Macroeconomic Indicators in CEE Countries Included Into the Panel Data Analysis (2007-2019)*

Variables	Average	Median	Min	Max	Missing values
Number of GBSCs	201	125	16	970	39
Employment in GBSCs	87,978	60,000	8,800	338,000	46

Variables	Average	Median	Min	Max	Missing values
Unemployment rate (percentage of total population)	4.94	4.40	1.30	11.10	18
Youth unemployment rate (15 to 24 years unemployed as percentage of total population)	6.23	6.10	1.70	10.40	18
Total receipts from taxes and social contributions (social security funds), million EUR	5,482	2,043	113	23,926	24
Annual net earnings (single person without children earning 100% of the average earning)	7,256	7,217	3,578	11,837	0
Final consumption expenditure of households, current prices, million EUR	90,840	70,702	17,897	303,710	0
Reemigrated nationals	9,273	5,443	1,691	23,401	43
GDP at current prices, per capita (EUR)	12,321	12,010	6,150	20,990	12

Source: *compiled by author*

According to the descriptive statistics provided in the Table 31, the missing observations for GBSCs comprise around one tenth: there were 39 missing observations (i.e. 8.9 % of all observations). For example, the average number of GBSCs is 201, and the maximum is even 970, while the number of employees in GBSCs varies from 8,800 to 338,000. This means an average of 43 to 348 workers in GBSCs and can lead to presumption that there are differences in the GBSCs market development level in the analyzed CEE countries. It is also an interesting finding that the maximum value of the unemployment rate (11.10 %) in CEE countries is higher than youth unemployment (10.40 %), which can lead to the presumption mentioned previously in this dissertation that GBSCs can have positive effect on the youth unemployment rate in the selected analyzed CEE countries. Difference in selected GDP indicator also shows the different countries development level despite the fact that these countries are positioned as quite similar in the analyzed CEE region based on GBSCs analyses.

First of all, correlation analysis was done. Independent and dependent variables

correlation matrix presented in Table 32 shows the direction and strenght of association between the variables, which first of all involves evaluation of Pearson's correlation and secondly – *p-level* Sig. (2 tailed). If *p-level* Sig. (2 tailed) <0.05, the correlation is significant, then the value of the Pearson's correlation coefficient, which is applied to the quantitative variables, continues to be determined.

Table 32. *Independent and Dependent Variables Correlation Matrix (Direction and Strenght of Association Between the Variables, P-Level and Number of Values)*

		Empl_ GBSCs (X₂)	Number of GBSCs (X₁)	Unemployment rate (Y₁)	Youth unemployment rate (Y₂)	Total receipts from taxes and social contributions (Y₃)	Annual net earnings (Y₄)	Final consumption expenditure of households (Y₅)	Reemigrated nationals (Y₆)	GDP at market prices (Y₇)
Empl_ GBSCs (X₂)	Pearson Correlation	1	.971**	-.525**	-0.149	.855**	0.190	.944**	-.518**	-0.253
	Sig. (2-tailed)		0	0.002	0.416	0	0.297	0	0.007	0.162
	N	32	30	32	32	32	32	32	26	32
Number of GBSCs (X₁)	Pearson Correlation	.971**	1	-.478**	-0.64	.892**	.398**	.960**	-.438*	-0.056
	Sig. (2-tailed)	0		0.002	0	0	0.01	0	0.015	0.736
	N	30	41	38	38	36	41	41	30	39
Unemployment rate (Y₁)	Pearson Correlation	-.525**	-.478**	1	.875**	-.393**	-.386**	-.413**	0.218	-0.239
	Sig. (2-tailed)	0.002	0.002		0	0.003	0.002	0.001	0.208	0.066
	N	32	38	60	60	54	60	60	35	60
Youth unemployment rate (Y₂)	Pearson Correlation	-0.149	-0.64	.875**	1	-0.208	-.501**	-0.12	-0.044	-.483**
	Sig. (2-tailed)	0.416	0	0		0.131	0	0.362	0.802	0
	N	32	38	60	60	54	60	60	35	60
Total receipts from taxes and social contributions (Y₃)	Pearson Correlation	.855**	.892**	-.393**	-0.208	1	.433**	.915**	-.610**	0.09
	Sig. (2-tailed)	0	0	0.003	0.131		0.001	0	0	0.518
	N	32	36	54	54	54	54	54	35	54
Annual net earnings (Y₄)	Pearson Correlation	0.19	.398**	-.386**	-.501**	.433**	1	0.21	-.443**	.923**
	Sig. (2-tailed)	0.297	0.01	0.002	0	0.001		0.067	0.008	0
	N	32	41	60	60	54	77	77	35	66

		Empl_GBSCs (X_2)	Number of GBSCs (X_1)	Unemployment rate (Y_1)	Youth unemployment rate (Y_2)	Total receipts from taxes and social contributions (Y_3)	Annual net earnings (Y_4)	Final consumption expenditure of households (Y_5)	Reemigrated nationals (Y_6)	GDP at market prices (Y_7)
Final consumption expenditure of households (Y_5)	Pearson Correlation	.944**	.960**	-.413**	-0.12	.915**	0.21	1	-.497**	-0.155
	Sig. (2-tailed)	0	0	0.001	0.362	0	0.067		0.002	0.213
	N	32	41	60	60	54	77	78	35	66
Reemigrated nationals (Y_6)	Pearson Correlation	-.518**	-.438*	0.218	-0.044	-.610**	-.443**	-.497**	1	-0.196
	Sig. (2-tailed)	0.007	0.015	0.208	0.802	0	0.008	0.002		0.258
	N	26	30	35	35	35	35	35	35	35
GDP at market prices (Y_7)	Pearson Correlation	-0.253	-0.056	-0.239	-.483**	0.09	.923**	-0.155	-0.196	1
	Sig. (2-tailed)	0.162	0.736	0.06	0	0.518	0	0.213	0.258	
	N	32	39	60	60	54	66	66	35	66

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Source: *compiled by author*

The interpretation of correlation coefficient strenght is presented in the Table 33. For the verification of the significance of the correlation coefficient

hypotheses were formulated:

H_0: the correlation coefficient is zero,

H_1: correlation coefficient not equal to zero.

Observed *p-level* = 0.000, which is less than the selected materiality level α = 0.05. Confirmed hypothesis H_1. The same results in estimates logic was applied for the rest of the variables.

It should be noted that despite the fact that there is high correlation between X_1 and X_2 or no correlation between X_2 and Y_2, also between X_1 and Y_5, author continued the research and used solely X_1 or X_2 in the regression analysis depending on the correlation coefficient interpretation results. Additional information on correlations including the level variables described here and their first differences is provided in Appendix 23.

Table 33. *GBSCs and Macroeconomic Indicators Correlation Coefficient Interpretation – Strenght of Correlation*

	Empl_GBSCs (X2)	Number of GBSCs (X1)	Unemployment rate (Y1)	Youth unemployment rate (Y2)	Total receipts from taxes and social contributions (Y3)	Annual net earnings (Y4)	Final consumption expenditure of households (Y5)	Reemigrated nationals (Y6)	GDP at market prices (Y7)
Empl_GBSCs (X2)	1	High correlation	Negative average correlation	No correlation	High correlation	No correlation	High correlation	Negative average correlation	No correlation
Number of GBSCs (X1)	High correlation	1	Weak negative correlation	Average negative correlation	High correlation	Weak negative correlation	High correlation	Weak relative correlation	No correlation

Source: *compiled by author*

Data stationarity. Stationarity of all the variables in levels and their transformations is checked using two tests: Levin, Lin & Chu test where H_0 assumes common unit root process, and Augmented Dickey-Fuller (ADF) test which assumes individual unit root process. The transformations used here are the first differences (marked "_D"). The results are provided in Appendix 23.

The null hypothesis in these tests is that the variable has a unit root (either common or individual). If p-value of the test is >0.05, the null can be accepted, meaning that the series has a unit root. Moreover, if the null is rejected for the first differences of the variable, or the percentage change of the variable (which approximately is equal to the difference of logged variable), that means that the variable is integrated of order 1, or *I(1)*. Using *I(1)* variables in the regression estimation could be problematic, as this could lead to inefficient estimators and spurious regression. To avoid this problem, stationary transformations of *I(1)* indicators are used in addition to the initial variables. However, there is also a drawback in using these transformations: the data series for some variables become even shorter and that could lead to less credible results.

The unit roots tests do not reject the null hypothesis for these variables: GBSCE, REC, ANEC, SCI, MI, GDPI; while the null is rejected for their transformations, therefore, these variables are treated as *I(1)*. Furthermore, EMPLR (ratio of employees in GBSCs and total employment), is potentially integrated of order 2, *I(2)*: the unit root hypothesis is not rejected to the first difference by a small margin, the existance of a

unit root is not clear cut, hile the second-order difference clearly does not have a unit root. In case of variables LMI and LMIY, evidence for a unit root is not clear cut, but we will treat them as stationary in the further estimation.

Detailed panel data analysis outcome derived from the software package Gretl is presented in the Appendixes 25-31. The reaserach results are based on fixed, random effects and pooled OLS models depending on the anayzed macroeconomic indicator.

Some of the model diagnostics taken into account:

- **R** – represents the correlation between the dependent and independent variable.

- **R Square** is coefficient of determination or the proportion of variance in the dependent variable (Y_1-Y_8) which can be predicted from the independent variables (X_1, X_2). 0 % R Square would indicate that the model explains none of the variability of the response data around its mean. 100 % R Square would indicate that the model explains all the variability of the response data around its mean.

- **Adjusted R Square** shows the goodness of fit, taking into account the number of regressors.

- **Durbin-Watson** test – shows autocorrelation (Durbin Watson value can be from 0 to 4). Generally, there is no autocorrelation if this value is close to 2, while values between 1 and 3 are treated as acceptable.

If the values are unsatisfactory in the estimation output tables of the models, then there is a need for adjusting the data until the desired results are obtained.

Other characteristics:

- **F ratio** – shows if the overall regression model is a good fit for the data. Aim is to have it >1.

- **P-value** of the coefficient – indicates if a coefficient has significant influence on the dependent variable. In this analysis, the aim is to have it less than 0.10 ($<\alpha=0.1$),), i.e. statistically significant at 0.1 significance level. Throughout the estimation for all the variables, Arrelano-Bond procedure for robust standard errors was used to obtain meaningful p-values for regressor significance.

GBSCs impact on unemployment rate (percentage of total population) in CEE countries. For this part, equations where LMI is the dependent variable, and GBSCs – the regressor were evaluated, both variables are stationary (see Appendix 23). Statistical tests for the model choice (see Table 34) were performed on a model with a late dependent variable which was significant and helped to reduce the autocorrelation of errors. Both the test for differing group intercepts (p-value = 0.3764 > 0.05) and Breusch-Pagan test (p-value = 0.9202 > 0.05) suggested that pooled regression is more

suitable than both fixed-effects and random-effects models..

Table 34. *Summary of the Outcome of Statistical Tests in the Model Choice Procedure, variable LMI*

	Pooled regression			Fixed-effects model			Random-effects model		
	Coeff.	*t*-ratio	*p*-value	Coeff.	*t*-ratio	*p*-value	Coeff.	z	*p*-value
Const	-0.0336	-0.2255	0.8305	0.0253	0.0895	0.9322	−0.0373	-0.2412	0.8094
GBSCS	-0.0003	-2.003	0.1016	-0.0002	-0.5072	0.6336	−0.0003*	-1.783	0.0746
LMI(-1)	0.8943***	46.25	0.0000	0.8757***	18.24	0.0000	0.8922***	42.13	0.0000

Test for differing group intercepts: F(5, 26) = 1.1158, p-value = 0.3764.
Breusch-Pagan test: Chi-square(1) = 0.0100, p-value = 0.9202.
Hausman test: Chi-square(2) = 1.4478, p-value = 0.4848.
Pesaran CD test: z = 2.4096, p-value = 0.0160.
*Notes: 1) *** means that the coefficient's significance is confirmed at 0.01 significance*
*level; ** – 0.05 significance level; * – 0.1 significance level.*

The model choice procedure was not available for specifications with time-pseudovariables due to insufficient number of observations. Building on the pooled regression specification, time pseudovariables were added, some of which were significant. This action improved the model fit (R-squared = 0.98) and the coefficient for GBSCS turned out significant at 0.1 significance level. The estimated model and its main characteristics are in Table 35.

	Pooled regression		Pooled regression: significant coefficients (selected model)		Fixed-effects model		Fixed-effects model: significant coefficients		Random-effects model	
	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value
Const	0.3785	0.2252	0.2827	0.1708	1.5689**	0.0377	1.5498**	0.0405	−0.0373	0.8094
GBSCS	−0.00036	0.2083	−0.00038*	0.0561	−0.0011*	0.0009	−0.0011*	0.0779	−0.0003*	0.0746
LMI(−1)	0.8355***	0.0000	0.8665***	0.0000	0.5189***	0.0050	0.5345***	0.0053	0.8922***	0.0000
t_{2011}	0.4111	0.3986			1.9611***	0.0069	1.8557**	0.0119		
t_{2012}	0.4070	0.4780			1.7570**	0.0152	1.6621**	0.0200		
t_{2013}	0.1690	0.6064			1.3500**	0.0235	1.2639**	0.0304		
t_{2014}	−0.0867	0.7158			0.8574**	0.0264	0.7793*	0.0574		
t_{2015}	−0.1200	0.5928			0.5683**	0.0410	0.5047*	0.0620		
t_{2016}	−0.3490*	0.0532	−0.4048**	0.0242	0.2448***	0.0001	0.1936***	0.0054		
t_{2017}	−0.2849**	0.0270	−0.0574***	0.0030	0.04778	0.3218				
t_{2018}	−0.2684**	0.0403	−0.2708**	0.0131	−0.1275*	0.0610	−0.1528**	0.0303		
Diagnostics:										
Obs. no.	34		34		34		34		34	
Within R²	0.9805		0.9805		0.9860		0.985954		n/a	
DW	1.2748		1.2748		2.0798		2.087618		1.2567	

Table 35. *Summary of the Estimated and Selected Models, Dependent Variable: LMI*

Notes: 1) *** means that the coefficient's significance is confirmed at 0.01 significance level; ** – 0.05 significance level; * – 0.1 significance level.

All specifications suggest that GBSCS has a decreasing effect on unemployment rate. For the pooled regression model, the coefficient for GBSCS is significant at 90% level, and is negative (which is in line with the initial interpretation of the variable that the GBSCs should contribute positively to the economic environment. The estimated equation based on the pooled regression model is:

$$LMI_{it}=0.28+0.87LMI_{it-1}-0.0004GBSCS_{it}-0.41t_{2016}-0.06t_{2017}-0.27t_{2018}+\varepsilon_{it}, (17)$$

where t_{2016}, t_{2017} and t_{2018} are time pseudovariables, equal to 1 in years 2016, 2017 and 2018 respectively. Time-specific indicators help taking into account the different economic circumstances which have not been included among the explanatory variables.

According to this equation, each additional GBSC is associated with 0.0004 percentage point lower unemployment rate in the analysed countries.

GBSCs impact on youth unemployment rate (percentage of total population) in CEE countries. For this part, equations where LMIY is the dependent variable, and GBSCs – the regressor were evaluated, both variables are stationary (Appendix 23). As in the case of LMI, statistical tests for the model choice (see Table 36) where performed on a model with a late dependent variable which was significant and helped to reduce the autocorrelation of errors. Both the test for differing group intercepts (p-value = 0.3451 > 0.05) and Breusch-Pagan test (p-value = 0.9278 > 0.05) suggested that pooled regression is more suitable than both fixed-effects and random-effects models.

Table 36. *Summary of the Outcome of Statistical Tests in the Model Choice Procedure, Variable LMIY*

	Pooled regression			Fixed-effects model			Random-effects model		
	Coeff.	t-ratio	p-value	Coeff.	t-ratio	p-value	Coeff.	z	p-value
Const	0.2468	0.8213	0.4489	0.7964**	3.850	0.0120	−0.0373	-0.2412	0.8094
GBSCS	-0.00048**	-3.060	0.0281	-0.0014**	-3.348	0.0204	−0.0003*	-1.783	0.0746
LMI(-1)	0.8693***	20.67	0.0000	0.8101***	28.59	0.0000	0.8922***	42.13	0.0000

Test for differing group intercepts: F(5, 26) = 1.1814, p-value = 0.3451.

Breusch-Pagan test: Chi-square(1) = 0.0082, p-value = 0.9278.

Hausman test: Chi-square(2) = 8.2239, p-value = 0.0164.

Pesaran CD test: z = 3.0568, p-value = 0.0022.

*Notes: 1) *** means that the coefficient's significance is confirmed at 0.01 significance level;*
*** – 0.05 significance level; * – 0.1 significance level.*

The model choice procedure was not available for specifications with time-pseudovariables due to insufficient number of observations. Building on the pooled regression specification, time pseudovariables were added, some of which were significant. This action improved the model fit (R-squared = 0.94) and the coefficient for GBSCS remained significant at 0.05 significance level. The estimated models and their main characteristics are in Table 37.

	Pooled regression		Pooled regression: significant coefficients (selected model)		Fixed-effects model		Fixed-effects model: significant coefficients		Random-effects model	
	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value
Const	0.7158	0.2536	0.7229	0.1825	2.6658***	0.0002	2.6436***	0.0000	0.2485	0.3860
GBSCS	-0.00029**	0.0470	-0.00039**	0.0151	-0.0028***	0.0036	-0.0028***	0.0000	-0.00047***	0.0044
LMI(-1)	0.8288***	0.0003	0.8374***	0.0000	0.5214***	0.0004	0.5300***	0.0000	0.8671***	0.0000
t2011	0.1769	0.5153			1.2407**	0.0221	1.1891***	0.0045		
t2012	0.4614	0.6153			1.3521*	0.0814	1.3063**	0.0309		
t2013	0.2681	0.5883			1.1022*	0.0952	1.0586**	0.0376		
t2014	-0.1117	0.7616			0.5308**	0.0472	0.4879**	0.0251		
t2015	-0.3947*	0.0677	-0.5055***	0.0001	0.0550	0.7943				
t2016	-0.4016	0.1386	-0.5002	0.1594	0.0153	0.9384				
t2017	-0.3838*	0.0678	-0.4644*	0.0874	-0.2001	0.2086	-0.2167*	0.0508		
t2018	-0.5531**	0.0194	-0.6180**	0.0304	-0.5105***	0.0085	-0.5206***	0.0000		
Diagnostics:										
Obs. no.	34		34		34		34		34	
Adjusted R2	0.9330		0.9376		0.9583		0.9583		n/a	
DW	1.4041		1.4677		2.0357		2.0526		1.3996	

Table 37. *Summary of the Estimated and Selected Models, Dependent Variable: LMIY*

*Notes: 1) *** means that the coefficient's significance is confirmed at 0.01 significance*

*level; ** – 0.05 significance level; * – 0.1 significance level.*

All specifications suggest that GBSCS has a decreasing effect on youth unemployment rate. For the selected pooled regression specification, the coefficient for GBSCS is significant at 0.05 level, is negative (.. The estimated equation based on the pooled regression model is:

$$LMIY_{it}=0.72+0.84LMIY_{it-1}-0.0004GBSCS_{it}-0.51t_{2015}-0.50t_{2016}-0.46t_{2017}-0.62t_{2018}+\varepsilon_{it}, \quad (18)$$

where t_{2015}, t_{2016}, t_{2017} and t_{2018}, are time pseudovariables, equal to 1 in years 2015, 2016, 2017 and 2018 respectively. Time-specific indicators help taking into account the different varying economic circumstances which have not been included among the explanatory variables. **According to this equation, each additional GBSC is associated with 0.0004 percentage point lower youth unemployment rate in the analysed countries**. The estimated impact on youth unemployment rate is of the same size as the impact on overall unemployment rate, although being more significant. Therefore, we can conclude that GBSCs have a similar impact in reducing the unemployment rate among the young people as in the general population.

GBSCs impact on total receipts from taxes and social contributions (social security funds). For this part, equations where REC_D, the first difference of REC, is the dependent variable, and GBSCs – the regressor were evaluated, both variables are stationary (Appendix 23). Statistical tests for the model choice (see Table 38) suggested that the random effects model is the most suitable: the test for differing group intercepts (*p*-value = 0.0010) suggests that fixed-effects model is prefered over pooled regression, while Breusch-Pagan test (*p*-value = 0.0415) suggests that random-effects model is prefered over pooled regression, and finally, Hausman test (*p*-value = 0.1888) suggests that random-effects model is preferred over the fixed-effects model.

Table 38. *Summary of the Outcome of Statistical Tests in the Model Choice Procedure, Variable REC_D*

	Pooled regression			Fixed-effects model			Random-effects model		
	Coeff.	*t*-ratio	*p*-value	Coeff.	*t*-ratio	*p*-value	Coeff.	z	*p*-value
Const	-78.5527	-0.6739	0.5303	9.0367	0.1363	0.8969	−21.4692	-0.1257	0.8999
GBSCS	2.0333***	22.35	0.0000	1.6606***	5.885	0.0020	1.8123***	10.38	0.0000

Test for differing group intercepts: F(5, 25) = 5.8756, p-value = 0.0010.

Breusch-Pagan test: Chi-square(1) = 4.1570, p-value = 0.0415.

Hausman test: Chi-square(2) = 1.7270, p-value = 0.1888.

Pesaran CD test: z = -0.7341, p-value = 0.4229.

*Notes: 1) *** means that the coefficient's significance is confirmed at 0.01 significance level; ** – 0.05 significance level; * – 0.1 significance level.*

The estimated model and its characteristics are in Table 39.

Table 39. *Summary of the Estimated and Selected Models, Dependent Variable: REC_D*

	Random effects	
	Coef.	**p-value**
const	−21.4692	0.8999
GBSCS	1.81234	<0.0001***
Diagnostics:		
Observation no.	32	
Within/Adjusted R²	n/a	
DW	2.2943	

*Notes: 1) *** means that the coefficient's significance is confirmed at 0.01 significance level; ** –0.05 significance level; * – 0.1 significance level.*

GBSCs have a positive effect (1.81 on the change in the amount on receipts from taxes and social contributions, and the effect is highly significant at 0.01 level. The model does not capture additional variation across countries, however these differences could be captured in the random effect. The estimated equation is:

$$REC\_D_{it} = -21.5 + 1.81 GBSCS_{it} + w_{it}, \quad (19)$$

where w_{it} is the random effect. **According to this equation, each additional GBSC is associated with 1.8 Million Eur increase in the total receipts from taxes and social contributions in the analysed countries.**

GBSCs impact on annual net earnings (single person without children earning 100% of the average earning). For this part, equations where ANEC_D, the first difference of ANEC, is the dependent variable, and GBSCs – the regressor were evaluated, both variables are stationary (Appendix 23). Statistical tests for the model choice (see Table 40) suggested that the pooled OLS model is the most suitable: the test for differing group intercepts (*p*-value = 0.4144) suggests that pooled regression is preferred over the fixed-effects model, while Breusch-Pagan test (*p*-value = 03028) suggests that pooled regression is preferred over the random-effects model, and finally, Hausman test (*p*-value = 0.0169) suggests that random-effects model is not preferred over the fixed-effects model.

Table 43. *Summary of the Estimated and Selected Models, Dependent Variable: SCI_D*

	Pooled regression		Pooled regression: significant coefficients		Fixed-effects model		Fixed-effects model: significant coefficients (selected model)		Random-effects model	
	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value
Const	1152.76*	0.0929	−489.588	0.4450	−1898.72	0.4396	−2363.60***	0.0010	535.034	0.6168
GBSCS	15.4955***	<0.0001	15.8751***	<0.0001	25.5809***	0.0012	25.9008***	<0.0001	20.4533***	0.0000
t_{2008}	1146.93	0.0910	2782.06***	0.0058	2830.62	0.1766	3170.71***	<0.0001		
t_{2009}	−4268.46***	0.0006	−2634.5***	0.0073	−2615.03	0.2037	−2275.90***	<0.0001		
t_{2010}	−1172.52***	0.0010			796.179	0.6022	1137.63	0.2277		
t_{2011}	−645.890	0.6429			1252.21	0.5884	1591.42***	0.0089		
t_{2012}	−1882.55	0.3603			−65.1342	0.9812				
t_{2013}	−2279.72	0.3026			−532.900	0.8532				
t_{2014}	−1997.00	0.1522			340.628	0.9098				
t_{2015}	−1951.45**	0.0427			127.319	0.9401				
t_{2016}	−2769.44	0.3533			−1609.62	0.4014				
t_{2017}	3843.40	0.1709	5391.27*	0.0954	3957.06	0.2899	4401.34	0.1400		
t_{2018}	1681.52	0.2637	3219.33*	0.0641	1527.91	0.4017	1963.72	0.1258		
Diagnostics:										
Obs. no.	38		38		38		38		38	
Adjusted R²	0.6389		0.6923		0.5630		0.5415		n/a	
DW	2.1637		2.0952		2.5948		2.6050		2.5588	

Notes: 1) *** means that the coefficient's significance is confirmed at 0.01 significance level; ** – -.05 significance level; * – 0.1 significance level.

The selected specification suggests that the coefficient for GBSCs is above 0 and highly significant at 0.01 level. Some of the insignificant time effects were kept to maintain the sufficiently high R-square. The estimated equation is:

$$SCI\_D_{it} = -2363.6 + c_i + 25.9 GBSCS_{it} + 3170.7 t_{2008} - 2275.9 t_{2009} + 1137.6 t_{2011} + 4401.3 t_{2017} + 1963.7 t_{2018} + \varepsilon_{it}, \quad (20)$$

where c_i are country-specific constants $t_{2008}, \ldots, t_{2018}$ are time pseudovariables, equal to 1 in years 2008-2011, 2017 and 2018 respectively. Time-specific indicators help taking into account the different varying economic circumstances which have not been included among the explanatory variables. **According to this equation, each additional GBSC is associated with 25.9 mln. Eur larger change in final consumption expenditure.**

GBSCs impact on the number of reemigrated nationals in CEE countries. For this part, equations where MI_D (the first difference in MI) is the dependent variable, and GBSCS – the regressor were evaluated, both variables are stationary (Appendix 23). Statistical tests for the model choice (see Table 44) suggested that pooled regression is preferred over the fixed or random-effects models: the test for differing group intercepts (p-value = 0.7868) suggests that the pooled regression is preferred over the fixed-effects model , while Breusch-Pagan test (p-value = 0.2524) suggests that pooled regression is preferred over the random-effects model, and finally, Hausman test (p-value < 0.0001) suggests that random-effects model is not preferred over the fixed-effects model.

Table 44. *Summary of the Outcome of Statistical Tests in the Model Choice Procedure, Variable MI_D*

	Pooled regression			Fixed-effects model			Random-effects model		
	Coeff.	t-ratio	p-value	Coeff.	t-ratio	p-value	Coeff.	z	p-value
Const	525.256	1.273	0.2719	-284.946	-0.7859	0.4759	525.256	1.273	0.2029
GBSCS	-0.7411	-1.474	0.2146	2.5546*	2.526	0.0649	-0.7411	-1.474	0.1405
MI_D(-1)	0.3229***	6.580	0.0028	0.1365	0.9768	0.3840	0.3229***	6.580	0.0000

Test for differing group intercepts: F(4, 16) = 0.4272, p-value =0.7868.

Breusch-Pagan test: Chi-square(1) = 1. 3100, p-value = 0.2524.

Hausman test: Chi-square(2) = 90.5834, p-value < 0.0001.

Pesaran CD test: z = 1.9839, p-value = 0.0472.

Notes: 1) *** means that the coefficient's significance is confirmed at 0.01 significance level; ** – 0.05 significance level; * – 0.1 significance level.

The model choice procedure was not available for specifications with time-pseudovariables due to insufficient number of observations. Building on the fixed-effects model specification, time pseudovariables were added, some of which were significant and improved the model fit.. The estimated model and its characteristics are in Table 45.

Table 45. *Summary of the Estimated and Selected Models, Dependent Variable: MI_D*

	Pooled regression		Pooled regression: significant coefficients (selected model)		Fixed-effects model		Fixed-effects model: significant coefficients		Random-effects model	
	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value
Const	489.769	0.6778	1042.36**	0.0436	1264.98	0.7740	692.627***	0.0110	525.256	0.2029
GBSCS	−1.0181	0.1247	−0.9620	0.1164	−1.85142	0.8178	0.6124	0.1519	-0.7411	0.1405
MI_D(-1)	0.36117**	0.0488	0.3176***	0.0058	0.1770*	0.0733	0.1495	0.2265	0.3229	0.0000
t_{2014}	−79.875	0.9271			−564.893	0.8290				
t_{2015}	228.676	0.9218			−411.937	0.9092				
t_{2016}	−2057.12	0.3499	−2596.39*	0.0552	−2476.82	0.4671	−2524.05*	0.0805		
t_{2017}	303.844	0.9042			−279.448	0.9381				
t_{2018}	2079.36	0.2899			1632.80	0.2670				
Diagnostics:										
Obs. no.	23		23		23		23		23	
Adjusted R²	0.0845		0.1783		0.2982		0.2046		n/a	
DW	1.8029		1.7814		1.6921		1.7323		1.7331	

Notes: 1) *** means that the coefficient's significance is confirmed at 0.01 significance level; ** – 0.05 significance level; * – 0.1 significance level.

The estimation suggests that the impact of GBSCS is negative, but not significant. **<u>According to this equation, GBSC is not associated with a change in the number of reemigrated national population.</u>**

The estimated equation is:

$$MI_{Dit}=1042.36+0.32MI_{Dit-1}GBSCS_{it}-2596.39t_{2016}+\varepsilon_{it} \ (21)$$

248

where t_{2016} is pseudovariable, equal to 1 in year 2016. These results, even not too significant, contradict with the other part of research of this dissertation, according to which GBSCs increase remigration, which has positive macroeconomic effect. For instance, one of GBSCs in Vilnius attracted to the country 60 employees.

GBSCs impact on GDP per capita. For this part, equations where GDPI_D, the first difference of GDPI, is the dependent variable, and GBSCS is the regressor, were evaluated, both variables are stationary (Appendix 23). Statistical tests for the model choice suggested that the fixed effects model with cross-section and time fixed effects is suitable (Table 46): the test for differing group intercepts (p-value = 0.0079) suggests that the fixed-effects model is preferred over the pooled regression, while Breusch-Pagan test (p-value = 0.1800) suggests that pooled regression is preferred over the random-effects model, and finally, Hausman test (p-value = 0.1799) suggests that random-effects model is preferred over the fixed-effects model.

Table 46. *Summary of the Outcome of Statistical Tests in the Model Choice Procedure, Variable GDPI_D*

	Pooled regression			Fixed-effects model			Random-effects model		
	Coeff.	*t*-ratio	*p*-value	Coeff.	*t*-ratio	*p*-value	Coeff.	z	*p*-value
Const	762.836***	5.953	0.0019	370.362**	2.8526	0.0358	692.358***	5.150	0.0000
GBSCS	0.0049	0.0244	0.9814	1.8193**	3.030	0.0291	0.4255	1.627	0.1037

Test for differing group intercepts: F(5, 29) = 3.9056, p-value = 0.0079.
Breusch-Pagan test: Chi-square(1) = 1.7977, p-value = 0.1800.
Hausman test: Chi-square(2) = 19.8264, p-value = 0.1799.
Pesaran CD test: z = 4.3389, p-value < 0.0001.
Wald joint test on time dummies: Chi-square(9) = 46.4407, p-value < 0.0001.
Notes: 1) *** means that the coefficient's significance is confirmed at 0.01 significance level; ** – 0.05 significance level; * – 0.1 significance level.

The model choice procedure was not available for specifications with time-pseudovariables due to insufficient number of observations, however Wald joint test on time dummies (p-value < 0.0001) suggests the existence of time effects. Building on the fixed-effects specification, time pseudovariables were added, some of which were significant and improved the model fit.

The estimated model and its characteristics are in Table 47.

Table 47. *Summary of the Esimated and Selected Models, Dependent Variable: GDPI_D*

	Pooled regression		Pooled regression: significant coefficients		Fixed-effects model		Fixed-effects model: significant coefficients (selected model)		Random-effects model	
	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value
Const	1137.32***	0.0012	1106.13***	0.0014	1109.65***	0.0002	792.706***	<0.0001	692.358***	0.0000
GBSCS	−0.3267	0.2442	−0.258551	0.2941	−0.237852	0.7370	0.747020*	0.0503	0.4255	0.1037
t_{2010}	−571.572**	0.0154	−544.707**	0.0207	−590.898**	0.0173	−394.464**	0.0104		
t_{2011}	−334.286	0.4770			−354.233	0.1320				
t_{2012}	−766.672	0.1284	−740.829*	0.0793	−787.330***	0.0021	−605.669**	0.0435		
t_{2013}	−659.386**	0.0226	−634.019***	0.0064	−680.665***	0.0059	−505.898***	<0.0001		
t_{2014}	−562.117***	0.0043	−545.911***	0.0035	−561.729**	0.0173	−341.096***	0.0010		
t_{2015}	−510.399**	0.0382	−495.941*	0.0616	−512.291**	0.0220				
t_{2016}	−685.566***	0.0044	−668.502***	0.0022	−675.353***	0.0007	−563.822***	<0.0001		
t_{2017}	58.9687	0.4604			95.1732	0.5417				
t_{2018}	9.29188	0.9278			43.1429	0.7735				
Diagnostics:										
Obs. no.	36		36		36		36		36	
Adjusted R²	0.4178		0.4317		0.7466		0.5812		n/a	
DW	0.7720		0.8701		1.7815		1.6274		1.4898	

Notes: 1) *** means that the coefficient's significance is confirmed at 0.01 significance level;
** – 0.05 significance level; * – 0.1 significance level.

The estimation suggests that the coefficient for GBSCs is above 0 and significant at 0.1 level. The estimated equation is:

$$GDPID_{it}=793+c_i+0.75 GBSCS_{it}-394t_{2010}-606t_{2012}-506t_{2013}-341t2_{014}-564t_{2016}+\varepsilon_{it}, \quad (22)$$

where c_i are country-specific constants, $t_{2010},\ldots,t_{2016}$ are time pseudovariables, equal to 1 in years 2010, 2012-2014, and 2016 respectively. Time-specific indicators help taking into account the different varying economic circumstances which have not been included among the explanatory variables. **According to this equation, each additional GBSC is associated with a small but somewhat significant 0.75 Eur larger annual change in GDP per capita in the selected CEE countries.**

To sum up, an empirical study of GBSCs impact on CEE countries macroeco

nomic indicators shows that GBSCs impact is positive in terms of total receipts from taxes and social contributions, final consumption expenditure of households, nominal GDP per capita, while the size of such macroeconomic indicators as unemployment rate, youth unemployment rate decreases when GBSCs increase. No effect from annual net earnings and remigrated nationals was detected. Thus, the hypothesis (H_1) about the beneficial effect of GBSCs on macroeconomic indicators can be accepted.

3.1.12. Research Results of Evaluation of Global Business Services Centers Impact on Macroeconomic Indicators

Taking into account that the dissertation research used the combination of available qualitative and quantitative research methods and research consisted of different stages, the main research results from the following research stages can be distinguished: evaluation of GBSCs impact on seven distinguished macroeconomic indicators groups (labor market, spending and consumption, migration, life quality, cross-sectorial growth, regional development, GDP related indicators) and CEE countries investment promotion agencies experts survey analysis; evaluation of multiplier effect of GBSCs impact on distinguished macroeconomic indicators; panel data analysis of GBSCs impact on selected macroeconomic indicators (see Table 48).

Table 48. *Research Results of Evaluation of GBSCs Impact on Macroeconomic Indicators in CEE Countries*

		LMI	SCI	MI	LQI	CSGI	RDI	GDPI
II research logical step, see Figure 16	Evaluation of GBSCs impact on seven distinguished macroeconomic indicators groups	Strong positive impact.	Strong positive impact.	Questionable impact.	Strong positive impact.	Strong positive impact.	Questionable impact.	Evaluation should be instead done through employment, spending and consumption and cross-sectorial growth indicators, which better reflect the GBSCs impact.
	CEE countries investment promotion agencies experts survey analysis	Strenght of GBSCs impact: 3.3 out of 4. **Strong** impact.	Strenght of GBSCs impact: 3.3 out of 4. **Strong** impact.	Strenght of GBSCs impact: 1.5 out of 4. **Questionable** impact, additional migration indicators analysis is needed.	Strenght of GBSCs impact: 3.7 out of 4. **Strong** impact.	Strenght of GBSCs impact: 3.3 out of 4. **Strong** impact.	Strenght of GBSCs impact: 2.3 out of 4. **Questionable** impact.	Strenght of GBSCs impact: 2.5 out of 4. Impact can be strong, but evaluation should be instead done through employment, spending and consumption and cross-sectorial growth indicators, which better reflect the GBSCs impact.
III research logical step, see Figure 16	Selected multiplier effect evaluation methodology's theoretical statements and scientific justification based on GBSCs (see Figure 28)	Scientific justification for each theoretical statement regarding GBSCs direct, indirect, induced and dynamic multiplier effects manifestation was done. This scientific contribution of theoretical manner shows that there is close interconnectedness between all the 7 macroeconomic indicators groups distinguished in the dissertation and paralleled with GBSCs. Multiplier effect analysis is better contributing to the improvement of exploration level of evaluation of GBSCs macroeconomic outcomes than it is done when each macroeconomic indicator is solely paralleled with GBSCs.						

		LMI	SCI	MI	LQI	CSGI	RDI	GDPI
SEB Global Services Vilnius business case analysis as example of multiplier effect of GBSCs impact on macroeconomic indicators in Lithuania		Working places created for 0,09 % of total employed in Lithuania; monthly personal income tax and social contributions paid due to employment in SEB GBSC: 1,244,810.42 €.	SEB GBSC employees monthly additional gross disposable income due to higher than average national salary (1,434,468.00 €) as share of total consumption expenditure of household in Lithuania: 4.87 %.	5 % of employed (60 employees) in SEB GBSC are reemigrants; monthly personal income tax, social contributions and additional gross disposable income gained due to higher than average salary in GBSCs paid to reemigrants: 133,963.92 €	Additional benefits such as comprehensive health insurance, additional time-off depending on length of tenure, paid holidays on family occasions, paid time-off for volunteering, recreational spaces, coffee & snacks, fitness classes, office sports teams, yearly profit-sharing programme, contributions to employee pension funds, personal finance guidance, trainings locally and abroad, paid leave for work-related studies, training programmes and employee LABs, other.	1,200 employed in SEB Global Services Vilnius generate at least 36 working places in secondary services sectors, contribute to Lithuanian economy by at least 2,786,049.68 EUR monthly amount through jobs-related taxes and secondary services providers revenue.	Location quotient in Vilnius is 1.674808243 (>1.25 is significant) and SEB Global Services Vilnius being one of the biggest GBSCs employers significantly contributes to GBSCs specialization level in Vilnius.	Analyzed GDP components such as employment, spending and consumption indicators, cross-sectorial growth indicators are better reflection of GBSCs impact on macroeconomic indicators.
		Total known secondary employment outcome of 1.200/1 employed in SEB GBSC: 36/0.3; total known monthly EUR outcome of 1.200/1 employed in SEB GBSC: 2,786,049.68 € / 2,321.71 €. If we would apply the same evaluation logic for all 81 GBSCs in Lithuania, who employ 19,300 Lithuanians, we could generalize that all employed in GBSCs located in Lithuania could generate at least 579 working places in secondary services sectors, contribute to Lithuanian economy by at least 44,808,965.75 € monthly amount through jobs-related taxes and secondary services providers revenue. Unfortunately, due to lack of reliable statistical and other accessible data for other GBSCs in all selected CEE countries, due to difference in size of these GBSCs, possible geographical differences, possible differences in multiplier effect on macroeconomic indicators for each GBSCs and other specific differences, author of this dissertation cannot make generalizations regarding other GBSCs in all selected CEE countries.						
IV research logical step, see Figure 16	*Panel data analysis of GBSCs impact on selected macroeconomic indicators*	Unemployment rate (percentage of total population); youth unemployment rate (15 to 24 years unemployed as percentage of total population); total receipts from taxes and social contributions (social security funds); million EUR; annual net earnings (single person without children earning 100% of the average earning). **Positive impact.** Each additional GBSC is associated with 0.0013	Final consumption expenditure of households, current prices, million EUR. **Positive impact.** Each additional GBSC is associated with 27.2 mln. Eur larger change in final consumption expenditure.	Reemigrated nationals. **Insignificant negative impact detected.** These results, even not too significant, are not in line with the other part of research of this dissertation. Possible reason for this contradiction – scarcity of statistical data.	No quantitative data available for panel data analysis.	No quantitative data available for panel data analysis.	No quantitative data available for panel data analysis.	GDP at market prices, current prices, EUR per capita. **Small, but significant positive impact.** However, GDP paralleling with GBSCs would not show the significant results since such GDP components as for instance employment or spending and consumption (included into the panel data analysis) are reflecting the GBSCs impact in a better way. Also see results in II and III research logical steps above.

254

		LMI	SCI	MI	LQI	CSGI	RDI	GDPI
		% lower unemploymen t rate, 0.0028 % lower youth unemploymen t ratel, 1.8 Million Eur increase in the total receipts from taxes and social contributions. Impact on annual net earnings from GBSCs sector was not detected.						
	Statistical data scarcity is the main panel data analysis limitation. The research results mainly show positive impact on macroeconomic indicaors, but it can be undervalued. Also, the GBSCs impact on some of the macroeconomic indicators could be not detected due to the same reason.							

Source: *compiled by author*

The main outcomes of evaluation of GBSCs impact on seven distinguished macroeconomic indicators groups are detalized in Appendix 4 and summarized in Table 49.

Table 49. *Research Results of Evaluation of GBSCs Impact on Separate Macroeconomic Indicators in Central and Eastern Europe Countries*

	Relative (R) / Absolute (A) size	Median	Min	Max	GBSCs impact
Employment in GBSCs, in thousands (2019)	A	90.95	Lithuania: 19.3	Poland: 338	Strong impact on labor market indicators
Employment in GBSCs per 1000 residents (2019)	R	7.03	Romania: 6.75	Czech Republic: 10.64	
Employment growth average (2014-2019)	R	16.42%	Romania: 6.35%	Poland: 21.82%	
GBSCs/Total Employment Ratio, % (2019, Romania 2018)	R	1.57%	Slovakia: 1.57%	Czech Republic: 2.17%	
GBSCs average salary higher than national average salary, % (2019-2020)	R	70.32%	Slovakia: 26.68%	Poland: 115.19%	
GBSCs (2019) / social security funds (2018) collected contributions ratio, %	R	4.32%	Slovakia: 0.90%	Czech Republic: 10.82%	
Projected additional annual gross disposable income created due to higher average salary in GBSC in 2020, in thousand EUR	A	886,883.82	Slovakia: 228,624.81	Poland: 2,614,670.11	Strong impact on spending/con

	Relative (R) / Absolute (A) size	Median	Min	Max	GBSCs impact sumption indicators
Projected additional annual gross disposable income created due to higher average salary in GBSC in 2020 /Total expenditure in 2019 ratio expressed in %	R	1.18%	Slovakia: 0.44%	Poland: 2.24%	
Projected additional annual gross disposable income created due to higher average salary in GBSC in 2020/ Food and non-alcoholic beverages expenditure in 2019 ratio expressed in %	R	6.38%	Slovakia: 2.51%	Poland: 13.66%	
Projected additional annual gross disposable income created due to higher average salary in GBSC in 2020/ Electricity, gas and other fuels expenditure in 2019 ratio expressed in %	R	28.05%	Slovakia: 5.11%	Romania: 55.29%	
Projected additional annual gross disposable income created due to higher average salary in GBSC in 2020/ Recreation and culture expenditure in 2019 ratio expressed in %	R	15.10%	Slovakia: 4.52%	Romania: 29.62%	
Projected additional annual gross disposable income created due to higher average salary in GBSC in 2020/ Education expenditure in 2019 ratio expressed in %	R	151.42%	Slovakia: 29.34%	Poland: 223.71%	

	Relative (R) / Absolute (A) size	Median	Min	Max	GBSCs impact
Re-emigration ratio,% (2019)	R	2.87%	Czech Republic: 2.87%	Lithuania: 69.73%	**Questionable impact on migration indicators**
Life quality elements of employment in GBSCs	A - plenty of different tangible and intangible benefits	n/a	n/a	n/a	**Strong** impact on life quality indicators
Built stock part occupied by GBSCs employees in 2020	R	42.24%	Hungary: 27.37%	Poland: 89.47%	**Strong** impact on cross-sectorial growth indicators
Other sectors influenced by GBSCs	A - many other sectors are being influenced	n/a	n/a	n/a	
Proportion of employees within GBSCs located in capital and non-capital cities (2019-2020)	R - capital 50% or more, non capital 50% or less	n/a	Budapest: 26 % GBSCs located in regions	Poland: 81.7% GBSCs located in regions	**Questionable impact on regional development indicators**
GDP related indicators	Such GDP aggregates as compensation of GBSCs employees and cross-sectorial growth influenced by GBSCs can be treated as the main aggregates, which positively impact GDP.				

Source: *compiled by author*

Table 49 shows the main metrics, which have been used to evaluate the GBSCs impact on each of the distinguished 7 macroeconomic indicators groups (second research logical part in Figure 16). The main aim of the dissertation author here was to transform the scarce absolute GBSCs statistical data into the relative sizes and to compare them among the selected CEE countries as well as to conclude about GBSCs impact on macroeconomic indicators, which was also complemented by other research techniques in subsequent (third and fourth logical research parts, see Figure 16). There are also seen clear data exclusions in Table 49 (for instance, Slovakian results are often

below the median and Polish results are above the median), which can be the result of different GBSCs market development levels despite the previously revealed macroeconomic background similarities. Also, this can be result of previously mentioned data collection inhomogenity (not all the research data were extracted from the same data source). The same insight was done by the author of the dissertation in the fourth research logical part (panel data analysis).

Second, third and fourth research logical parts results show the following:

1. GBSCs in CEE countries have strong positive impact on labor market indicators (confirmed by evaluation of GBSCs impact on separate macroeconomic indicators, experts survey analysis, GBSCs impact multiplier effect analysis and panel data analysis).

2. GBSCs in CEE countries have strong positive impact on spending/consumption indicators (confirmed by evaluation of GBSCs impact on separate macroeconomic indicators, experts survey analysis, GBSCs impact multiplier effect analysis and panel data analysis).

3. GBSCs in CEE countries could have positive impact on migration indicators (confirmed by evaluation of GBSCs impact on separate macroeconomic indicators, experts survey analysis, GBSCs impact multiplier effect). However, more investigation on the employment nature of reemigrated nationals is needed. SEB Global Services Vilnius business case analysis proves that GBSCs are attracting nationals to reemigrate. However, more data and not only from Lithuania shall be gathered and analyzed. Also, based on panel data analysis, insignificantly negative impact on reemigration was detected. However, these not too significant results can be affected by the limitation of scarcity of statistical data.

4. GBSCs in CEE countries have strong positive impact on life quality indicators (confirmed by evaluation of GBSCs impact on separate macroeconomic indicators, experts survey analysis and GBSCs impact multiplier effect analysis). This conclusion is based on the qualitative research results. Quantitative expression could be added in the future researches.

5. GBSCs in CEE countries have strong positive impact on cross-sectorial growth indicators (confirmed by evaluation of GBSCs impact on separate macroeconomic indicators, experts survey analysis and GBSCs impact multiplier effect analysis). More data should be gathered for further econometric analysis on this topic.

6. GBSCs in CEE countries could have strong positive impact on regional de-

velopment indicators in some countries (confirmed by evaluation of GBSCs impact on separate macroeconomic indicators and experts survey analysis). For instance, Poland is the greatest result where majority of GBSCs (81.7 %) are located outside the capital. However, as it was mentioned in the research, in some countries disproportion between the regions can even decrease due to emergence of GBSCs. Therefore, the separate deep regional development analysis for each country should be done. This can be included into the further research.

7. Despite the fact that panel data analysis shows small, but significant positive impact on GDP at market prices, current prices, EUR, the rest of the research results show that GBSCs impact on GDP related indicators shall be done through measuring the impact on such GDP aggregates as employment, spending and consumption and cross-sectorial growth. Such evaluation shall better reflect the GBSCs impact.

RESEARCH CONCLUSIONS AND RECOMMENDATIONS

Research conclusions:

1. Scientific literature analysis shows that world economy structure shifts are directed towards servitization. Growing relative weight of service sector leads to such economic outcomes as service sector investment liberalization, promotion, facilitation, agglomeration and scale economies and reshaping economic geography. This determines constant emergence and development of global business forms, which can exploit the advantages of globalization and digital enablers to create value in complex hyper competition conditions. As a result of foreign investors reaction to the mentioned changes in service sector such service sector FDI segment as GBSCs is becoming more popular.

2. Conceptual framework of GBSCs analyzed in the dissertation shows the novelty of this economic phenomenon and fast, constant evolution of it. From one side, variety of changing definitions of GBSCs can be supportive tool to explore the economic nature of this phenomenon. From another side, the diversity of GBSCs definitions leads to some scientific discussions regarding the understanding of it's essence and misinterpretations seen as one of the GBSCs related researches limitation. Based on the insights from different views on GBSCs and the value it brings author formulates GBSCs definition as follows: global value agile organization, which meets the conditions of multi-function, multi-region, multi-location, multi-sourced and multi-business characteristics and which is using globalization, digital enablement as the core drivers to create value according to common service level agreement.

3. The analysis of increasing scope and economic value of GBSCs phenomenon reveals such aspects: constantly increasing service portfolio provided by GBSCs, centralization of more sophisticated business processes performed by GBSCs – transition from basic economies of scale through standardization and resource re-allocation to customer centric, innovative, continuously improving efficiency organizational model; increasing scope of GBSCs is paralleled with increased and multiplying macroeconomic value, which is mainly seen in the host country where GBSCs are located.

4. Scientific exploration level of GBSCs as segment of services sector FDI in context of economic science is quite narrow at the current GBSCs phenomenon evolution stage. Furthermore, concentration on more general service sector FDI researches without distinguishing service sector FDI and it's segment such as GBSCs prove the novelty

of this phenomenon and the need for evaluation of it's exploration level in economic science context. However, there is a scarcity of researches, where GBSCs and macroeconomic indicators phenomenon are being paralleled. Few such macro analysis researches, which were found by the author, cover some descriptive data, but empirical testing is limited or is not being done at all due to lack of statistical data of this comparatively new GBSCs phenomenon. Also, author found that existing GBSCs researches on macro level cover one or few separate macroeconomic indicators analysis, but there is very limited amount of analysis of different macroeconomic level with emphasis on multiplier effect, which author of this dissertation emphasizes throughout the dissertation.

5. *Interconnectedness between GBSCs and macroeconomic indicators expressed by multiplier effect* analyzed in this dissertation shows that variety of macroeconomic indicators have to be included into GBSCs multiplier effect analysis since close interconnectedness between them is seen and the analysis of the set of macroeconomic indicators distinguish the actual value in more accurate way. Analysis of positive economic spillover effect (direct, indirect, induced and dynamic economic effects) in different value chains based on the Economic Development Research Group methodology was used by the author in this dissertation. Also, SEB Global Services Vilnius business case analysis was performed to reveal GBSCs multiplier effect based on Lithuanian example.

6. *The analysis of the research methods used by the researchers to measure the GBSCs macroeconomic outcomes* shows that in the light of global servitization processes, from one side, scientists are paying more attention for services sector economic outcomes and their measurability, but from another side, the *GBSCs macroeconomic outcome measurability problem* arises. New business models are constantly arising and the speed of their evolution and real macroeconomic impact is higher than the speed of the scientific exploration level of such new phenomenon and its macoeconomic impact. Therefore, the novelty of GBSCs phenomenon, scarcity of statistical data and scientific researches with GBSCs and macroeconomic indicators parallels, existing researches limitation such as descriptive nature of them rather than using of empirical testing, encourage author of this dissertation to look for the adapted measurement solutions and perform mainly descriptive, cognitive exploring of the GBSCs phenomenon as well as to use the combination of qualitative and available quantitative research methods. These methods can be complemented with more comprehensive quantitative research methods as panel data analysis, regression analysis and other in the future as soon as more statistics on GBSCs topic is available.

7. *Macroeconomic indicators and GBSCs phenomenon parralels* revealed in the theoretical part of the dissertation as well as the author's working experience in one of the biggest GBSCs in Lithuania encouraged the author of this dissertation to include the following macroeconomic indicators into the model for evaluation of GBSCs impact on macroeconomic indicators in CEE countries: labor market indicators, spending and consumption indicators, migration indicators, life quality indicators, cross-sectorial growth indicators, regional development indicators and GDP related indicators. However, the labor market indicators, spending and consumption indicators, life quality indicators and cross-sectorial growth indicators were ranked as the most important according to the experts survey and the same tendency is seen according to the dissertation research results.

8. *Analysis performed in theoretical and methodological parts of this dissertation shows the following research limitations*: fragmentation of GBSCs literature and lack of prior research studies on the topic, differences in definition of GBSCs phenomenon, lack of available and comprehensive statistics on the topic, lack of access to sensitive GBSCs data, predominance of secondary data analysis, lack of interest of experts to contribute to research, selection of the part of CEE countries as a context for research. It should be noted that the majority of research limitations are related with the novelty of GBSCs phenomenon, which from one side, raises many questions, complicates the research and encourages to use mainly qualitative research techniques due to statistical data scarcity, but from another side shows the evidence of the need of researches on GBSCs topic. Therefore, according to the author, this dissertation significantly contributes to the improvement of scientific exploration level of the GBSCs phenomenon together with it's parallels with macroeconomic indicators.

9. *Main outcomes of the dissertation research*:

• *GBSCs impact on <u>labor market indicators</u>*: average GBSCs employee can contribute to job related taxes and social contributions up to 5 times more than average employee in other CEE country company. Therefore, GBSCs play one of the most important roles as labor market indicators accelerators. GBSCs are not only gravitating towards a long-term sustainable employment growth rate in CEE countries, but also are encouraging such employment-related economic outcomes as employment restructuring, employment opportunities for the youth and social science graduates, significantly higher salaries offered in GBSCs in comparison with average national salary, significant contribution to the job related social contributions on the country level and

other. Panel data analysis also confirmed the positive GBSCs impact on the available labor market indicators included into the research: unemployment rate (percentage of total population), youth unemployment rate (15 to 24 years unemployed as percentage of total population), total receipts from taxes and social contributions (social security funds), million EUR. No GBSCs impact was detected only on annual net earnings (single person without children earning 100% of the average earning).

- *GBSCs impact on <u>spending and consumption indicators</u>:* employment in GBSCs and higher than average national salaries in GBSCs are important change enablers in structure of disposable income for consumption, spending, investment or saving. These enablers lead to the restructured consumption in CEE countries – additional amounts are being spent or saved by GBSCs employees. This impacts increasing GBSCs employees and their family members purchasing power, youth purchasing power, secondary, tertiary and further value chains purchasing power (multiplier effect). In case of scenario „spend more" household consumption expenditure indicators, investment indicators and cross-sectorial growth indicators are being influenced. Operating with additional income leads to increased life quality of GBSCs employees and their family members (increased investment rate). Multiplier effect can be also noticed here: the employment and salaries increase in GBSCs generate additional income, which employees then spend, potentially generating additional employment and cross-sectorial growth. In case of scenario „save more", higher than country's average saving due to higher than average salary in GBSCs increases countries saving rate and capacity to cope with a cyclical downturn (short term impact) and economy's capacity to finance itself (long term impact). Also, according to the author's estimations, projected additional annual gross disposable income created due to higher than average salary in GBSCs in 2020 would cover from 0.44 % to 2.24 % of total annual household expenditures in CEE countries and from 2.51 % to 223.71 % of selected household expenditures in 2019 (food and non-alcoholic beverages expenditure, electricity, gas and other fuels expenditure, recreation and culture expenditure, education expenditure). Panel data analysis also confirmed the positive GBSCs impact on the available spending/consumption macroeconomic indicator included into the research: final consumption expenditure of households, current prices, million EUR.

- *GBSCs impact on <u>migration indicators</u>:* migration indicators analysis with available data for selected CEE countries shows that from ~1 % to ~124 % of emigrated nationals re-emigrated to selected CEE countries during years 2012-2019. Also, one-

on-one interview with the head of SEB Global Services Vilnius (Lithuania) shows that around 5 % of employed here in 2019 and 2020 are re-emigrants. Despite the fact that some high re-emigration rates in CEE and Lithuanian business case analysis results can lead to the assumptions that working places created by GBSCs in selected CEE countries could have impact on improving re-emigration rates, the lack of systemized statistics about migration indicators and brain drain complicates the research on evaluation of GBSCs impact on them. Surveyed experts from Lithuania, Poland and Slovakia also agree that it is difficult to parallel migration indicators and brain drain with GBSCs due to lack of researches/statistics on the employment of re-emigrated nationals. Panel data analysis confirms insignificant negative GBSCs impact on the available migration indicator included into the research: reemigration rate (more nationals reemigrate due to working places created by GBSCs). However, these not too significant results can be affected by the limitation of scarcity of statistical data.

- *Main outcomes of the research, GBSCs impact on <u>life quality indicators</u>:* GBSCs in CEE countries show the macroeconomic gain including, but not limited to the following life quality indicators: income and respectable working places/conditions in GBSCs, personal development and learning in international environment opportunities, attractive motivational packages, health/family/respect-oriented culture and values, respectable compensation for work, diversity and inclusion, sustainability emphasized in GBSCs. According to the author, usually life quality indicators are underestimated when analyzing macroeconomic GBSCs outcomes. Life quality improvement is an important gain, which is intangible and difficult to measure. Experts survey results show that life quality indicator is one of the most important in GBSCs context. Therefore, standard econometric models have to be complemented with the models explaining life quality indicators, especially taking into account the interconnectedness between life quality indicators and other macroeconomic indicators analyzed in this work. Life quality prospective was also revealed in this dissertation. No accessible statistical data for panel data analysis was found.

- *GBSCs impact on <u>cross-sectorial growth indicators</u>:* the scope of expansion of GBSCs and their way of running business let other secondary market players to expand their businesses, too, which is seen as cross-sectorial development. Lack of currently accessible information about all GBSCs in selected CEE countries complicates further research and enables partial cross-sectorial growth evaluation researches according to general publicly accessible information or information revealed by the experts. For ins-

tance, the analysis of real estate market growth impacted by GBSCs shows that GBSCs are seen as one of the main drivers of the demand for the office space in CEE. Due to scarcity of GBSCs statistics, there is limited possibility to evaluate GBSCs impact on the transportation, tourism, accommodation and leisure time, education services and conferences, postal services, medical services, technical support and other secondary markets. However, interview with the head of SEB Global Services Vilnius and personal author's experience show that the number of business trips, team activities, sport events, entertainment for colleagues from other countries, personal development activities, learning, language courses etc. in GBSCs have positive impact on the mentioned secondary services markets. No accessible statistical data for panel data analysis was found.

- *GBSCs impact on <u>regional development indicators</u>:* according to the GBSCs related researches and according to the opinion of the experts from Lithuania, Poland and Slovakia surveyed by the author of this dissertation, GBSCs impact on regional development is questioned. From one side, emergence and development of GBSCs in selected CEE countries have positive influence on regional development and provides opportunities to cities other than capital and enhances migration to less developed regions, but from another side, in some cases the disproportion between bigger and smaller cities is even growing due to GBSCs. Location quotient estimated in this dissertation also shows that for instance non-capital cities are GBSCs specialized (have the highest GBSCs concentration) in Poland, but Lithuanian example shows that only capital Vilnius can be named as GBSCs specialized city in the country. No accessible statistical data for panel data analysis was found.

- *GBSCs impact on <u>GDP related indicators</u>:* there is a clear positive GBSCs impact on GDP related indicators (panel data analaysis proves that), however, GDP components such as labor market indicators, spending/consumption indicators and cross-sectorial growth indicators are treated as better reflection of GBSCs impact on macroeconomic indicators in selected CEE countries than GDP itself (all the research methods including panel data analysis has the same conclusion).

10. Evaluation of multiplier effect of GBSCs impact on macroeconomic indicators shows the following: the presented by author model for evaluation of GBSCs impact on macroeconomic indicators, the analysis of the direct, indirect, induced and dynamic GBSCs macroeconomic outcome multiplier effects and SEB Global Services Vilnius multiplier effect manifestation business case analysis show that there is close intercon-

nectedness between all the 7 macroeconomic indicators groups distinguished in this dissertation and paralleled with GBSCs. GBSCs macroeconomic outcomes multiplier effect aspects are seen as the distinctive feature of the dissertation research. Author of this dissertation would like to emphasize that the GBSCs macroeconomic outcomes multiplier effect analysis is better contributing to the improvement of exploration level of evaluation of GBSCs macroeconomic outcomes than it is done when each macroeconomic indicator is solely paralleled with GBSCs.

Recommendations:

1. Statistical data gathering legitimation recommendation. Since the main dissertation research limitation, which limited the possibility to reveal quantitative expression of macroeconomic outcomes stimulated by GBSCs, is the scarcity of the statistical data and the inhomogeneity of the existing statistical data, author of this dissertation would firstly reccomend to ensure this data legitimation on the national level. Currently, different CEE countries use different methods to gather and publish GBSCs related statistical data and such statistical data is difficult to compare or include into quantitative research methods. Czech Republic, Poland and Romania use the services of experts – ABSL agency – for annual GBSCs sector reports mainly based on the surveys of the GBSCs, which agreed to participate in the surveys. These reports are more or less homogeneous, are of the similar structure and evaluate the similar economic indicators. Poland is additionally collecting GBSCs related data with the help of such organizations as Polish Investment and Trade Agency (statistics concerning projects supported by this agency) and Pro Progressio foundation, which mainly focuses on different regions/ cities business support services market. Hungary's GBSCs sector statistics and other data reflect in the annual publications of Hungarian investment promotion agency (HIPA), which aim is more to promote the country as the destination for establishment of new GBSCs rather than to concentrate on the evaluation of macroeconomic outcomes of the existing GBSCs. Lithuania's GBSCs sector statistics and other data reflect in the annual GBSCs reports prepared by Lithuanian investment promotion agency Invest Lithuania. The data for Lithuanian GBSCs reports is collected annually via GBSCs survey. The reports include comprehensive GBSCs sector analysis with the emphasis both on macroeconomic GBSCs outcomes of the currently established GBSCs and promotion of the country as the destination for GBSCs. Slovakia has established AmCham

Business Service Center Forum (BSCF), which is the umbrella sectoral association representing over 90 % of all working places in the sector in Slovakia and presenting the annual reports on GBSCs related topics. BSCF has own statistical database, which is reviewed annually, which is the primary source of all data in the GBSCs sector. Different organizations have different methodologies to represent GBSCs data and usually the gathering of these data is not legitimated in the CEE countries, which means that the quality of data gathering is mainly depend on these organizations efforts to collect them by including as much GBSCs to surveys/database as possible. In author's opinion, current GBSCs data inhomogeneity and incomparability problem could be solved by implementing such legitimate measures:

- CEE countries could use national statistics offices to collect GBSCs statistical data. First of all, it would let to categorize GBSCs as separate sector. Secondly, such compulsory data as number of GBSCs in the country and in each city, number of employees in GBSCs, average salaries in GBSCs, number of re-emigrated nationals employed in GBSCs and other would facilitate the evaluation of GBSCs macroeconomic outcomes and GBSCs sector comparative weight in the economy.

- CEE countries could agree on the main economic indicators, the data on which should be gathered and published in a homogenous way. There is a need of public and GBSCs partnership or even legitimation efforts to collect the data important for the countries economies and further GBSCs investment promotion strategies.

2. GBSCs and educational institutions partnership recommendation. Dissertation research revealed the employment restructuring as one of the important macroeconomic outcomes stimulated by GBSCs. Since GBSCs sector in CEE countries is maturing and gravitating towards a long-term sustainable employment growth rate, there is a need in GBSCs partnership with educational institutions. GBSCs could communicate the demand for current and future competencies needs in the GBSCs and educational institutions could adapt new education programs according to these needs. Also, different students internships, career days and other initiatives could be supported by the GBSCs and educational institutions partnership. These are important aspects for the smooth running of countries labor market, integration of youth with the appropriate education into the constantly changing labor market.

3. Creation of the national GBSCs liaison body recommendation. Current CEE countries practice show that some of the countries tend to commit GBSCs sector analysis functions to institutions, organisations, associations, business forums or other forms

(Czech Republic, Poland, Romania, Slovakia). Other CEE countries are performing GBSCs sector analysis through national investment promotion agencies (Hungary, Lithuania). In the author's view, the combination of both expertial work and cooperation with national promotion investment agencies is the most effective. According to the author of this dissertation, Slovakia shows the good example of how GBSCs liaison body could work in other CEE countries. BSCF, which is GBSCs umbrella organization closely cooperating with national investment promotion agency SARIO, shows the advantages of GBSCs liaison body idea. The similar liaison body in other CEE countries could carry out the activities with the aim to promote the development of GBSCs in CEE countries on national level. According to the author of this dissertation, such GBSCs liaison body could perform such roles:

• Coordinate statistical data gathering between different obliged national institutions and CEE regions institutions as well as possibly create own database of topical GBSCs information for GBSCs statistical data analysis.

• Contribute to deeper GBSCs researches according to the national need. This could be done with cooperation with educational institutions or could be the responsibility of the liaison body, which could have researchers team.

• Raise public and potential GBSCs employees awareness of the economic growth opportunities enhanced by GBSCs sector.

• Cooperate on GBSCs related topics with other national institutions (Investment Promotion Agency, Ministry of Economics, Municipalities and other).

• Discuss and initiate incentives, necessary legal amendments to improve GBSCs business environment and enhance further GBSCs growth.

• Organize GBSCs related seminars, conferences, presentations for national institutions, GBSCs representatives and employees, educational institutions, nationals and other interested parties to promote meaningful cooperation and understanding of GBSCs value.

• Foster communication with educational institutions on the current and future competencies, learnings needed in the GBSCs labor market.

• Focus on GBSCs regional development aspects (cooperation with municipalities, identifying the regional development opportunities enhanced by GBSCs establishment and other).

• Participate in international GBSCs sector conferences such as annual CEE Shared Services and Outsourcing Awards and other to notice and act according to

other CEE countries best practice.

- Cooperate with other sectors impacted by GBSCs to enhance the further cross-sectorial growth (for instance, with real estate professionals to support property development growth enhanced by GBSCs and other).

- Other.

According to the author, such GBSCs liaison body could improve the scientific level exporation level of GBSCs (macro)economic outcomes, align country's investment promotion strategy according to these outcomes and look for opportunities how GBSCs can contribute to the fostering of CEE countries economic growth.

REFERENCES

1. ABSL (2011). *Modern business service sector in Małopolska.* Związek Liderów Sektora Usług

2. Biznesowych (ABSL), 2011. Available on the internet: <http://businessinmalopolska.com/public/upload/fck/file/BPO_pdrv_30-08-11.pdf >

3. ABSL (2015). *Business Services in Central & Eastern Europe 2015.* Report prepared by the Association of Business Service Leaders (ABSL) in knowledge partnership and analytical support from McKinsey & Company and in additional cooperation with: Antal, Baker & McKenzie, JLL. Available on the internet:

4. < file:///C:/Users/INspiron1/Downloads/CEE_report_final.pdf>

5. ABSL (2016). *Europe's Business Services Destinations.* Report prepared by ABSL in cooperation with Deloitte, Hays Specialist Recruitment, JLL. McKinsey & Company and in additional cooperation with: Antal, Baker & McKenzie, JLL. Available on the internet: <http://abslreport.com/wp-content/uploads/2017/02/raport_EURO2016_161224_epub_25.02.17.pdf>

6. ABSL (2016, 2017, 2019, 2020). *Business Services Sector in the Czech Republic 2016, 2017, 2019, 2020.* Reports prepared by the Association of Business Service Leaders (ABSL) in cooperation with Grafton, Deloitte, JLL, The Hackett Institute, Colliers International. Personal access.

7. ABSL (2014-2019). *Business Services Sector in Poland 2014-2019.* Reports prepared by the Association of Business Service Leaders (ABSL) in cooperation with EY, JLL, Randstad Polska and Randstad Sourceright. Personal access.

8. ABSL (2018-2020). *Business Services Sector in Romania* 2018-2020. Report prepared by the Association of Business Service Leaders (ABSL) in cooperation with Dale Carnegie, Hays, JLL, KPMG, Skanska.

9. ABSL (2021). Association of Business Service Leaders. Available on the internet: <ABSL - ABSL international>

10. Accenture Federal Services (2015). *High performance outcomes: Government shared services.*

11. Available on the internet:<https://www.accenture.com/t20150929T041550__w__/us-en/_acnmedia/Accenture/Conversion-Assets/DotCom/Documents/Global/PDF/Dualpub_22/Accenture-High-Performance-Outcomes-Government-Shared-Services.pdf>

12. Accenture Research Report (2011). *Trends in Shared Services: Unlocking the Full Potential.* Available on the internet:

13. <http://www.accenture.com/SiteCollectionDocuments/PDF/Accenture-Trends-in-Shared-Services.pdf>

14. Adkins, L. C. (2014). *Using gretl for Principles of Econometrics, 4th Edition, Version 1.041.* Oklahoma State University, April 7, 2014.

15. Aguirre, D., Couto, V., Disher, C., Neilson, G. (1998). *Shared services: Management fad or real value? In A. B. Pasternack & A. J. Viscio (Eds.).* Viewpoint, Booz , Allen & Hamilton, based on the centerless corporation: A new model for transfprming your organization for growth and prosperity. New York, NY: Simon & Schuster.

16. Ali, A., Ali, S., Khan, S.A., Khan, D.M., Abbas, K., Khalil, A. (2019). *Sample Size Issues in Multilevel Logistic Regression Models.* PLoS ONE 14 (11): e0225427. https://doi.org/10.1371/journal.pone.0225427

17. Alper, D., Anbar, A. (2011). *Bank Specific and Macroeconomic Determinants of Commercial Bank Profitability: Empirical Evidence from Turkey.* Business and Economics Research Journal Volume 2, Number 2, 2011. PP. 139-152, ISSN: 1309-2448.

18. Baltagi, B., H. (2006). *Forecasting with Panel Data.* Deutsche Bundesbank Discussion Paper. Series 1: Economic Studies. No 25/2006, 8th Spring Conference.

19. Barkauskaitė, A, Naraškevičiūtė, V. (2016). *Foreign Direct Investment Impact on Economic Indicators of the Baltic Countries.* In: Economics and Business, Volume 28, Issue 1 (Apr 2016), Kaunas University of Technology. DOI: https://doi.org/10.1515/eb-2016-0009, pp. 61-67.

20. BearingPoint GmbH, Frankfurt/Main (2011). Shared Services Industry Specifics and Trends in the European FS Market. Shared Services in Financial Services Survey. Available on the internet: <http://www.bearingpoint.com/en-nl/7-1595/shared-services-industry-specifics-and-trends-in-the-european-fs-market/?&p=610>

21. Bedell, D. (2010). *Shared Value,* Global Finance, Vol. 24, Issue 8, September 2010.

22. Bellak, C., Leibrecht, M., Riedl, A. (2008). *Labour Costs and FDI Flows into Central and Eastern European Countries: A Survey of the Literature and Empirical Evidence.* Structural Change and Economic Dynamics 19 (2008) 17-37.

23. Bergeron, B. (2003). *Essentials Of Shared Services.* John Wiley & Sons, Inc.

24. Biernat-Stawecka, I. (2016). *Centra usług wspólnych jako forma restrukturyzacji*

zatrudnienia. Studia Oeconomica Posnaniensia, Volume 4, No 2, 2016, p. 245-261. ISSN 2300-5254, e-ISSN 2449-9099.

25. Bondarouk, T. (2014). *Shared Services as a New Organizational Form*. Emerald Group Publishing Limited. ISBN: 978-1-78350-535-7. ISSN: 1877:6361 (Series).

26. Borman, M. 2008. *The Design And Success Of Shared Services Centers*. In: *16th European Conferences On Information Systems*, Galway, Ireland.

27. Bureau of Economic Analysis (2018). *Regional Input-Output Modelling System (RIMS II) User's Guide*. U.S. Department of Commerce, 2018. Available on the internet: <https://www.bea.gov/sites/default/files/methodologies/RIMSII_User_Guide.pdf>

28. Čekanavičius, V., Murauskas, G. (2014). *Taikomoji regresinė analizė socialiniuose tyrimuose*. Vilnius: Vilniaus universitetas, 2014 m. 561 p. ISBN 978-609-459-300-0.

29. Chandler, A. D. (1977). *The Visible Hand: The Managerial Revolution in American Business*. Harvard University Press: Cambridge, MA.

30. Casson, M. (1990). *Evolution of Multinational Banks: A Theoretical Perspective*. G. Jones (ed.), Banks as Multinationals (London: Routledge), 14–29.

31. CEE Shared Services and Outsourcing Awards (2020). Annual CEE Shared Services and Outsourcing Awards. Available on the internet: < http://ceeoutsourcingawards.com/ >

32. Chazey Partners (2014). *Coca-Cola Hellenic: 3 Steps from Transactional to Commercial Services. Coca-Cola Hellenic Bottling Company: from Business Case to Implementation.* Available on the internet:

33. <http://www.chazeypartners.com/sites/default/files/CCHCase%20Study.pdf>

34. CIPFA, the Chartered Institute of Public Finance and Accountancy (2006). *Shared Services: The opportunities and issues for public sector organisations.* Available on the internet: <http://www.doeni.gov.uk/lgrt_ss_cipfa_paper-2.pdf>

35. Civinskas, R., Dvorak, J. (2011). *Viešųjų paslaugų teikimo centrų steigimo galimybės Lietuvoje.* In: *Tiltai*. 2011, Nr. 4 (57). p. 77-93. ISSN 1392-3137.

36. Civinskas, R., Laurušonytė, E. (2012). *Viešųjų paslaugų tobulinimas: jungtinių paslaugų centrų steigimas*. In *Journal of Management* 2012, Nr. 1 (20), ISSN 1648-7974.

37. Combes, P. P., Duranton, G., Gobillon, L., Puga, D., Roux, S. (2012). *The Productivity Advantages of Large Cities: Distinguishing Agglomeration From Firm Selec-*

tion. Econometrica, Volume 80, issue 6, pp. 2543-2594, https://doi.org/10.3982/ECTA8442.

38. Combes, P. P., Mayer, T., Thisse J. F. (2011). *The Integration of Regions and Nations*. Book review in Journal of Regional Science, Volume 51, Issue 1, p.p. 214-215, https://doi.org/10.1111/j.1467-9787.2010.00711_13.x.

39. Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods- approaches (3rd ed.)*. Thousand Oaks, CA: Sage Publications, Inc.

40. Cushman & Wakefield (2015). *Where in the World? Business Process Outsourcing and shared Service Location Index*. Available on the internet:

41. <http://www.cushmanwakefield.com/~/media/global-reports/Where%20In%20The%20World_Business%20Process%20Outsourcing_low_2015.pdf>

42. Cushman & Wakefield (2019). *Office Market Snapshot* for Czech Republic, Hungary, Poland, Romania and Slovakia. Third quarter, 2019. Available on the internet:

43. < file:///C:/Users/INspiron1/Downloads/czechrep_off_3q19.pdf>

44. < file:///C:/Users/INspiron1/Downloads/hungary_off_3q19%20(1).pdf>

45. < file:///C:/Users/INspiron1/Downloads/poland_off_3q19%20(1).pdf>

46. < file:///C:/Users/INspiron1/Downloads/romania_off_3q19%20(1).pdf>

47. < file:///C:/Users/INspiron1/Downloads/slovakia_off_3q19%20(1).pdf>

48. Cushman & Wakefield (2020). *Central Europe Office Marketbeat* for Czech Republic, Hungary, Poland, Romania and Slovakia. Third quarter 2020. Available on the internet:

49. < CEE_Marketbeat_Office_2020_Q3.pdf>

50. Czech Statistical Office (2021). Wages and Labour. Available on the internet: < https://www.czso.cz/csu/czso/labour_and_earnings_ekon>

51. Čičak, K., Sorić, P. (2015). *The Interrelationship of FDI and GDP in European Transition Countries*. International Journal of Management Science and Business Administration, Vol 1 (2015), 4 March, pp. 41-58.

52. Deloitte (2011). Shared Services Handbook. A Practical Guide to Implementing Shared Services. Available on the internet: <https://www2.deloitte.com/content/dam/Deloitte/dk/Documents/finance/SSC-Handbook-%20Hit-the-Road.pdf >

53. Deloitte (2015a). *2015 Global Shared Services Survey: Executive summary*. Available on the internet: <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Process-and-Operations/gx-2015-ss-survey-interactive-030415.pdf>

54. Deloitte (2015b). *Business Services Outlook 2015*. A Deloitte Insight Report. Available on the internet: <http://www2.deloitte.com/content/dam/Deloitte/uk/Documents/bps/deloitte-uk-business-services-outolook-2015.pdf>

55. Deloitte (2016a). 2016 Global Outsourcing Survey: Outsourcing Accelerates Forward. Deloitte Consulting LLP, June 2016. Available on the internet: <https://www2.deloitte.com/us/en/pages/operations/articles/global-outsourcing-survey.html#>

56. Deloitte (2016b). Global Business Services Performance Improvement: from Cost Center to Competitive Advantage. Available on the internet: <https://www2.deloitte.com/content/dam/Deloitte/be/Documents/finance-transformation/FT_GBS_Reader.pdf >

57. Deloitte (2017). Global Business Services. Performance Improvement: From Cost Center to Competitive Advantage. Deloitte Consulting reader. Available on the internet: <https://www2.deloitte.com/content/dam/Deloitte/us/Documents/process-and-operations/us-operations-global-business-services.pdf>

58. Demographic Yearbook of Poland (2013-2020). Central Statistical Office, Warsaw. Available on the internet: <Główny Urząd Statystyczny / Obszary tematyczne / Roczniki statystyczne / Roczniki Statystyczne / Rocznik Demograficzny 2013>

59. Demographic Yearbook of the Czech Republik (2012-2019). Czech Statistical Office, Prague. Available on the internet: < Search Results - Publikace | CZSO >

60. Derven, M., Gundling, E., Leri, P. (2014). *Leveraging Diversity & Inclusion for a Global Economy*. Alexandria, VA: American Society for Training & Development, 2014. ISBN 9781562869533.

61. Deutsche Bank (2014). *Recent trends in FDI activity in Europe. Regaining lost ground to accelerate growth.* Research Briefing, European integration, 2014 August 21st. Available on the internet:

62. <https://www.dbresearch.de/PROD/DBR_INTERNET_EN-PROD/PROD0000000000340841/Recent+trends+in+FDI+activity+in+Europe%3A+Regaining.pdf>

63. Deutsche Bank (2019). Mapping the World's Prices 2019. Available on the internet: < https://www.dbresearch.com/PROD/RPS_EN-PROD/PROD0000000000494405/Mapping_the_world%27s_prices_2019.pdf >

64. Domański, B., Gwosdz, K. (2010). *Multiplier effects in local and regional development*. Quaestiones Geographicae 29(2), Adam Mickiewicz University Press,

Poznań 2010, p. 27-37, 1 Fig. ISBN 978-83-232-2168-5. ISSN 0137-477X. DOI 10.2478/v10117-010-0012-7.

65. Dorożyński, T. (2020). *Incentives to Attract FDI: Evidence From the Łódź Province*. Vol. First edition, ISBN 9788382202397. Łódź University Press, 2020.

66. Drucker, P. (2006). *The practice of management*, 1st Edition, Harper Collins Publishers.

67. Dubinas, V., Smilga, E. (2009). *Katalizatoriaus koncepcijos panaudojimas, didinant strateginio valdymo efektyvumą Lietuvoje*. Organizacijų vadyba: sisteminiai tyrimai Nr. 50.

68. Dubinas, V., Smilga, E. (2010). *Paslaugų sektoriaus plėtros galimybės Lietuvoje*. Organizacijų vadyba: sisteminiai tyrimai: 2010.54. ISSN 1392-1142.

69. Dunning, J. H. (2000). *The eclectic paradigm as an envelope for economic and business theories of MNE activity*. International Business Review 9, pp. 163–190.

70. Dunning, J. H., Lundan, S. M. (2008). *Institutions and the OLI Paradigm of the Multinational Enterprise.* Asia Pacific Journal of Management, Vol. 25, No. 4, 2008.

71. Dunning J., H., McQueen, M. (1982). *The Eclectic Theory of the Multinational Enterprise and the International Hotel Industry*. Rugman A. (ed.), New Theories of Multinational Enterprise (New York: St. Martin's press).

72. Economic Development Research Group (1997). *Measuring Economic Impacts of Projects and Programs*. April 1997, Economic Development Research Group, 10 High Street, Suite 620, Boston, MA 02110. Available on the internet: < http://edr-group.com/pdf/econ-impact-primer.pdf >

73. Eurofound (2012). *Labour mobility within the EU: The impact of return migration*. European Foundation for the Improvement of Living and Working Conditions, Dublin, Ireland.

74. European Commission (2014a). *High-Level Group on Business Services*. Ref. Ares(2014)1095851 - 08/04/2014. Available on the internet: <file:///C:/Users/INspiron1/Downloads/A4_HLGBS_report_2014_web%20(2).pdf>

75. European Commission (2014b). *Innovation Union Competitiveness report*. From January 2014, Unit C6 – Economic analysis and indicators, Unit A4: Analysis and monitoring of national policies.

76. Eurostat database statistics 2014-2021. Available on the internet: < http://ec.europa.eu/eurostat/data/database>

77. Fersht, P., Filippone, T., Aird, Ch., Sappenfield, D. (2011). *The Evolution of Global*

Business Services: Enhancing the Benefits of Shared Services and Outsourcing. HfS research. Collaborative sourcing intelligence. Available on the internet:

78. <https://www.pwc.com/us/en/outsourcing-shared-services-centers/assets/hfs-report-pwc-developing-framework-global-services.pdf>

79. Filho, D. B.F., Paranhos, R., da Rocha, E. C., Batista, M., da Silva Jr., J. A., Santos, M. L. W. D., Marino, J. G. (2013). *When is Statistical Significance not Significant?* Brazilian Political Science Review, 2013 7 (1), pp. 31 – 55.

80. Gereffi, G., Fernandez-Stark, K. (2010). *The Offshore Services Global Value Chain*. Center on Globalization, Governance & Competitiveness, Duke University, March, Durham, NC.

81. Gopinath, M., Echeverria, R. (2004). *Does Economic Development Impact the Foreign Direct Investment-Trade Relationship? A Gravity-Model Approach*. American Journal of Agricultural Economics 86 (3), pp. 782-787, doi: 10.1111/j.0002-9092.2004.00625.x.

82. Gospel, H., Sako, M. (2010). *The unbundling of corporate functions: the evolution of shared services and outsourcing in human resource management*. In: *Industrial and Corporate Change*, Volume 19, Number 5, pp. 1367–1396, doi:10.1093/icc/dtq002

83. Gruževskis, B., Pocius, A., Bankietienė, V. (2009). *Lietuvos darbo rinkos statistikos raida*. Lithuanian Journal of Statistics, Vol 48, No 1 (2009). ISSN 1392-642X, eISSN 2029-7262.

84. Eichengreen, B., Gupta, P. (2012). *The two waves of service sector growth*. Working Paper Series No. 14968, National Bureau of Economic Research (NBER), Cambridge, MA, May.

85. Hedstrom, G. S. (2018). *Sustainability : What It Is and How to Measure It*. Boston: De Gruyter, 2018. ISBN 9781547416608. P. 5.

86. Herbert, R. and Paraskevas, C. (2012). *The Business Services Sector: Calculating the Market Size*, Lloyds Bank.

87. HIPA, HOA (2016-2019). *Business Services Centres Hungary (2016-2019)*. Reports prepared by Hungarian Investment Promotion Agency HIPA and Hungarian Service and Outsourcing Association HOA. Personal access.

88. HOA, CUB (2020). *Business Services Sector Hungary 2020*. Report prepared by Hungarian Service and Outsourcing Association HOA and Corvinus University of Budapest. Personal access.

89. Huawei Investment & Holding Co., Ltd. (2014). *Building a Better Connected*

World. 2014 Annual Report. Available on the internet:

90. <file:///C:/Users/INspiron1/Downloads/huawei_annual_report_2014_en.pdf>

91. Huber, B., Danino, S. (2012). *Global Business Services: Taking Business Support Functions to the Next Level.* Information Services Group, Stamford, CT.

92. Humanicki, M., Olszewski, K. (2020). *The Heterogeneous Nature of FDI in Central and Eastern Europe. Impact of the Entry Mode on the Host Country's Economic Growth.* Finance a úvěr-Czech Journal of Economics and Finance, 70, 2020 no. 6. P. 541-565.

93. Hungarian Central Statistical Office (2017). Gross average earnings. Available on the internet: < http://www.ksh.hu/docs/hun/xftp/gyor/ker/ker1707.html>

94. Hungarian Central Statistical Office (2017). Migration. Available on the internet: <https://www.ksh.hu/docs/eng/xstadat/xstadat_annual/i_wnvn004.html>

95. Hurlin, Ch. (2010). *What Would Nelson and Plosser Find Had They Used Panel Unit Root Tests?* Applied Economics, Volume 42, 2010 – Issue 12. P. 1515-1531. DOI: 10.1080/00036840701721539.

96. Hymer, S., H. (1960). *The International Operations of National Firms, a Study of Direct Foreign Investment.* Doctoral dissertation, Massachusetts Institute of Technology, Department of Economics.

97. Iacob, S., E., Mieila, M., Stefan, M., Petrariu, R. (2019). *Significant Interdependencies of the Services Sector in the Romanian Economy: an Analytical Examination.* Economic Computation and Economic Cybernetics Studies and Research, Issue 4/2019; Vol. 53. P. 143-158.

98. IBM Global Process Services (2011). *Today's shared services operating models: The engine behind enterprise transformation Leveraging the power of globally integrated business services.* Thought Leadership White Paper, December 2011. Available on the internet: <http://www.ciosummits.com/media/solution_spotlight/IBM_SharedServices_Whitepaper.PDF>

99. International Monetary Fund Staff Discussion Note (2016). *Emigration and Its Economic Impact on Eastern Europe.* SDN 16/07. Available on the internet: <https://www.imf.org/external/pubs/ft/sdn/2016/sdn1607.pdf>

100. Invest Lithuania (2014). *Tiesioginės užsienio investicijos Lietuvoje: tendencijos ir perspektyvos.* Available on the internet: < http://www.investlithuania.com/wp-content/uploads/2015/02/2014-02-25-TUI-LIETUVOJE-FINAL-FINAL.pdf>

101. Invest Lithuania (2015a). *Paslaugų centrai Lietuvoje: apžvalga.* Available on the in-

ternet: < http://www.investlithuania.com/wp-content/uploads/2015/06/SSC-sek-toriaus-apzvalga.pdf>

102. Invest Lithuania (2015b). *Invest Lithuania Market Research: Shared Services and Business Services survey.* Available on the internet: <http://www.investlithuania.com/wp-content/uploads/2015/02/SSC-Business-Services-survey.pdf>

103. Invest Lithuania (2016). Website of Invest Lithuania investment promotion agency. Available on the internet: < http://www.investlithuania.com/lt/ >

104. Invest Lithuania (2016-2020). *Lithuania's Business Services Report 2016-2020.* Reports prepared by national investment promotion agency Invest Lithuania. Personal access.

105. Invest Romania (2018). *Romania's Business Service Sector IT&C, SSC & BPO, 2018.* Available on the internet: <http://investromania.gov.ro/web/wp-content/uploads/2018/10/InvestRomania-ITC_BPO-SSC_EN_.pdf, Slide 1 (gov.ro) >.

106. Invest Romania (2019). *Doing Business: Key Sectors.* Available on the internet: < IT&C | Invest Romania (gov.ro) >

107. Invest Romania (2020). *Romania's Business Service Sector IT&C, SSC & BPO, 2020.* Available on the internet: < Slide 1 (gov.ro) >.

108. Janssen, M., Joha, A. (2006). *Motives For Establishing Shared Service Centers In Public Administrations.* In: *International Journal Of Information Management* (26), pp. 102-115.

109. Jenkins, D.G, Quintana-Ascencio, P.F. (2020). *A Solution to Minimum Sample Size for Regressions.* PLoS ONE 15(2): e0229345. https://doi.org/10.1371/journal.pone.0229345

110. Jensen, J. B. (2009). *Globalization and Business Services: A Growth Opportunity?* The Georgetown Center for Business & Public Policy, Washington, DC, November.

111. Jervis, M. G., Drake, M. A. (2014). *The Use of Qualitative Research Methods in Quantitative Science: a Review.* Journal of Sensory Studies ISSN 0887-8250, doi:10.1111/joss.12101. P. 234-247.

112. Fersht, P., Brown, D. J. (2014). *Executive report: The State of Services & Outsourcing in 2014.* HfS Research in Conjunction with KPMG. Available on the internet: <https://www.kpmg-institutes.com/content/dam/kpmg/sharedservicesoutsourcinginstitute/pdf/2014/state-of-outsourcing-2014-exec-findings-hfs.pdf>

113. Kagelmann, U. (2001). *Shared Services as Alternative Organisations Form.* Am

Beispiel der Finanzfunktion im multinationalen Konzern, 1st Edition, Deutscher Universitätsverlag.

114. Kahanec, M., Zimmermann, K. F. (2016). *Labor Migration, EU Enlargement, and the Great Recession*. Springer-Verlag Berlin Heidelberg, 2016. ISBN 978-3-662-45319-3 (eBook). DOI 10.1007/978/-3-662-45320-9.

115. Kalašinskaitė, K. (2009). "Tiesioginių užsienio investicijų poveikis ekonomikos plėtrai Lietuvos ir kitų Baltijos šalių pavyzdžiu". Doctoral dissertation, Vilnius Gedimino Technical University, 2009.

116. Keith, B., Vitasek, K., Manrodt, K., Kling, J. (2016). *Strategic Sourcing in the Economy. Harnessing the Potential of Sourcing Business Models for Modern Procurement.* Palgrave Macmillan, ISBN: 978-1-349-57329-5.

117. Kienast, K., Rudy, R. (2015). *Cultural Analytics: Assessing Readiness for Shared Services*. Booz Allen Hamilton, Inc. C.02.047.15

118. Kisswani, K., M., Kein, A., Shetty, Sh., T. (2015). *The Impact of FDI Inflows on Real GDP in Estonia: Evidence from a Cointegration Approach and Causality Test*. The Journal of Developing Areas, Volume 49, Number 4, Fall 2015, pp. 25-40. Tennessee State University College of Business, DOI: 10.1353/jda.2015.0127.

119. Knol, A., Janssen, M., Sol, H. (2014). A taxonomy of management challenges for developing shared services arrangements. European Management Journal (2014) 32, 91– 103.

120. KPMG (2015a). *The Stories Behind the Numbers: Research on shared services and developments in Central & Eastern Europe*. Available on the internet: <http://www.kpmg-institutes.com/institutes/shared-services-outsourcing-institute/articles/2015/02/stories-behind-numbers-sso-trends-cee.html>

121. KPMG (2015b). *Poland as the destination for Business Services Centers.* Available on the internet: < file:///C:/Users/INspiron1/Desktop/doktorantura/KPMG-Poland-as-the-destination-for-SSC%202015.pdf >

122. KPMG (2019). *Insights on Labor Related Taxes in Poland.* Available on the internet: <https://home.kpmg/xx/en/home/insights/2011/12/poland-other-taxes-levies.html>, <https://home.kpmg/xx/en/home/insights/2011/12/poland-income-tax.html>

123. Kroll, K.M. (2005). *Sharing the Wealth*, Industry Week, October 2005, pp. 27-30.

124. Kuzior, A., Sobotka, B. (2019). *Key Competencies in the Modern Business Services Sector*. Organization & Management Quarterly. 2019, Vol. 46 Issue 2, p63-74. 12p.

DOI: 10.29119/1899-6116.2019.46.5.

125. Laskienė, D., Pekarskienė, I. (2011). *Tiesioginių užsienio investicijų poveikis investicijas priimančios šalies darbo produktyvumui.* Ekonomika ir vadyba: 2011.16. SSN 1822-6515.

126. Mamica, Ł. (2020). *Outsourcing in European Emerging Economies. Territorial Embeddedness and Global Business Services.* Routledge, 2020, London. DOI: 10.4324/9781003018889, eBook ISBN 9781003018889.

127. Marciniak, R. (2013a). *Measuring Service Satisfaction in Shared Service Organizations.* Procedia - Social and Behavioral Sciences 81 (2013) 217 – 223.

128. Marciniak, R. (2013b). *New Framework About The Differences Between Shared Service and Outsourcing Models.* International Research Institute sro, Komárno, Slovakia, 2013. Current Issues in Some Disciplines, ISBN 978-80-89691-01-2, 37-44.

129. Marciniak, R. (2014). *Global Shared Service Trend in the Central and Eastern European Markets.* Entrepreneurial Business and Economics Review, January 2014. DOI: 10.15678/EBER.2014.020306

130. Martin, R., Radu, D. (2009). *Return Migration: The Experience of Eastern Europe.* Paper presented at the XXIV National Conference of Labour Economics at the Italian Association of Labour Economists, Sassari.

131. Maskell, P., Malmberg, A. (1999). *The Competitiveness of Firms and Regions "Ubiquitification" and the Importance of Localized Learning.* European Urban and Regional Studies 6 (1), pp. 9-25, doi: 10.1177/096977649900600102.

132. McIvor, R., McCracken, M., McHug M. (2011). *Creating outsourced shared services arrangements: Lessons from the public sector.* In: *European Management Journal*, Volume 29, Issue 6, December 2011, pp. 448–461. doi:10.1016/j.emj.2011.06.001

133. McKinsey Global Institute (2013). *A new dawn: Reigniting growth in Central and Eastern Europe.* McKinsey Global Institute, December 2013. Available on the internet: < file:///C:/Users/INspiron1/Downloads/MGI_CEE_A_new_dawn_Executive_summary_Dec_2013.pdf >

134. Micek, G., Działek, J., Górecki, J. (2010). *Centra usług w Krakowie i ich relacje z otoczeniem lokalnym.* Wydawnictwo Uniwersytetu Jagiellońskiego, ISBN: 978-83-233-2872-8.

135. Micek, G., Działek, J., Górecki, J. (2011). *The Discourse and Realities of Offshore Business Services to Krakow.* European Planning Studies Vol. 19, No. 9, September 2011

136. Micek, G. (2011). *Estimating Multiplier Effects on the Local Scale.* ACTA UNIVERSITATIS LODZIENSIS. FOLIA OECONOMICA 252, 2011.

137. Miles, T. (2011). *Applying Shared Services to Public Sector Property and Facilities Asset Management.* In: *IET and IAM Asset Management Conference* (2011), pp. 1–5.

138. Miller, C. (1999). A look at European Shared Service Centers, Internal Auditor – October 1999, pp. 44-48.

139. Milewska, A. (2018). Centra usług wspólnych jako podmiot racjonalizujący koszty w organizacji – skala i zakres działania w Polsce. Polityki Europejskie, Finanse i Marketing 20 (69) 2018, pp. 127-135, doi: 10.22630/PEFIM.2018.20.69.34

140. Mroczek, A. (2019). The Business Service Sector in India, Ireland and Poland. A Comparative Analysis. Comparative Economic Research. Central and Eastern Europe. Volume 22, Number 2, 2019, http://doi.org/10.2478/cer-2019-0018. P. 160-172.

141. Mucuk, M., Demirsel, T. (2013). The Effect Of Foreign Direct Investments On Unemployment: Evidence From Panel Data For Seven Developing Countries. Journal of Business Economics and Finance. ISSN: 2146-7943.

142. NASA (2015). Website of National Aeronautics and Space Administration (USA). Available on the internet: <https://www.nssc.nasa.gov/home>

143. Neely, A.D., Benedittini, O., Visnjic, I. (2011). The Servitization of Manufacturing: Further Evidence. In: 18th European Operations Management Association Conference, Cambridge.

144. OECD (2001). Glossary of Statistical Terms: Central and Eastern European Countries. Available on the internet: <OECD Glossary of Statistical Terms - Central and Eastern European Countries (CEECs) Definition>

145. OECD (2012). *National Accounts. The Various Measures of the Saving Rate and their Interpretation.* OECD meeting of national accounts experts, Château de la Muette, Paris. 8 – 11 October 2002.

146. OECD (2015). *Entrepreneurship at a Glance 2015.* OECD publishing, Paris. ISSN 2226-694 (online).

147. OECD (2021). Employment data according to activity. Available on the internet: <https://data.oecd.org/emp/employment-by-activity.htm>

148. Oshri, I., Kotlarsky, J., Willcocks, L. P. (2011). *The Handbook of Global Outsourcing and Offshoring.* Second edition, Palgrave Macmillan. ISBN: 978-0-230-29352-6.

149. Paagman, A. (2015). *An integrative literature review and empirical validation of motives for introducing shared services in government organizations.* In: *International Journal of Information Management*, Volume 35, Issue 1, February 2015, pp. 110–123.

150. Pérez M. N. (2008). *Service Center Organisation – Neue Formen der Steuerung von internen Dienstleistungen unter besonderer Berücksichtigung von Shared Services.* 1st Edition, Gabler – GWV Fachverlage GmbH.

151. Piatanesi, B., Arauzo-Carod, J. M. (2019). *Backshoring and Nearshoring: An Overview.* Growth & Change, [s. l.], v. 50, n. 3, 2019. DOI 10.1111/grow.12316. P. 806-823.

152. Plaisier, N., Linders, G. and Canton, E. (2012). *Study on Business-Related Services*, Ecorys.

153. Puga, D. (2010). *The Magnitude and Causes of Agglomeration Economies.* Journal of Regional Science, Volume 50, Issue 1, pp. 203-2019, https://doi.org/10.1111/j.1467-9787.2009.00657.x.

154. Pukelienė, V., Starkauskienė, V. (2011). *Quality of Life: Factors Determining its Measurement Complexity.* Inzinerine Ekonomika-Engineering Economics, 2011, 22(2), 147-156.

155. PwC (2014). *Shared service Centers.* Study from 7th February 2014. Personal access to information.

156. PwC Central and Eastern Europe (CEE) by By Paul Stewart, Managing Partner (2015). *Shared service Centers in Central and Eastern Europe - Moving up the value curve.* Article dated 24th June 2015.

157. Redman, T., Snape, E., Wass, J., Hamilton, P. (2007). *Evaluating the human resource shared services model: Evidence from the NHS.* In: *The International Journal of Human Resource Management*, 18 (8) (2007), pp. 1486–1506.

158. Re-Turn (2012). *Comparative Report on Re-Migration Trends in Central Europe.* Re-Turn Consortium, Leibniz Institute for Regional Geography, Leipzig.

159. Richter, P. C., Brühl, R. (2017). *Shared service center research: A review of the past, present, and future.* European Management Journal 35 (2017) 26-38.

160. Romanian Statistical Yearbook (2016). Available on the internet: <http://www.insse.ro/cms/sites/default/files/field/publicatii/anuar_statistic_al_romaniei_2016_format_carte_0.pdf>

161. Rudzioniene, K., Sakalauskiene, R. (2014). *Shared Service Center Factors and Re-*

turn on Investment. In: *Social Sciences* (1392-0758). 2014, Vol. 83 Issue 1, pp. 55-62.

162. Ruplienė, D., Garšvienė, L. (2008). *Tiesioginių užsienio investicijų įtaka šalies ekonominiam augimui.* Ekonomika ir vadyba: aktualijos ir perspektyvos, nr. 3 (12), p. 262-270.

163. Ruplienė, D. (2013). *Darbo rinkos veiksnių poveikio šalių pritraukiamoms tiesioginėms užsienio investicijoms vertinimas.* Daktaro disertacija, Kaunas, Vytauto Didžiojo universitetas 2013.

164. Russu, C. (2021). *Increase of Tangible and Intangible Fixed Assets in the Manufacturing Industry in Romania under the Impact of Foreign Direct Investment.* Economic Insights – Trends and Challenges, Vol.X(LXXIII), No. 2/2021. P. 1-8.

165. Ruzsa, C., R. (2018). *Chances for the Depressed Central European Regions of the European Union to Develop: Can Shared Service Centres be the Driving Force?* University of Klaipeda, 2018. Regional Formation and Development Studies, Vol 24, No 1 (2018). ISSN: 2351-6542. DOI: http://dx.doi.org/10.15181/rfds.v23i1.1678.

166. SARIO (2017-2021). *Shared Service & Business Process Outsourcing Centers in Slovakia (2017-2021).* Reports prepared by Slovak Investment and Trade Development Agency. Personal access.

167. Sass, M., Gal, Z., Juhasz, B. (2018). *The Impact of FDI on Host Countries: the Analysis of Selected Service Industries in the Visegrad Countries.* Post-Communist Economies 2018, Vol. 30, No. 5, 652–674, https://doi.org/10.1080/14631377.2018.1445332 . P. 652-674.

168. Sauvant, K., P., McAllister, G., Maschek, W., A. (2010). *Foreign direct investments from emerging markets: the challenges ahead.* Palgrave Macmillan, US, 175 Fifth Avenue, New York, NY 10010.

169. Schulman, D. S., Harmer, M. J., Dunleavy, J. R., Lusk, J. S. (1999). *Shared services: Adding value to the business units.* New York, NY: Wiley.

170. Schwarz, G. (2014). *Public shared service centers: a theoretical and empirical analysis of US public sector organizations.* Wiesbaden: Springer Gabler.

171. Seddon, J. (2003). *Freedom from Command and Control: A Better Way to Make the Work Work.* Vanguard Education, Buckingham.

172. Servetkienė, V. (2013). *Gyvenimo kokybės daugiadimensinis vertinimas, identifikuojant kritines sritis.* Daktaro disertacija, socialiniai mokslai, ekonomika, (04S), Vilnius 2013.

173. Shared Services & Outsourcing Network (2015). *2015 Annual State of the Shared Services Industry Report: how prepared are you for 5 mega trends disrupting services delivery?* Personal access to information.

174. Skanska Commercial Development Europe, Colliers International, JLL, ABSL (2015). *CEE Investment Report: CEE cities as the Rising Stars of the European office investment transaction market.* Available on the internet: <http://www.skanska.pl/cdn-1d0f16248a651cb/Global/startpage/Images/Background/Rising%20Stars_print.pdf>

175. Skanska, CBRE, Dentons, Pwc (2018). *CEE Investment Report 2018.* Available on the internet: <https://www.skanska.pl/4a85d5/contentassets/1f013ae567584ca-091591571cd3e9668/cee-investment-report-2018.pdf >

176. Skowroński, M. (2017). *Sektor nowoczesnych usług biznesowych jako nowa branża gospodarki miasta na przykładzie Katowic.* In: Studia Ekonomiczne. Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach, Nr 320, 2017, ISSN 2083-8611, pp. 129-139.

177. Smith, A. (1776). *An Inquiry into the Nature and Causes of the Wealth of Nations.* Edited by S. M. Soares. MetaLibri Digital Library, 29th May 2007.

178. Snijders T. A. B., Bosker R. J. (1999). *Multilevel analysis: An introduction to basic and Advanced multilevel Modelling.* London, Sage, 1999.

179. SSON Analytics, 2017. *Evolution of Central & Eastern Europe Shared Service Centers.* Individual access to Shared Services & Outsourcing Network report on 22 July 2017.

180. Statistical Office of the Slovak Republic (2021). *Average monthly wages in economy of the SR.* Available on the internet: < Average monthly wage of employee in economy of the SR in the 3rd quarter of 2020 (statistics.sk) >

181. Statistical Yearbook of the Slovak Republic (2016-2019). Statistical Office of the Slovak Republic, Bratislava. Available on the internet: < Search center (statistics.sk)>

182. Statistics Lithuania (2021). Website of Lietuvos statistikos departamentas. Available on the internet: < http://www.stat.gov.lt/>

183. Stiglitz, J., Sen. A., Fitoussi, J.P. (2009). *Report of the Commission on the Measurement of Economic Performance and Social Progress.* Paris. Available online from the Commission on the Measurement of Economic Performance and Social Progress: < http://www.stiglitz-sen-fitoussi.fr/en/index.htm >

184. Strikwerda, J. (2014). *Shared Services Centers: From Cost Savings to New Ways Of Value Creation and Business Administration*. New Age International (P) Ltd. ISBN (13) : 978-81-224-2883-4.

185. Ślusarczyk, B. (2017). *Shared Services Centers Development in Central and Eastern Europe: the Examples of Poland and Slovakia*. Economics and Sociology, 10(3), ISSN 2071-789X, doi: 10.14254/2071-789X.2017/10-3/3. P. 46-58.

186. Tamošiūnienė, R., Kislovska, A. (2015). *Shared Services Centers Impact on Organizational Effectiveness*. Management and Engineering'15: XIII international scientific conference : scientific proceedings : Vol. I, June 21-24, 2015, Sozopol, Bulgaria / Technical university - Sofia, University of Versailles. Sofia: Scientific-Technical Union of Mechanical Engineering. ISSN 1310-3946. 2015, Year 23, iss. 10, p. 248-255.

187. The World Bank (2020). National accounts data, and OECD National Accounts data files. Available on the internet: < https://data.worldbank.org/indicator/NV.SRV.TOTL.ZS ; https://data.worldbank.org/indicator/NV.IND.MANF.ZS ; https://data.worldbank.org/indicator/NV.IND.TOTL.ZS >

188. The World Bank (2019). *Doing Business 2020*. Available on the inernet: < https://www.doingbusiness.org/en/doingbusiness >

189. Trąpczyński, P., Puślecki, Ł., Jarosinski, M. (2016). *Competitiveness of CEE Economies and Businesses: Multidisciplinary Perspectives on Challenges and Opportunities*. Springer International Publishing Switzerland 2016. ISBN 978-3-319-39654-5 (eBook), DOI 10.1007/978-3-319-39654-5.

190. Ulbrich, F. (2006). *Improving shared service implementation: Adopting lessons from the BPR movement*. In: *Business Process Management Journal*, 12(2), pp. 195–205.

191. Wagenaar, R. W. (2006). *Governance Of Shared Services Centers In Public Administration: Dilemma's And Trade-Offs*. In: *Proceeding Of The Eighth International Conference On Electric Commerce*, Fredericton, Canada, pp. 354-363.

192. Wang, Sh. (2015). Shared Services Management: Critical Factors. In: *International Journal of Information Systems in the Service Sector*, 7(2), 37-53, April-June 2015.

193. Wenderoth, M., H. (2013). *Four-Phase-Model for the Implementation of Shared Services*. Doctoral dissertation, University of PÉCS, Faculty of Business and Economics.

194. Williamson, O. E. (2009). Nobel Prize Lecture – *Transaction Cost Economics: The Natural Progression*. Nobel Foundation.

195. Wirtz, J., Tuzovic, S., Ehret, M. (2015). *Global Business Services: Increasing Specialization and Integration of the World Economy as Drivers of Economic Growth*. Journal of Service Management, Vol. 26 No. 4, 2015, pp. 565-587. Emerald Group Publishing Limited 1757-5818, DOI 10.1108/JOSM-01-2015-0024.

196. World Development Report (2009). *Reshaping Economic Geography*. The International Bank for Reconstruction and Development / The World Bank. 1818 H Street NW, Washington DC 20433. DOI: 10.1596/978-0-8213-7607-2

197. World Investment Report (2015). *Reforming International Investment Governance*. UNCTAD, Unated Nations Publication, 2015. ISBN 978-92-1-112891-8, eISBN 978-92-1-057403-7.

198. World Investment Report (2016). *Investor Nationality: Policy Challenges*. UNCTAD, Unated Nations Publication, 2016. ISBN 978-92-1-112902-1, eISBN 978-92-1-058162-2.

199. World Investment Report (2017). *Investment and the Digital Economy*. UNCTAD, Unated Nations Publication, 2017. ISBN 978-92-1-112911-3, eISBN 978-92-1-060703-2.

200. Zenasni, S., Benhabib, N. (2013). *Foreign Direct Investment, Financial Integration, and Growth: Panel Data Analysis for North African Countries.* The 12th Annual GEP Postgraduate Conference 2013, University of Nottingham, United Kingdom, 25th and 26th March, 2013.

APPENDICES

Appendix 1. *Examples of Successful GBSCs Worldwide Implementations*

Organization and legal status	GBSCs implementation impact on performance indicators of organization
NASA Shared Services Center (NSSC) **public-private**	It is innovative public-private partnership between the National Aeronautics and Space Administration (NASA), and a service provider, Computer Sciences Corporation (CSC). NASA realized certain transactional activities and certain highly specialized activities in financial management, human resources, procurement, and IT would be more effectively and efficiently performed in a consolidated organization. Therefore, NSSC was launched in 2006. In addition to achieving standardized business and specialty services that were more consistent, more timely, and of higher quality, NASA also achieved a substantial cost savings, estimated at $6.6 million per year after completion of a 3-year transition period.
Coca-Cola Hellenic Bottling Company (CCHBC) **private**	CCHBC, which is one of the world's largest bottlers and vendors of products of The Coca-Cola Company (and the largest in Europe), implemented GBSCs, which they call Business Services Organization (BSO). They transferred Accounts Payable, Fixed Assets, General Ledger, and Travel & Expense, within Finance – and Personal Administration and Organization Management within HR to BSO in Bulgaria, Sofia. Starting with the most transactional and simple processes and extending to the more complex and these processes, which touch the customer (billing, pricing etc.), company measures the improvements in cost, quality, standardization, and efficiencies, and include the following: 1. peer-to-peer first time match rate: 76% match between Purchase Order, Invoice, and Good Receipt/Service receipt. 2. hit 100% Service Partnership Agreement (delivery on time). 3. low error rate 0.1% (vs. target 0.5%). 4. recruitment process now takes 36 days, much less than pre BSO.

Organization and legal status	GBSCs implementation impact on performance indicators of organization
Huawei **private**	Huawei has continued to improve the capabilities of the number of established GBSCs around the world. GBSCs in five domains continued to improve their service quality to help the company constantly increase operational efficiency and the following measures have been taken: 1. Introduced multi-level models for finance, with an average of over 8,000 invoices being processed per capita annually. 2. Consolidated two HR GBSCs to provide basic HR services for employees world-wide, with each HR professional serving more than 350 employees. 3. Launched smart robots for 19 IT application systems through the IT GBSCs to provide online services. Processing time was shortened by 36% despite a 31% increase in service volume. 4. Raised the remote delivery rate of the Global Technical Assistance Center from 28% to 54%.
Citi Group **private**	Citi Service Centre in Poland provides the outsourcing services to Citi entities and/or Citi clients across the globe. Citi Service Centre was set up 10 years ago and currently hires almost 4000 employees. Currently the manual payments from 41 countries and the call-backs for 22 countries are provided out of Poland. The process was certified by Internal Audit with the best rating possible. Now Citi Service Centre leads the initiative of reducing the volume of manually initiated payments for EMEA to minimum. By now, for some countries almost 40% reductions against the relevant last year numbers were reached.

Source: *NASA (2015), Chazey Partners (2014), Huawei Investment & Holding Co., Ltd.*

(2014), ABSL (2015)

Appendix 2. *Interconnectedness Between GBSCs and Macroeconomic Indicators*

Macroeconomic indicator	Comment
GDP	Changes in GDP influenced by FDI is one of the mostly analyzed macroeconomic indicators. Although GBSCs is rarely being directly paralleled with GDP, GBSCs is one of the segments of services sector FDI and interconnectedness between FDI and GDP covers GBSCs. However, number of studies have shown that GDP analysis cannot be treated as main measurement of economic conditions. Therefore, this macroeconomic indicator should be complemented or even replaced by other indicators.
Labor productivity	GBSCs is being defined as efficiency-oriented and continuously improving business model. One of the main GBSCs goals is to achieve more with the same or less resources. Elimination of duplications, ineffective process steps, processes alignment and constant looking for improvements in GBSCs help to achieve this goal. Labor productivity can be achieved both in private and public sector by incorporating GBSCs concept (see NASA example in Appendix 1).
Increasing purchasing power and higher consumption of goods and services	Attractive financial motivational packages of GBSCs lead to increasing purchasing power of employed by GBSCs and higher than average consumption of goods and services.
Lower emigration and higher re-emigration	Increasing number of financially and non-financially attractive jobs offered in the country prevent new emigration and increase the level of re-emigration. According to surveys made by Invest Lithuania (2015, 2016), 12 % of employed by GBSCs are repatriates and the largest shares of repatriates employed by surveyed GBSCs is 47 %.

Macroeconomic indicator	Comment
Employment of youth	Typical employee of GBSCs is young specialist. GBSCs can offer attractive working place for experienced and not experienced youth and contributes to lower youth unemployment rate.
Attractive intellectual workplaces and prevention of brain drain	GBSCs offer dignified working conditions, they are usually most most desired employers in CEE countries. Therefore, skilled labor pool is motivated to stay in the country due to both financially and non-financially attractive workplaces, which GBSCs can offer.
Creation of new jobs and increase in job related taxes paid by GBSCs	GBSCs offers new workplaces with higher than average wage. As a result, higher job related taxes are being collected from employer and employee of GBSCs.
Non-job related taxes paid to budget as a result of GBSCs	As a result of higher purchasing power and expenditures of GBSCs itself, GBSCs employees, GBSCs suppliers and other ancillary services providers, significant amount of VAT and other taxes are being paid to host country budget.
Health strengthening and well-being oriented motivational packages offered by GBSCs to employees	Such motivational packages as health insurance, life insurance, gym, sport events and other promote healthy lifestyle of GBSCs employees and ensure better healthcare.
Regional development opportunities	GBSCs location choice depends on various factors, which should be taken into consideration by municipalities, which face difficulties in investment attraction. Cities with potential investment infrastructure, but some gaps, have opportunity to attract more GBSCs after fulfilling the needed requirements from investors.

Macroeconomic indicator	Comment
Economic multiplier effect (economic development of interacting economic operators in primary, secondary and tertiary value chains).	From point of view of GBSCs it is an expression of interconnectedness between different economic (both micro and macro) indicators in different value chains as GBSCs itself, GBSCs's employees, suppliers or other ancillary services providers. In addition to more widely researched microeconomic value for the company and FDI impact on GDP, establishment of GBSCs, which offer competitive wages, additional motivational package and has potential to grow, is generating positive side effects on macroeconomic indicators such as GDP growth, labor productivity, higher consumption of goods and services, re-emigration, attractive workplaces, employment, taxes paid to budget of host country, regional development and other indicators mentioned in this scientific work.

Source: *compiled by author based on literature sources mentioned in the Appendix*

Appendix 3. *Applicability of Research Methods in Existing Researches in GBSCs Macroeconomic Outcomes Measurability*

Researchers	Research topic	Research methods	Applicability in GBSCs macroeconomic outcomes measurability
Iacob et al (2019)	Interdependencies of the **services sector** in the Romanian economy. Evaluation of correlations between: the share of employment in services and the share of value added in services; the share of employment in services and the employment in services, female; the growth rate of GDP per capita and the share of value added in services.	Regression analysis (n=20 or more)	Limited possibility due to novelty of GBSCs phenomenon and small sample size (lack of statistical data). Could be reliable research method for evaluation of correlations between employment in GBSCs and other macroeconomic indicators in the future when the sufficient sample size is available.
Sass et al (2018)	Evaluation of the impact of **FDI** on host countries (employment and export) by presenting the analysis of selected **service industries** in Visegrad countries (Czech Republic, Hungary, Poland and Slovakia).	Linear and panel regression analysis for each country (n=6 or more)	
Mroczek (2019)	Examination and comparative analysis of the **business services sector** in India, Ireland and Poland. Descriptive comparative analysis of business services organizations location factors in three countries.	Descriptive comparative analysis	Applicable to evaluate the GBSCs differences and reveal specific features in countries macroeconomic outcomes.

Researchers	Research topic	Research methods	Applicability in GBSCs macroeconomic outcomes measurability
CEE countries investment promotion agencies or GBSCs experts reports	CEE countries **GBSCs sector** analysis and parallels with macroeconomic indicators. Macroeconomic indicators distinguished in the reports: labor market, spending and consumption, migration, life quality, cross-sectorial growth, regional development, GDP related indicators.	Survey of GBSCs, descriptive analysis, qualitative comparative analysis, projections	Secondary data and comprehensive comparative analysis based on the reports can be used for revealing the impact of GBSCs on macroeconomic indicators. These researches include comprehensive GBSCs sector data analysis, which is not accessible for single researcher.
Wirtz et al (2015)	Contribution of **GBSCs** to improve productivity and economic growth of the world economy.	Conceptual contribution supported by descriptive data.	More applicable for theoretical part of the work than for the research.
Kuzior, Sobotka (2019)	Analysis of key competencies in the modern **business services sector.**	Descriptive analysis.	Employment in GBSCs and it's macroeconomic outcome - employment restructuring. Descriptive analysis of this outcome is applicable for the dissertation.
Biernat-Stawecka (2016)	Employment restructuring enhanced by **GBSCs.**	Descriptive analysis.	

Researchers	Research topic	Research methods	Applicability in GBSCs macroeconomic outcomes measurability
Ruzsa (2018)	Analysis of the CEE region economic development opportunities enhanced by **GBSCs.**	Descriptive, comparative analysis.	Applicable and reliable methods until the sample size is small in GBSCs statistics. Regression analysis will be more reliable method in the future when sample size and research period is more representative.
Ślusarczyk (2017)	Analysis of **GBSCs** related aspects including macroeconomic indicator such as employment, level of GBSCs employees earnings in Poland and Slovakia.	Descriptive, comparative analysis.	
Marciniak (2014)	Analysis of trends in **GBSCs** market and it's role in the growth of national economies in CEE region.	Interview, questionnaire study, descriptive, comparative analysis.	
ABSL (2011), Micek et al (2010), Micek et al (2011), Micek (2011)	Jobs created in different secondary, tertiary sectors of economy due to increase in household income and purchasing power provoked by **GBSCs.**	Descriptive analysis of multiplier effect, questionnaire, primary and secondary data analysis,multiplier effect estimations.	Applicable and can be complemented with other multiplier effect evaluation methodologies with the emphasis on each distinguished macroeconomic indicator in the dissertation.

Appendix 4. *Important GBSCs Macroeconomic Outcomes Quantitative and Qualitative Expression In CEE Countries Included to Dissertation Research**

Labor market indicators	Czech Republic	Hungary	Lithuania	Poland	Romania	Slovakia	Median
Employment in GBSCs, in thousands (2019)	112	69.9	19.3	338	131	37	**90.95**
Employment in GBSCs per 1000 residents (2019)	10.64	7.15	6.91	8.9	6.75	6.79	**7.03**
Employment growth average (2014-2019)	17.78 %	15.73 %	17.11 %	21.82 %	6.35 %	14.44 %	**16.42 %**
GBSCs/Total Employment Ratio, % (2019, Romania 2018)	2.17 %	1.58 %	1.46 %	2.10 %	1.56 %	1.45 %	**1.57 %**
GBSCs average salary higher than national average salary, % (2019-2020)	32.44 %	70.71 %	69.93 %	115.19 %	113.19 %	26.68 %	**70.32 %**
GBSCs (2019) / social security funds (2018) collected contributions ratio, %	10.82 %	4.32 %	4.18 %	7.46 %	n/a	0.90 %	4.32 %

Spending/ consumption indicators	Czech Republic	Hungary	Lithuania	Poland	Romania	Slovakia	Median
Projected additional annual gross disposable income created due to higher average salary in GBSC in 2020, in thousand EUR	835,455.20	938,312.43	317,244.41	6,814,714.06	2,614,670.11	228,624.81	886,883.82
Projected additional annual gross disposable income created due to higher average salary in GBSC in 2020/Total expenditure in 2019 ratio expressed in %	0.78%	1.29%	1.08%	2.24%	1.93%	0.44%	1.18%
Projected additional annual gross disposable income created due to higher average salary in GBSC in 2020/ Food and non-alcoholic beverages expenditure in 2019 ratio expressed in %	5.01%	7.42%	5.33%	13.66%	8.36%	2.51%	6.38%
Projected additional annual gross disposable income created due to higher average salary in GBSC in 2020/ Electricity, gas and other fuels expenditure in 2019 ratio expressed in %	11.67%	32.41%	26.61%	29.50%	55.29%	5.11%	28.05%

Spending/ consumption indicators	Czech Republic	Hungary	Lithuania	Poland	Romania	Slovakia	Median
Projected additional annual gross disposable income created due to higher average salary in GBSC in 2020/ Recreation and culture expenditure in 2019 ratio expressed in %	8.82%	17.07%	13.13%	27.23%	29.62%	4.52%	15.10%
Projected additional annual gross disposable income created due to higher average salary in GBSC in 2020/ Education expenditure in 2019 ratio expressed in %	145.98%	74.80%	216.11%	223.71%	156.87%	29.34%	151.42%

Migration indicators	Czech Republic	Hungary	Lithuania	Poland	Romania	Slovakia	Median
Re-emigration ratio,% (2019)	2.87 %	46.53 %	69.73 %	1.72 %	1.20 %	n/a	2.87 %

Life quality indicators	Czech Republic	Hungary	Lithuania	Poland	Romania	Slovakia	Median
Life quality elements of employment in GBSCs	GBSCs and the sector now invests more than 4 times the national average in educating GBSCs professionals, working practices, salary, organization values, benefit packages, perception of business in the marketplace, physical workplace location, technical training, the ability of managers to use different management styles with their employees, physical workplace design, organization goals and strategies, training on soft skills, flexible working hours, home office, cafeteria system, sport entertainment, language courses, health insurance, part time or reduced work arrangements to maternity or paternity leavers etc.	Meeting of non-financial life quality indicators expectations are higher than financial ones and GBSCs employees are more satisfied with colleagues/people, work environment, work-life balance and benefit package other than salary etc.	Health insurance, sports and entertainment facilities, subsidized training, gender equality in GBSCs in Lithuania, social responsibility of GBSCs (charitable, environmental and ecological initiatives, followed by social and educational activities for children, and animal care and welfare) etc.	GBSCs in Poland offer two types of benefits for their employees -related to organization of work (flexible working hours, work from any distance location, different trainings, which promotes personal growth etc.) and related to the health and well-being of the employees (sports packages, health and fitness programs, supplying employee kitchens with fruit and healthy snacks, encouraging biking including showers, parking areas and racks etc.).	GBSCs in Romania offer such employees benefits as language bonuses, annual bonuses based on performance of employee, extra holidays, meal tickets, private healthcare, flexible working hours etc.	GBSCs in Slovakia offer respectable compensation for work, family and health „work-life balance ", attractive motivational packages, remuneration and other benefits etc.	n/a

Cross-sectorial growth indicators	Czech Republic (Prague)	Hungary (Budapest)	Lithuania (Vilnius)	Poland (Warsaw)	Romania (Bucharest)	Slovakia (Bratislava)	Median
Built stock part occupied by GBSCs employees in 2020	42.24%	27.37%	32.99%	89.47%	74.94%	31.87%	42.24%
Other sectors influenced by GBSCs	Catering, cleaning, transportation (air and land), tourism, accommodation and leisure time, education services and conferences, other secondary services (postal, laundry, medical care, sports/wellness/health centers, technical support, archiving, gas, water supply, sales of other goods and services etc.) market growth influenced by growth of GBSCs.						n/a

Regional development indicators	Czech Republic	Hungary	Lithuania	Poland	Romania	Slovakia	Median
Proportion of employees within GBSCs located in capital and non-capital cities (2019-2020)	Capital Prague: 50 %, other cities: 50 %	Capital Budapest: 74 %, other cities: 26 %	Capital Vilnius: 68 %, other cities: 32 %	Capital Warsaw: 18,3 %, other cities: 81,7 %	Capital Bucharest: >50 %, other cities: <50 %	Capital Bratislava: majority, other cities: minority	n/a
GDP related indi- cators	**Czech Republic**	**Hungary**	**Lithuania**	**Poland**	**Romania**	**Slovakia**	**Median**
	Such GDP aggregates as compensation of GBSCs employees and cross-sectorial growth influenced by GBSCs can be treated as the main aggregates, which positively impact GDP.						n/a

*Summary and evaluations done by the author according to the comparative

analysis of the indicators in CEE countries presented in Chapters 3.1.1.-3.1.7.

Higher than median
Median
Lower than median

Source: *Compiled by author*

Appendix 5. *Lithuanian Emigrants and Lithuanian Nationals who Returned to Lithuania, 2012-2019*

Emigrants (persons)								
Year	2012	2013	2014	2015	2016	2017	2018	2019
Total	41,100	38,818	36,621	44,533	50,333	47,925	32,206	29,273

Lithuanian nationals, who returned to Lithuania (persons)								
Year	2012	2013	2014	2015	2016	2017	2018	2019
Total by age	17,357	18,975	19,528	18,383	14,207	10,155	16,592	20,412
0	292	285	310	94	203	258	322	251
1	167	200	218	286	119	127	193	221
2	202	267	234	265	163	134	208	227
3	185	179	226	237	133	134	183	226
4	179	196	197	193	144	124	171	194
5	126	164	186	211	132	98	164	158
6	98	142	160	160	115	102	132	176
7	102	106	127	153	95	71	79	133
8	62	64	82	107	79	60	75	101
9	43	71	72	84	72	47	66	102
10	53	51	71	71	63	31	63	78
11	26	47	61	63	36	25	49	97
12	47	56	53	54	47	27	38	77
13	32	41	52	48	31	28	22	48
14	31	37	41	30	27	10	33	49
15	32	56	41	48	18	25	25	45
16	42	45	43	28	31	21	24	42
17	41	62	51	44	41	21	41	30
18	58	73	80	65	66	45	72	94
19	288	197	173	83	175	213	348	407
20	770	582	408	288	274	265	474	565
21	661	657	563	346	295	250	465	584

	Lithuanian nationals, who returned to Lithuania (persons)							
22	675	694	588	384	356	264	536	682
23	747	719	667	554	501	370	632	751
24	917	912	781	690	593	457	693	832
25	987	965	860	788	642	455	749	865
26	918	979	914	771	667	442	766	980
27	911	988	997	784	647	426	764	909
28	873	1	1	1	668	402	718	868
29	739	825	938	916	570	375	656	782
30	590	695	779	922	586	364	529	669
31	544	649	723	738	488	370	596	692
32	490	592	605	692	465	328	539	683
33	420	523	580	544	398	284	457	546
34	395	503	569	521	366	256	425	515
35	373	413	522	516	316	224	344	462
36	292	392	441	434	327	208	329	417
37	245	317	346	379	297	194	310	390
38	261	273	301	344	304	153	307	363
39	267	252	307	305	229	133	262	305
40	232	241	260	277	224	167	224	293
41	198	259	238	243	186	140	236	278
42	188	256	276	235	187	113	179	238
43	189	213	235	226	208	105	211	253
44	166	212	204	249	209	105	201	223
45	180	196	205	216	184	113	190	229
46	178	173	209	214	199	115	202	247
47	153	182	222	180	166	88	193	225
48	174	175	208	189	169	85	184	256
49	136	185	182	196	139	82	145	193
50	150	161	165	177	140	106	131	192
51	167	179	165	136	114	83	130	195

			Lithuanian nationals, who returned to Lithuania (persons)				
52	155	160	170	162	125	72	126	171
53	139	163	210	170	127	90	109	170
54	121	133	148	179	123	83	125	143
55	89	134	159	146	128	87	134	151
56	87	96	128	143	106	76	126	140
57	73	85	115	113	106	71	105	142
58	59	79	86	112	85	56	102	129
59	58	61	90	85	65	68	96	125
60	90	110	86	69	58	52	83	106
61	35	37	71	121	119	78	68	91
62	39	42	38	67	48	72	144	182
63	9	25	34	50	47	62	90	137
64	6	16	14	27	27	31	25	59
65	9	11	21	14	23	18	23	38
66	12	9	9	10	16	18	19	26
67	9	11	14	17	14	9	26	21
68	9	14	16	8	17	10	13	28
69	5	15	12	12	8	11	11	19
70	7	7	6	13	6	7	10	8
71	7	5	5	10	3	10	10	17
72	6	5	9	6	7	5	2	5
73	2	4	4	9	5	4	3	10
74	6	5	6	5	3	6	6	5
75	5	8	5	7	3	2	5	8
76	5	2	13	4	2	6	3	7
77	5	7	4	2	5	7	12	7
78	1	2	3	2	3	5	8	3
79	2	3	2	1	2	7	2	5
80	3	0	4	5	2	1	2	3
81	1	1	3	4	5	2	1	3

Lithuanian nationals, who returned to Lithuania (persons)								
82	2	3	1	2	0		4	4
83	2	1	2	3	2	1	1	3
84	0	0	1	0	4		1	4
85 and older	7	8	5	12	9	5	12	4

Source: *Statistics Lithuania (2021), accessed on 2021-03-13*

Appendix 6. *Hungarian Emigrants and Hungarian Nationals who Returned to Hungaria, 2010-2019*

Year	Immigrants			Emigrants
	citizens born abro-ad	citizens born in Hungary	total	
2010	60	1,575	1,635	7,318
2011	3,061	2,443	5,504	12,413
2012	9,168	4,194	13,362	12,964
2013	8,364	9,354	17,718	21,580
2014	17,221	11,356	28,577	31,385
2015	17,747	14,810	32,557	32,852
2016	13,600	16,215	29,815	29,425
2017	10,711	20,906	31,617	26,957
2018	10,224	23,401	33,625	23,808
2019	10,112	23,172	33,284	21,900

Source: *Hungarian Central Statistical Office* <https://www.ksh.hu/docs/eng/xstadat/xstadat_annual/i_wnvn004.html>, *accessed on 2021-03-14*

Appendix 7. *Immigration for Permanent Residence by Citizenship, Sex and Country of Birth of Immigrants in Poland[14], 2012-2019*

KRAJ URO-DZENIA *COUNTRY OF BIRTH*	Ogółem *Total*	Kraj obywatelstwa *Country of citizenship*					
		Polska *Poland*			inne kraje *other countries*		
		razem *total*	męż-czyź-ni *males*	kobiety *females*	razem *total*	męż-czyź-ni *males*	kobiety *females*
2016							
OGÓŁEM *TOTAL*	13,475	9,916	5,188	4,728	3,555	2,109	1,446
Polska *Poland*	2,754	2,473	1,412	1,061	279	138	141
Zagranica *Foreign countries*	10,721	7,443	3,776	3,667	3,276	1,971	1,305
Unia Europejska European Union	6,972	5,861	3,010	2,851	1,111	878	233
2017							
OGÓŁEM *TOTAL*	13,324	9,801	5,094	4,707	3,517	2,101	1,416
Polska *Poland*	2,831	2,620	1,483	1,137	208	110	98
Zagranica *Foreign countries*	10,434	7,173	3,608	3,565	3,258	1,965	1,293
Unia Europejska European Union	6,734	5,622	2,854	2,768	1,111	894	217
2018							
OGÓŁEM *TOTAL*	15,461	10,636	5,702	4,934	4,814	2,780	2,034
Polska *Poland*	3,256	2,976	1,713	1,263	273	135	138
Zagranica *Foreign countries*	12,136	7,659	3,989	3,670	4,474	2,616	1,858
Unia Europejska European Union	7,352	5,915	3,120	2,795	1,434	1,150	284
2019							

---

14   Unknown citizenship was not taken into consideration in the division.

OGÓŁEM TO-TAL	16,909	11,858	6,237	5,621	5,038	2,977	2,061
Polska *Poland*	3,347	3,113	1,804	1,309	225	118	107
Zagranica *Foreign countries*	13,479	8,740	4,430	4,310	4,735	2,819	1,916
Unia Europejska European Union	8,271	6,692	3,457	3,235	1,577	1,275	302

Source: *Demographic Yearbooks of Poland 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020*

Appendix 8. *International Migration in Czech Republic - Immigrants: by Citizenship, Sex and Age Groups, 2012-2019*

| Státní ob-čanství | Přistěhovalí   *Immigrants* | | | | | | Citizenship |
| | celkem | muži | ženy | věková skupina *Age group* | | | |
	Total	*Males*	*Females*	**0-14**	**15-64**	**65+**	
2012							
Celkem	30,298	17,054	13,244	3,399	26,318	581	*Total*
Česká Republika	1,691	883	808	405	1,084	202	*Czech Republic*
2013							
Celkem	29,579	16,467	13,112	3,592	25,299	688	*Total*
Česká Republika	1,736	932	804	457	1,057	222	*Czech Republic*
2014							
Celkem	41,625	23,115	18,510	5,781	34,990	854	*Total*
Česká Republika	3,135	1,679	1,456	1,569	1,279	287	*Czech Republic*
2015							
Celkem	34,922	19,022	15,900	5,499	28,567	856	*Total*
Česká Republika	3,333	1,664	1,669	1,507	1,542	284	*Czech Republic*
2016							
Celkem	37,503	20,817	16,686	5,309	31,339	855	*Total*
Česká Republika	2,695	1,367	1,328	1,174	1,239	282	*Czech Republic*
2017							
Celkem	45,957	26,839	19,118	5,191	39,885	881	*Total*
Česká Republika	2,430	1,302	1,128	942	1,189	299	*Czech Republic*
2018							
Celkem	58,148	34,621	23,527	5,389	51,895	864	*Total*
Česko	2,276	1,169	1,107	819	1,196	261	*Czech Republic*

Source: *Demographic Yearbooks of the Czech Republic 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019*

Appendix 9. *International Migration by Citizenship of Migrants in Slovakia, 2015-2019*

Štátne občianstvo	Prisťahovaní Immigrants			Citizenship
	spolu Total	muži Males	ženy Females	
2015				
Úhrn	6,997	4,102	2,895	*Total*
Slovensko	3,223	1,611	1,612	*Slovakia*
2016				
Úhrn	7,686	4,422	3,264	*Total*
Slovensko	4,076	2,073	2,003	*Slovakia*
2017				
Úhrn	7,188	3,911	3,277	*Total*
Slovensko	4,277	2,137	2,140	*Slovakia*
2018				
Úhrn	n/a	n/a	n/a	*Total*
Slovensko	n/a	n/a	n/a	*Slovakia*
2019				
Úhrn	n/a	n/a	n/a	*Total*
Slovensko	n/a	n/a	n/a	*Slovakia*

Source: *Statistical Yearbook of the Slovak Republic 2016, 2017, 2018, 2019*

Appendix 10. *Emigration and Re-emigration Rates in Selected CEE Countries*

Country	Indicator	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Czech Republic	Emigrants	61,782	61,069	55,910	46,106	25,894	28,468	25,684	38,864	27,316	26,742	77,798
	Population	10,425,783	10,462,088	10,486,731	10,505,445	10,516,125	10,512,419	10,538,275	10,553,843	10,578,820	10,610,055	10,528,984
	Emigration rate	0.0059	0.0058	0.0053	0.0044	0.0025	0.0027	0.0024	0.0037	0.0026	0.0025	0.0074
	Czech nationals who returned to the Czech Republic	n/a	n/a	n/a	1,691	1,736	3,135	3,333	2,695	2,430	2,276	2,231
	Re-emigration ratio	n/a	n/a	n/a	0.0367	0.0670	0.1101	0.1298	0.0693	0.0890	0.0851	0.0287
Lithuania	Emigrants	38,500	83,157	53,863	41,100	38,818	36,621	44,533	50,333	47,925	32,206	29,273
	Population	3,183,856	3,141,976	3,052,588	3,003,641	2,971,905	2,943,472	2,921,262	2,888,558	2,847,904	2,808,901	2,794,184
	Emigration rate	0.0121	0.0265	0.0176	0.0137	0.0131	0.0124	0.0152	0.0174	0.0168	0.0115	0.0105
	Lithuanian nationals who returned to Lithuania	n/a	n/a	n/a	17,357	18,975	19,528	18,383	14,207	10,155	16,592	20,412
	Re-emigration ratio	n/a	n/a	n/a	0.4223	0.4888	0.5332	0.4128	0.2823	0.2119	0.5152	0.6973
Hungary	Emigrants	10,483	13,365	15,100	22,880	34,691	42,213	43,225	39,889	39,829	48,178	49,795
	Population	10,030,975	10,014,324	9,985,722	9,931,925	9,908,798	9,877,365	9,855,571	9,830,485	9,797,561	9,778,371	9,772,756
	Emigration rate	0.0010	0.0013	0.0015	0.0023	0.0035	0.0043	0.0044	0.0041	0.0041	0.0049	0.0051
	Hungarian nationals who returned to Hungary	n/a	n/a	n/a	4,194	9,354	11,356	14,810	16,215	20,906	23,401	23,172
	Re-emigration ratio	n/a	n/a	n/a	0.1833	0.2696	0.2690	0.3426	0.4065	0.5249	0.4857	0.4653

Country	Indicator	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Poland	Emigrants	229,320	218,126	265,798	275,603	276,446	268,299	258,837	236,441	218,492	189,794	180,594
	Population	38,135,876	38,022,869	38,062,718	38,063,792	38,062,535	38,017,856	38,005,614	37,967,209	37,972,964	37,976,687	37,972,812
	Emigration rate	0.0060	0.0057	0.0070	0.0072	0.0073	0.0071	0.0068	0.0062	0.0058	0.0050	0.0048
	Polish nationals who returned to Poland	n/a	n/a	n/a	6,887	5,495	5,443	5,443	2,473	2,620	2,976	3,113
	Re-emigration ratio	n/a	n/a	n/a	0.0250	0.0199	0.0203	0.0210	0.0105	0.0120	0.0157	0.0172
Romania	Emigrants	246,626	197,985	195,551	170,186	161,755	172,871	194,718	207,578	242,193	231,661	233,736
	Population	20,440,290	20,294,683	20,199,059	20,095,996	20,020,074	19,947,311	19,870,647	19,760,585	19,644,350	19,530,631	19,405,156
	Emigration rate	0.0121	0.0098	0.0097	0.0085	0.0081	0.0087	0.0098	0.0105	0.0123	0.0119	0.0120
	Romanian nationals who returned to Romania	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Re-emigration ratio	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Slovakia	Emigrants	1,979	1,889	1,863	2,003	2,770	3,644	3,870	3,801	3,466	3,298	3,384
	Population	5,382,401	5,390,410	5,392,446	5,404,322	5,410,836	5,415,949	5,421,349	5,426,252	5,435,343	5,443,120	5,450,421
	Emigration rate	0.0004	0.0004	0.0003	0.0004	0.0005	0.0007	0.0007	0.0007	0.0006	0.0006	0.0006
	Slovak nationals who returned to Slovakia	n/a	n/a	n/a	n/a	n/a	n/a	3,223	4,076	4,277	n/a	n/a
	Re-emigration ratio	n/a	n/a	n/a	n/a	n/a	n/a	0.8328	1.0723	1.2340	n/a	n/a

Source: *Eurostat, 2021, Statistics Lithuania, 2021, Hungarian Central Statistical Office, 2021, Demographic Yearbooks of Poland 2013, 2014, 2015, 2016, 2017, 2018, 2019,2020, Demographic Yearbooks of the Czech Republic 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, Romanian Statistical Yearbook, 2016, Statistical Yearbook of the Slovak Republic, 2016, 2017, 2018, 2019, 2020*

Appendix 11. *Share of Employment in GBSCs on Services Sector Level in Selected CEE Countries*

	Employment in SSCs, in thousand, 2014	Employment in Services, in thousand, 2014	GBSC share in Services employment, 2014	Employment in GBSCs, in thousand, 2015	Employment in Services, in thousand, 2015	GBSC share in Services employment, 2015	Employment in GBSCs, in thousand, 2016	Employment in Services, in thousand, 2016	GBSC share in Services employment, 2016
Czech Republic	50	2945.4	1.70%	59	2977.3	1.98%	65	3033.4	2.14%
Lithuania	11	870.8	1.26%	11.1	876.1	1.27%	12.5	908.2	1.38%
Hungary	-	2663.8	-	42.5	2729.6	1.56%	45	2809	1.60%
Poland	128	9206	1.39%	150	9338.1	1.61%	212	9414.19	2.25%
Romania	-	-	-	-	-	-	109	-	-
Slovakia	-	1443	-	-	1471.8	-	25	1511.5	1.65%

	Employment in GBSCs, in thousand, 2017	Employment in Services, in thousand, 2017	GBSC share in Services employment, 2017	Employment in GBSCs, in thousand, 2018	Employment in Services, in thousand, 2018	GBSC share in Services employment, 2018	Employment in GBSCs, in thousand, 2019	Employment in Services, in thousand, 2019	GBSC share in Services employment, 2019
Czech Republic	75	3088.4	2.43%	100	3160.5	3.16%	112	3186	3.52%
Lithuania	15	906.3	1.66%	17	919.6	1.85%	19.3	932.4	2.07%
Hungary	46	2804.9	1.64%	46	2803.6	1.64%	55	2851.2	1.93%
Poland	244	9570.1	2.55%	279	9687.5	2.88%	338	9702.1	3.48%
Romania	120	-	-	125	-	-	-	-	-
Slovakia	30	1521.7	1.97%	37	1570.5	2.36%	37	1579.1	2.34%

Source: *OECD, 2021 (accessed on 2021-03-06)*

Appendix 14. *Total and Selected Consumption Expenditure of Households by Consumption Purpose in Selected CEE Countries, 2019*

	Consumption expenditure of households by consumption purpose in 2019, total EUR	Consumption expenditure of households by consumption purpose in 2019, Food and non-alcoholic beverages EUR	Consumption expenditure of households by consumption purpose in 2019, Electricity, gas and other fuels EUR	Consumption expenditure of households by consumption purpose in 2019, Recreation and culture EUR	Consumption expenditure of households by consumption purpose in 2019, Education EUR
Czech Republic	107,520,700,000.0	16,687,500,000.0	7,162,000,000.0	9,472,300,000.0	572,300,000.0
Hungary	72,939,500,000.0	12,638,800,000.0	2,895,500,000.0	5,496,400,000.0	1,254,400,000.0
Lithuania	29,448,000,000.0	5,950,100,000.0	1,192,200,000.0	2,415,300,000.0	146,800,000.0
Poland	303,709,500,000.0	49,905,500,000.0	23,104,300,000.0	25,027,400,000.0	3,046,200,000.0
Romania	135,547,900,000.0	31,260,700,000.0	4,729,400,000.0	8,826,600,000.0	1,666,800,000.0
Slovakia	52,474,600,000.0	9,116,500,000.0	4,471,200,000.0	5,056,500,000.0	779,100,000.0

Source: *Eurostat, 2021 (accessed on 2021-03-13)*

Appendix 12. *Data for Personal Income Tax and Social Contributions Calculation in Selected CEE Countries*

Country	Average monthly salary in GBSCs in 2019, EUR	Employment in GBSCs in 2019	Personal income tax rates in 2019	Social contribution rates in 2019 (sum of contributions paid by employee and employer)	General tax-exempt income information (except special cases of children, disabilities etc., which lower taxable amounts)
Czech Republic	1,948.77	112000	15 % from super-gross wage (gross wage + 34 %)	45%	No information about tax exempt in ABSL, but there is some deduction from income tax according to calculator.
Hungary	2,120.49	55000	15 %	37.50%	n/a
Lithuania	2,590.08	19300	20 % since average wage does not exceed 120 average wages	21.27%	Tax exempt income = 300 EUR – 0.15 * ("monthly salary" - 555 EUR). 555 EUR - minimum monthly wage as of 2019-01-01. For average salary 1,502.23 EUR tax exempt income is 157.92 EUR.
Poland	2,449.52	338000	18 % since annual salary in GBSCs is up to 85,528.00 PLN (~19,890.23 EUR)	34.09%	**Personal income tax:** Deductible cost is 111.25 PLN per month as of 2019-01-01 and tax free allowance for income tax is 46.33 PLN per month as of 2019-01-01. So ~36.65 EUR deductible for salary 1,522.38 EUR. **Social contributions:** Annual wage does not exceed the cap mentioned in Table 17, so contributions in range 19.48-22.14 % paid by employer were chosen and contributions 13.71 % paid by employee were chosen. Accident fund paid by employer 1.67 % was chosen as general reccomendation from calculator, so emloyer pays 20.39 % in such case.
Romania	2,601.92	125000[15]	10 % calculated from gross salary minus social contributions	37,25 % since no hard working or special working conditions mentioned in Table 17 were included	n/a
Slovakia	1,624.01	37000	19 % calculated from income minus personal allowance and minus contributions paid by employee	48.60%	Annual personal allowance is 3,830.02 EUR. Individuals whose tax base is higher than EUR 19,948.00 (not the case for mothly salary 1,560.44 EUR) cannot apply the entire non-taxable personal allowance.

Sources: *indicated in Table 14, Table 16, Table 17, Table 18 and author's personal calculations*

15 Latest data available for year 2018

Appendix 13. *Contribution to Gross Household Adjusted Disposable*

Income, EU-28, 2007-2017

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Net wages	35.2	35.3	34.6	34.5	34.8	34.9	34.9	34.9	35,3	35.6	36.1
Gross operating surplus and mixed income	21.3	21.2	19.7	19.7	20.0	19.9	19.9	19.9	19.8	19.8	19.8
Net property income	11.9	11.4	10.9	10.6	10.5	10.4	10.3	10.5	10.4	10.1	9.7
Social benefits	22.1	22.3	23.8	24.1	24.1	24.5	24.7	24.6	24.5	24.5	24.4
Social transfers in kind	16.2	16.5	17.1	17.2	17.1	17.0	17.1	17.2	17.1	17.2	17.3
Taxes	-13.8	-13.8	-13.1	-13.1	-13.3	-13.8	-14.1	-14.3	-14.4	-14.4	-14.6
Other	7.1	7.0	7.1	7.0	6.9	7.1	7.2	7.1	7.1	7.2	7.2

Source: *Eurostat, 2019* <https://ec.europa.eu/eurostat/statistics-explained/index.php/
Households_-_statistics_on_disposable_income,_saving_and_investment#House-
hold_saving_rate >*, accessed on 2019-10-12*

Appendix 15. *Changes in Gross Household Investment Rate in Selected CEE countries, 2007-2012 and 2012-2017* [16]

Changes in gross household investment rate, 2007-2012 and 2012-2017
(percentage points, based on ratio of gross fixed capital formation to gross disposable income)
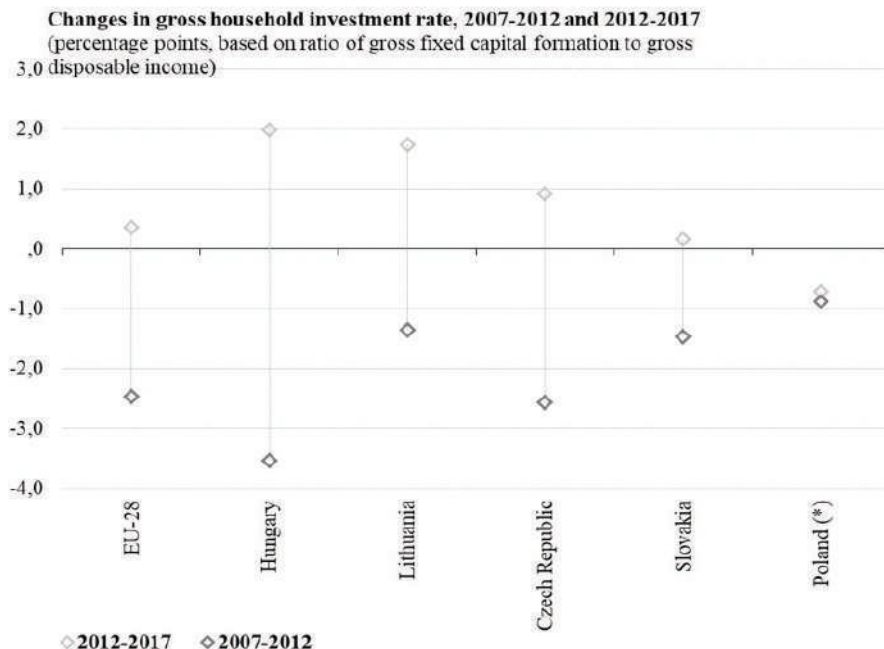
◇ **2012-2017** ◇ **2007-2012**

	2007-2012	**2012-2017**
EU-28	-2.5	0.4
Hungary	-3.5	2.0
Lithuania	-1.4	1.7
Czech Republic	-2.6	0.9
Slovakia	-1.5	0.2
Poland (*)	-0.9	-0.7

Source: *Eurostat, 2021 (accessed on 2021-03-13)*

16   Note: gross disposable income is adjusted for changes in net equity of households in pension fund reserves. The difference in percentage points is calculated as the rate for the later period minus the rate for the earlier period. Romania: not available.
(*) 2012-2016 instead of 2012-2017.

Appendix 16. *Gross Household Saving Rate in Selected CEE Countries, 2017[17]*

Gross household saving rate, 2017
(%, ratio of gross saving to gross disposable income)
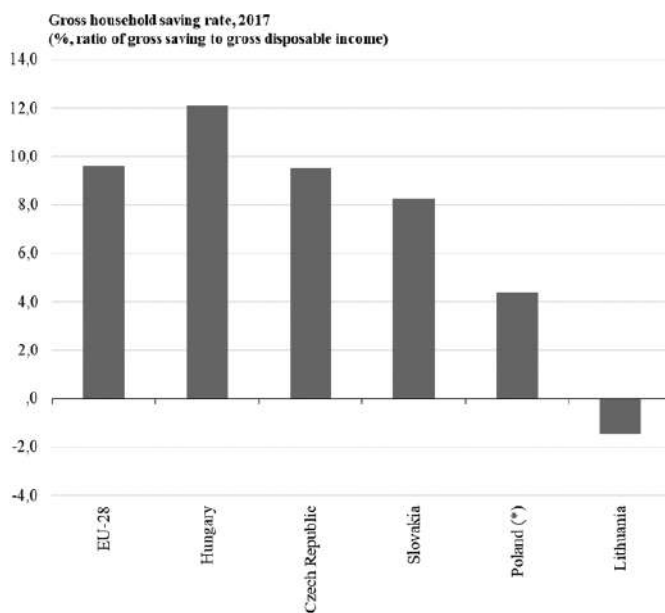
	(%)
EU-28	9.6
Hungary	12.1
Czech Republic	9.5
Slovakia	8.2
Poland (*)	4.4
Lithuania	-1.5

Source: *Eurostat, 2017 (accessed on 2019-10-20)*

---

17   Note: gross disposable income is adjusted for changes in net equity of households in pension fund reserves. Romania: not available.
(*) 2016

Appendix 17. *Changes in Gross Household Saving Rate in Selected CEE Countries, 2007-2012 and 2012-2017[18]*

Changes in gross household saving rate, 2007-2012 and 2012-2017 (percentage points, based on ratio of gross saving to gross disposable income)
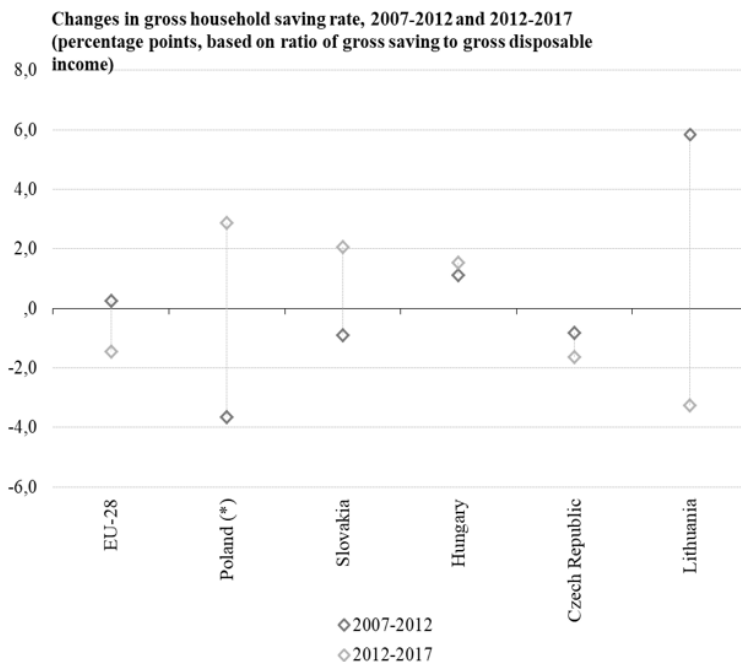
	2007-2012	2012-2017
EU-28	0.3	-1.5
Poland (*)	-3.7	2.9
Slovakia	-0.9	2.1
Hungary	1.1	1.5
Czech Republic	-0.8	-1.6
Lithuania	5.8	-3.3

Source: *Eurostat, 2017 (accessed on 2019-10-20)*

18   Note: gross disposable income is adjusted for changes in net equity of households in pension fund reserves. The difference in percentage points is calculated as the rate for the later period minus the rate for the earlier period. Romania: not available.
(*)2012-2016 instead of 2012-2017.

Appendix 18. *Investment Promotion Agencies Experts Survey Questions (compiled by author)*

Anna Kislovska

E-mail: dr.anna2019@gmail.com **, tel.: +37060854598**

Vilnius, Lithuania

EVALUATION OF GLOBAL BUSINESS SERVICES CENTERS IMPACT ON MACROECONOMIC INDICATORS IN SELECTED CENTRAL AND EASTERN EUROPE COUNTRIES

Dear Experts,

First of all, I would like to express my sincere gratitude for your participation and valuable contribution to this dissertation. The aim of this questionnaire is to evaluate Global Business Services Centers (GBSCs) impact on macroeconomic indicators in selected Central and Eastern Europe (CEE) countries. You will find 9 open questions below (please note that 5th question is exclusively for Hungary, Lithuania and Slovakia). I would be grateful for as detailed answers as possible. Deadline for the answers is 20th January 2020. However, if you feel that you need more time to prepare the answers, please let me know. Please also feel free to contact me if you have additional questions or need more information on the topic. Please note that the answers will be used exclusively for scientific research purposes and anonymity of experts will be protected if preferred.

Kind regards,

Anna Kislovska

1. Could you please inform if your country is collecting statistics on GBSCs[19] and where is it presented? Do you feel the need of GBSCs oriented statistics to be collected and analyzed on country level in more detailed way?

2. Could you please briefly comment the situation of GBSCs market in your country? What are the main tendencies, do you have GBSCs oriented organizations/business forums/initiatives/educational institutions or other?

3. Author of dissertation distinguished 7 macroeconomic indicators groups, on which GBSCs in selected CEE countries (Czech Republic, Hungary, Lithuania, Poland, Romania, Slovakia) can have economic impact. Please find the macroeconomic indicators and more detailed explanation on them below. Please also find some statistics and comments on macroeconomic indicators in Table 1, Table 2 and Table 3, it is for your knowledge what is dissertation about. I kindly ask you to express your opinion on how GBSCs in your country impact these 7 macroeconomic indicators groups (please rank the importance from 1 to 4 and comment). If possible, complement statistics of your country or indicate the source where more statistics can be found.

1. Labor market indicators
- employment in GBSCs: employment restructuring, number of working places enhanced by increasing GBSCs number– changes from year to year and projections, general employment / GBSCs employment ratio etc.
- Impact of GBSCs on youth employment indicators
- Employment of social sciences graduates in GBSCs
- Salaries in GBSCs compared to national minimum and average salaries
- GBSCs job related and other taxes
2. Spending and consumption indicators
- Increasing purchasing power of GBSCs employees and family members
- Increasing purchasing power of youth employed in GBSCs
- Increasing purchasing power of secondary and tertiary chains according to multiplier effect
- Spending and consumption trajectories changes influenced by employment and increase in wages in GBSCs
3. Migration indicators
- GBSCs working places impact on preventing of brain drain

---

19 GBSC term will be used in this questionnaire

- GBSCs impact on lower emigration level
- GBSCs development and impact on re-emigration level

4. Life quality indicators

- Income and respectable working places/conditions in GBSCs
- Personal development and learning in international environment opportunities
- Attractive motivational packages
- Health/family/respect-oriented culture and values
- Respectable compensation for work
- Sustainability emphasized in GBSCs

5. Cross-sectorial growth indicators

Real estate market growth influenced by building and rent of premises for developing and new GBSCs

- Catering market growth influenced by GBSCs
- Cleaning market growth influenced by GBSCs
- Transportation (both air and land) services market growth influenced by GBSCs
- Tourism market growth influenced by GBSCs
- Accommodation market growth influenced by GBSCs
- Leisure time market growth influenced by GBSCs (team buildings, massive sport events and other team activities)
- Education services and conferences market growth influenced by GBSCs
- Other secondary services market growth influenced by growth of GBSCs

6. Regional development indicators

- Opportunities for rising stars cities other than capital
- Opportunities for youth from province

7. GDP related indicators

- Yearly GDP growth influenced by GBSCs
- GBSCs investment as percentage of GDP

	1- low im- portance	2-im- portant	3- very im- portant	4-extre- mely im- portant	Comment
1. Labor mar- ket indicators	☐	☐	☐	☐	
2. Spending and consump- tion indicators	☐	☐	☐	☐	
3. Migration indicators	☐	☐	☐	☐	
4. Life quality indicators	☐	☐	☐	☐	
5. Cross-sec- torial growth indicators	☐	☐	☐	☐	
6. Regional development indicators	☐	☐	☐	☐	
7. GDP related indicators	☐	☐	☐	☐	

5. Additional country specific questions (only for Hungary, Lithuania and Slovakia):

Hungary:

1. Lithuania, Hungary and Slovakia show extremely high re-emigration rates (please see Table 3 and comment below). Please express your opinion if working places offered by GBSCs in Hungary could be the reason of high re-emigration level of Hungarian nationals? Please present researches on this topic (if any).

Lithuania:

1. Lithuania, Hungary and Slovakia show extremely high re-emigration rates (please see Table 3 and comment below). Please express your opinion if working places offered by GBSCs in Lithuania could be the reason of high re-emigration level of Lithuanian nationals? Please present researches on this topic (if any).

Slovakia:

1. Lithuania, Hungary and Slovakia show extremely high re-emigration rates (please see Table 3 and comment below). Please express your opinion if working places offered by GBSCs in Slovakia could be the reason of high re-emigration level of Slovak nationals? Please present researches on this topic (if any).

2. Author of dissertation found different life quality indicators analyzed in reports and researches of selected CEE countries (respectable working places/conditions in GBSCs, personal development and learning in international environment opportunities, attractive motivational packages, health/family/respect-oriented culture and values, respectable compensation for work, sustainability emphasized in GBSCs etc.). Could you please distinguish which life quality indicators are being influenced by GBSCs in Slovakia?

6. Do you find the dissertation topic and information presented in this questionnaire useful on your country level? Please answer „yes" or „no" and comment.

7. Would you be interested in receiving of final dissertation copy when it is finished? Please indicate postal address where it can be sent if applicable.

8. Do you have other thoughts, recommendations or useful information/links?

9. Please confirm that the following data can be revealed in dissertation: expert's name, surname, institution, position in institution, country. Please inform if any of these data shall remain anonymous.

Statistics and GBSCs related macroeconomic indicators in selected CEE countries

Table 1. Number of GBSCs in Selected CEE Countries

There is lack of data for number of GBSCs in selected CEE countries. Only 1-3 last years statistics found in country reports/researches (except Lithuania and Poland).

Number of GBSCs	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Czech Republic										180+	200	219
Lithuania	16	19	22	23	27	32	36	45	52	60	70	78
Hungary											110	116
Poland								470	532	593	724	831
Romania												265
Slovakia										40+	60+	65+

Table 2. *Employment in GBSCs, in Thousand in Selected CEE Countries*

Employment in GBSCs in thousands	2014	2015	2016	2017	2018
Czech Re	50	59	65	75	100
Lithuania	11	11,1	12,5	15	17
Hungary	-	42,5	45	46	46
Poland	128	150	212	244	279
Romania	-	-	109	120	125
Slovakia	-	-	25	30	37

Table 3. *Emigration and Re-emigration Rates in Selected CEE Coutries*

Country	Indicator	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Czech Republic	Emigration rate	0,33%	0,20%	0,50%	0,59%	0,58%	0,53%	0,44%	0,25%	0,27%	0,24%	0,37%	0,26%
	Re-emigration ratio	n/a	n/a	n/a	n/a	n/a	n/a	3,67%	6,70%	11,01%	12,98%	6,93%	8,90%
Lithuania	Emigration rate	0,98%	0,93%	0,80%	1,21%	2,65%	1,76%	1,37%	1,31%	1,24%	1,52%	1,74%	1,68%
	Re-emigration ratio	n/a	n/a	n/a	n/a	n/a	n/a	42,23%	48,88%	53,32%	41,28%	28,23%	21,19%
Hungary	Emigration rate	0,04%	0,04%	0,10%	0,10%	0,13%	0,15%	0,23%	0,35%	0,43%	0,44%	0,41%	0,41%
	Re-emigration ratio	n/a	n/a	n/a	n/a	n/a	n/a	18,33%	26,96%	26,90%	34,26%	40,65%	52,49%
Poland	Emigration rate	0,12%	0,09%	n/a	0,60%	0,57%	0,70%	0,72%	0,73%	0,71%	0,68%	0,62%	0,58%
	Re-emigration ratio	n/a	n/a	n/a	n/a	n/a	n/a	2,50%	1,99%	2,03%	2,10%	1,05%	1,20%
Romania	Emigration rate	n/a	n/a	1,47%	1,21%	0,98%	0,97%	0,85%	0,81%	0,87%	0,98%	1,05%	1,23%
	Re-emigration ratio	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Slovakia	Emigration rate	0,03%	0,03%	0,03%	0,04%	0,04%	0,03%	0,04%	0,05%	0,07%	0,07%	0,07%	0,06%
	Re-emigration ratio	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	83,28%	107,23%	123,40%

Migration indicators analysis with available data for selected CEE countries shows that from ~1 % to ~53 % of emigrated nationals returned (re-emigrated) to selected CEE countries during years 2012-2017 (See Table 3 above). Such countries as Lithuania, Hungary and Slovakia show extremely high re-emigration rates, what means that almost half or more than half emigrated nationals returned (re-emigrated) to their countries of origin. What is more, Slovakia's example shows that the number of re-emigrated nationals exceeded the number of emigrated nationals in years 2016 and 2017 (107.23 % and 123.40 % accordingly). Author of this scientific work assumes that working places created by GBSCs in selected CEE countries could have impact on improving re-emigration rates.

Appendix 19. *Investment Promotion Agencies Experts Survey Answers*

1. Could you please inform if your country is collecting statistics on GBSCs and where is it presented? Do you feel the need of GBSCs oriented statistics to be collected and analyzed on country level in more detailed way?

Lithuania:

Government agency "Invest Lithuania" collects such data and it is published every year in the "Lithuania's business services report" published by the agency.

In regards to Lithuania, it is already collected and analyzed meticulously. The data is collected annually via survey that „GBSCS"s fill out – it is easily accessible to individuals/organizations that need access to such data.

Poland:

Statistics concerning „GBSCS" sector are collected by several organizations supporting the de-velopment of the sector:

•Polish Investment and Trade Agency – statistics concerning projects supported by the Agency

•ABSL association https://absl.pl/

•Pro Progressio foundation https://www.proprogressio.pl/pl/

Statistics concerning all enterprises are collected by the National Statistics Office (GUS)

Slovakia:

SARIO is the official governmental agency in Slovakia, covering the sector of „GBSCS"s – however given their outreach as far as statistics are concerned, their capacity to collect and re-view sectoral data is highly limited (apart from basic statistical data such as number of „GBSCS"s and FTEs in the sector). AmCham Business Service Center Forum (BSCF) is the umbrella sectoral association representing over 90% of all FTEs in the sector in Slovakia. Our own statistical database, review annually, serves as the primary source of all data in the sector, even though I can imagine the data could be even more structured and detailed. Collected, re-viewed and analyzed data is presented during „GBSCS" annual conference (this year it will be 24 September 2020) and is available on www.amcham.sk and www.bscf.eu.

2. Could you please briefly comment the situation of GBSCs market in your

country? What are the main tendencies, do you have GBSCs oriented organizations/ business forums/initiatives/educational institutions or other?

Lithuania:

The main tendency in the recent years is „GBSCS"s taking on more responsibilities and providing broader scope of services to internal business partners. Technology is forcing „GBSCS"s to evolve and provide more value-add activities and move from transaction processing to insight delivery across the functions. This automatically creates a need for a more talented and skilled workforce. Problem-solving, programming/coding and "soft" social skills are becoming a premium in the industry.

It is increasingly harder to find the right talent. Add continuous rising salaries to the equation with low unemployment rates – this makes the situation even more difficult. Many organizations, even those with strong brand names now have to get more creative in figuring out ways to attract talent. EVP (employee value proposition) has become more than just salary and a job at a global brand. Wellness benefits, work-life balance, career-mapping, are all among very important fringe benefits necessary to lure the top talent.

Another strong tendency is the shifting focus form Nordic companies, which dominated Lithuania's industry for a decade, to US companies. As typical „GBSCS" hubs in CEE get more and more saturated, international companies look for new locations beyond the mature hotspots.

Poland:

There are several organizations oriented on „GBSCS". The main include:

•ABSL association: https://absl.pl/

•Pro Progressio foundation https://www.proprogressio.pl/pl/

•Aspire https://www.aspire.org.pl/ (focus on Kraków area)

•CEE Business Media

Most of the consulting companies, including BIG4, Poland have „GBSCS" oriented services.

Slovakia:

Yes, AmCham BSCF is the official business forum – an umbrella sectoral association, represent-ing over 90 % of all FTEs in the sector in Slovakia. „GBSCS" market started to flourish in Slo-vakia after year 2000, when first big investors such as IBM, AT&T or Dell started to explore the business opportunities, mostly based on

a favorable ration between the labor costs and skills availability. Currently, te majority of „GBSCS"s is still clustered in Bratislava and Košice. However, investors are gradually discovering advantages of regional hubs in Nitra, Žilina, Prešov, Komárno, Banská Bystrica, Nové Zámky, Považská Bystrica and other cities. In the context of Central and Eastern Europe, Slovakia is noteworthy for having a significant number of X-Large „GBSCS"s (employing more than a 1,000 people). Together with the medium-sized they present the majority of all „GBSCS"s in Slovakia.

3. Author of dissertation distinguished 7 macroeconomic indicators groups, on which GBSCs in selected CEE countries (Czech Republic, Hungary, Lithuania, Poland, Romania, Slovakia) can have economic impact. Please find the macroeconomic indicators and more detailed explanation on them below. Please also find some statistics and comments on macroeconomic indicators in Table 1, Table 2 and Table 3, it is for your knowledge what is dissertation about. I kindly ask you to express your opinion on how GBSCs in your counrty impact these 7 macroeconomic indicators groups (please rank the importance from 1 to 4 and comment). If possible, complement statistics of your country or indicate the source where more statistics can be found.

1. Labor market indicators

» *employment in GBSCs: employment restructuring, number of working places enhanced by increasing GBSCs number– changes from year to year and projections, general employment / GBSCs employment ratio etc.*

» *Impact of GBSCs on youth employment indicators*

» *Employment of social sciences graduates in GBSCs*

» *Salaries in GBSCs compared to national minimum and average salaries*

» *GBSCs job related and other taxes*

2. Spending and consumption indicators

» *Increasing purchasing power of GBSCs employees and family members*

» *Increasing purchasing power of youth employed in GBSCs*

» *Increasing purchasing power of secondary and tertiary chains according to multiplier effect*

» *Spending and consumption trajectories changes influenced by employment and increase in wages in GBSCs*

3. Migration indicators

Slovakia:

» *GBSCs working places impact on preventing of brain drain*

» *GBSCs impact on lower emigration level*

» *GBSCs development and impact on re-emigration level*

4. Life quality indicators

» *Income and respectable working places/conditions in GBSCs*

» *Personal development and learning in international environment opportunities*

» *Attractive motivational packages*

» *Health/family/respect-oriented culture and values*

» *Respectable compensation for work*

» *Sustainability emphasized in GBSCs*

5. Cross-sectorial growth indicators

» *Real estate market growth influenced by building and rent of premises for developing and new GBSCs*

» *Catering market growth influenced by GBSCs*

» *Cleaning market growth influenced by GBSCs*

» *Transportation (both air and land) services market growth influenced by GBSCs*

» *Tourism market growth influenced by GBSCs*

» *Accomodation market growth influenced by GBSCs*

» *Leisure time market growth influenced by GBSCs (team buildings, massive sport events and other team activities)*

» *Education services and conferences market growth influenced by GBSCs*

» *Other secondary services market growth influenced by growth of GBSCs*

6. Regional development indicators

» *Opportunities for rising stars cities other than capital*

» *Opportunities for youth from province*

» **7. GDP related indicators**

» *Yearly GDP growth influenced by GBSCs*

» *GBSCs investment as percentage of GDP*

Lithuania:

	1-low importance	2-important	3-very important	4-extremely important	Comment
1. Labor market indicators	☐	☐	☒	☐	
2. Spending and consumption indicators	☐	☐	☐	☒	
3. Migration indicators	☒	☐	☐	☐	
4. Life quality indicators	☐	☐	☒	☐	
5. Cross-sectorial growth indicators	☐	☐	☒	☐	
6. Regional development indicators	☐	☒	☐	☐	
7. GDP related indicators	☐	☒	☐	☐	

Poland:

	1-low importance	2-important	3-very important	4-extremely important	Comment
1. Labor market indicators	☐	☐	☒	☐	Fisrt of all, highest impact on the below: Impact of GBSCs on youth employment indicators Salaries in GBSCs compared to national minimum and average salaries
2. Spending and consumption indicators	☐	☐	☒	☐	Increasing purchasing power of GBSCs employees and family members Increasing purchasing power of youth employed in GBSCs
3. Migration indicators	☐	☐	☐	☐	GBSCs working places impact on preventing of brain drain GBSCs impact on lower emigration level https://stat.gov.pl/obszary-tematyczne/ludnosc/migracje-zagraniczne-ludnosci/
4. Life quality indicators	☐	☐	☒	☐	
5. Cross-sectorial growth indicators	☐	☐	☒	☐	
6. Regional development indicators	☐	☒	☐	☐	Important, however in some cases the disproportion between bigger and smaller cities is even growing.
7. GDP related indicators	☐	☐	☐	☐	Sorry, but I do not have this data.

Slovakia:

	1-low importance	2-important	3-very important	4-extremely important	Comment
1. Labor market indicators	☐	☐	☐	☒	Avarage brutto salary rate in GBSCs in Slovakia is approx. €1830 compared to national average brutto salary of €1100.
2. Spending and consumption indicators	☐	☐	☒	☐	Higher spending and consumption has been generally recognized in the city of Košice, the second largest business hub in Slovakia, where GBSCs significantly contributed to the boost of local economy and inhabitants´ well-being.
3. Migration indicators	☐	☒	☐	☐	So far, the impact on brain-drain prevention has not been significant. GBSCs employ predominantly Slovak citizens; there are only 10% of foreigners among staff whereas those from the EU are in majority (66%).
4. Life quality indicators	☐	☐	☐	☒	Very important – annually Slovakia-based GBSCs occupy first three places in the nation-wide competition „Best Employer" organized by the company Profesia.sk
5. Cross-sectorial growth indicators	☐	☐	☒	☐	Again, similarly to question 3, this is extremelly visible in the city of Košice, where we spot secondary services growth e.g. in leisure activities, tourism and airline industry.
6. Regional development indicators	☐	☐	☒	☐	Again, Košice is a great example, but also other smaller regional capitals such Nitra, Trnava or Banská Bystrica are the ones slowly but surely profiting from GBSCs market growing.
7. GDP related indicators	☐	☐	☒	☐	However we do not have clear data on yearly GDP growth influenced by GBSCs in Slovakia. We have tracked the annual contribution to the Slovak economy measured on indicators such as employee income tax, social insurance contribution or salaries expanditures. Concrete data to be found on amcham.sk in AmCham BSCF flyer 2019.

4. Additional country specific questions (only for Hungary, Lithuania and Slovakia):

Lithuania:

» 1. Lithuania, Hungary and Slovakia show extremely high re-emigration rates (please see Table 3 and comment below). Please express your opinion if working places offered by GBSCs in Lithuania could be the reason of high re-emigration level of Lithuanian nationals? Please present researches on this topic (if any).

<u>Slovakia:</u>

» *1. Lithuania, Hungary and Slovakia show extremely high re-emigration rates (please see Table 3 and comment below). Please express your opinion if working places offered by GBSCs in Slovakia could be the reason of high re-emigration level of Slovak nationals? Please present researches on this topic (if any).*

» *2. Author of dissertation found different life quality indicators analyzed in reports and researches of selected CEE countries (respectable working places/conditions in GBSCs, personal development and learning in international environment opportunities, attractive motivational packages, health/family/respect-oriented culture and values, respectable compensation for work, sustainability emphasized in GBSCs etc.). Could you please distinguish which life quality indicators are being influenced by GBSCs in Slovakia?*

1.So far, the impact on brain-drain prevention (or re-emigration rate) has not been signifi-cant according to our opinion. „GBSCS"s employ predominantly Slovak citizens, cur-rently it is 90% of all FTEs in BSC sector in Slovakia. As a "GBSCS" community, since 2019 AmCham BSCF has been closely cooperating with the Government repre-sentatives on „Work in Slovakia – Good Idea" program to attract skilled Slovaks work-ing/studying accross EU to return to the „GBSCS" industry in Slovakia.

2.Life quality indicators being influenced by „GBSCS"s in Slovakia: respectable com-pensation for work, family and health „work-life balance ", attractive motivational packages, remuneration and benefits

5. Do you find the dissertation topic and information presented in this questionnaire useful on your country level? Please answer „yes" or „no" and comment.

Lithuania:

Yes, the dissertation topic is useful. The more studies and data we have about „GBSCS"s impact on our economy, the better we can work and educate the government and general population on how „GBSCS"s contribute to improving people's lives.

The statistics provided could be explained better and sourced.

Poland:

Yes, as I am not aware of any studies covering the dissertation topic.

Slovakia:

Yes, definitely, because of the lack of „official"country level data and analysis of the macroeco-nomic impact of „GBSCS" industry

6. Would you be interested in receiving of final dissertation copy when it is finished? Please indicate postal address where it can be sent if applicable.

Lithuania:
Yes. "Invest Lithuania", Upes g. 23, Vilnius
Poland:
Please send copy to: monika.grzelak@paih.gov.pl
Slovakia:
Yes, definitely. We will highly appreciate not only the printed copy, but (if possible) also the .pdf format to be available online for Slovakia-based „GBSCS" companies. Postal address for deliv-ery:
Peter Rusiňák
American Chamber of Commerce in the Slovak Republic
Hotel Crowne Plaza,
1st floor Hodžovo námestie 2
811 06 Bratislava Slovak Republic

7. Do you have other thoughts, recommendations or useful information/links?

Lithuania:
As far as I understand you are trying to draw conclusions that growth in „GB-SCS"s impacts re-emigration, or "reverse brain drain" in the countries? Perhaps diving deeper and understanding migration patterns, and what the returnees do when they come back to their home country would add significant weight to your argument(s).
Would also suggest to use one source (EU statistics, for example) for emigration data, if you are not already. https://ec.europa.eu/eurostat/en/web/products-datasets/-/

Slovakia:

Thank you, Anna for the entire effort to put together a holistic and complete analysis of the „GBSCS" impact on macroeconomic level in CEE – highly appreciated!

Attached I am also providing you with the latest set of data (BSCF flyer 2019) published in Oc-tober 2019 in Slovakia regarding „GBSCS" sector.

8. Please confirm that the following data can be revealed in dissertation: expert's name, surname, institution, position in institution, country. Please inform if any of these data shall remain anonymous

Lithuania:

Laisvis Makulis, Head of Business Services & ICT at Invest Lithuania

Poland:

Please note this is not an official statement/ comment of the Polish Investment and Trade Agen-cy. I'm happy to help based on my personal experience and being involved in projects related to BSS sector, however please do not quote the Agency.

Slovakia:

The following data can be revealed in dissertation:

Peter Rusiňák

American Chamber of Commerce in the Slovak Republic

policy officer and Business Service Center Forum (BSCF) coordinator

Slovakia

Appendix 20. *SEB Global Services Business Case as Example of Multiplier Effect of GBSCs Impact on Macroeconomic Indicators in Lithuania*

SEB Global Services Vilnius	Total number of jobs in SEB Global Services: 1200
Value/ gain created in other businesses affected by SEB Global Services Vilnius:	Expression of value/gain created in businesses affected by SEB Global Services Vilnius:
Real estate market: Technopolis Ozas leasable spaces	Significant part of Technopolis tenants are GBSCs, the expansion of these businesses encouraged the emergence of new office buildings. SEB Global Services, who is currently occupying significant part of few buildings in Technopolis Ozas, will move and occupy two thirds of the new building NOVA, where such services will be at tenants disposal: conference venue, reception, security service, cleaning, gym, food market, cafe, parking spaces etc.
Catering market: restaurants, cafes in Technopolis Ozas and other catering services providers for business dinners, sports event, team buildings etc.	- Contribution to Technopolis restaurants revenue: 300-900 lunches per day = 30,000-90,000 EUR per month. - Contribution to Technopolis cafes revenue: 100-300 cafe customers spend 200-600 EUR per day = 4,000-12,000 EUR per month. - Contribution to smaller catering businesses such as food trucks (burgers, salads, kebab etc.), approximately at least 6,000 EUR revenue per month. - Bussiness dinners approximately 1,200 EUR per month. - Contribution to working places created in Technopolis restaurants, cafes and other catering services providers. - Contribution to other catering services growth due to other company's events such as annual sports event, team buildings.

Cleaning market.	SEB Global Services Vilnius creates 21 cleaners working places and additionally creates working place for cleaning supervisors and additional value for other cleaning market players (for instance, cleaning tools providers). Minimum monthly cleaning market revenue stimulated by SEB Global Services Vilnius is minimum 12,747.00 EUR (according to minimum monthly salary in Lithuania), but most likely is around 21,033.60 EUR (according to hourly cleaning rate in Poland and Czech Republic).
Education services and conferences market.	- Contribution to conference market: approximately at least 333,33-1,500 EUR per month plus charge for conference venue. - Contribution to other education services (Swedish language courses, different trainings, personnel development events etc.).
Transportation (both air and land) services market.	- Approximately 450 EUR per month on taxi services. - Contribution to other land and air transport, public transport services.
Tourism market.	- Approximately 66 EUR per month on excursions in Vilnius. - Contribution to accommodation expenditures and other personal tourism expenditures of the guests of SEB Global Services Vilnius.
Postal services.	Supposedly insignificant gain/value.
Laundry services.	Supposedly insignificant gain/value for laundry services business (dry-cleaning boxes in Technopolis building).
Medical care services.	Sensitive information about private insurance holders (SEB Global Services Vilnius employees). Supposedly significant value/gain for private medical services providers.
Sports/wellness/health Centers services.	Sensitive information about private insurance holders (SEB Global Services Vilnius employees). Supposedly significant value/gain for private sports/wellness/health services providers.

Technical support services (plumbers, electricians, security and other support staff).	SEB Global Services Vilnius creates 15 technical support working places.
Archiving services.	Supposedly insignificant gain/value.
Gas, water supply services.	Supposedly significant gain/value.
Other secondary services.	Other secondary services, which are affected by SEB Global Services Vilnius, but not evaluated by author due to lack of information or sensitiveness of it.
SEB Global Services Vilnius	**Total number of jobs in SEB Global Services: 1200**
Value/ gain created in other businesses affected by SEB Global Services Vilnius:	Expression of value/gain created in businesses affected by SEB Global Services Vilnius:
Real estate market: Technopolis Ozas leasable spaces	Significant part of Technopolis tenants are GBSCs, the expansion of these businesses encouraged the emergence of new office buildings. SEB Global Services, who is currently occupying significant part of few buildings in Technopolis Ozas, will move and occupy two thirds of the new building NOVA, where such services will be at tenants disposal: conference venue, reception, security service, cleaning, gym, food market, cafe, parking spaces etc.

Catering market: restaurants, cafes in Technopolis Ozas and other catering services providers for business dinners, sports event, team buildings etc.	- Contribution to Technopolis restaurants revenue: 300-900 lunches per day = 30,000-90,000 EUR per month. - Contribution to Technopolis cafes revenue: 100-300 cafe customers spend 200-600 EUR per day = 4,000-12,000 EUR per month. - Contribution to smaller catering businesses such as food trucks (burgers, salads, kebab etc.), approximately at least 6,000 EUR revenue per month. - Bussiness dinners approximately 1,200 EUR per month. - Contribution to working places created in Technopolis restaurants, cafes and other catering services providers. - Contribution to other catering services growth due to other company's events such as annual sports event, team buildings.
Cleaning market.	SEB Global Services Vilnius creates 21 cleaners working places and additionally creates working place for cleaning supervisors and additional value for other cleaning market players (for instance, cleaning tools providers). Minimum monthly cleaning market revenue stimulated by SEB Global Services Vilnius is minimum 12,747.00 EUR (according to minimum monthly salary in Lithuania), but most likely is around 21,033.60 EUR (according to hourly cleaning rate in Poland and Czech Republic).
Education services and conferences market.	- Contribution to conference market: approximately at least 333,33-1,500 EUR per month plus charge for conference venue. - Contribution to other education services (Swedish language courses, different trainings, personnel development events etc.).
Transportation (both air and land) services market.	- Approximately 450 EUR per month on taxi services. - Contribution to other land and air transport, public transport services.

Tourism market.	- Approximately 66 EUR per month on excursions in Vilnius. - Contribution to accommodation expenditures and other personal tourism expenditures of the guests of SEB Global Services Vilnius.
Postal services.	Supposedly insignificant gain/value.
Laundry services.	Supposedly insignificant gain/value for laundry services business (dry-cleaning boxes in Technopolis building).
Medical care services.	Sensitive information about private insurance holders (SEB Global Services Vilnius employees). Supposedly significant value/gain for private medical services providers.
Sports/wellness/health Centers services.	Sensitive information about private insurance holders (SEB Global Services Vilnius employees). Supposedly significant value/gain for private sports/wellness/health services providers.
Technical support services (plumbers, electricians, security and other support staff).	SEB Global Services Vilnius creates 15 technical support working places.
Archiving services.	Supposedly insignificant gain/value
Gas, water supply services.	Supposedly significant gain/value.
Other secondary services.	Other secondary services, which are affected by SEB Global Services Vilnius, but not evaluated by author due to lack of information or sensitiveness of it.

Appendix 21. *SEB Global Services Vilnius Contribution to Green Statistics Enhanced by Technopolis in 2019*

Consumption of electricity in Technopolis buildings: - ALFA - 1 095 935 kWh - BETA - 1 450 133 kWh - GAMA - 311 508 kWh - DELTA - 3 319 766 kWh - PENTA - 1 841 707 kWh
The following amount of electricity was generated by Technopolis buildings solar panels and subsequently consumed: -ALFA – 72300.61 kWh (or =saved 49.182 tons of CO_2 gas=saved 271 tree to cover this amount of gas) -BETA – 51563.3 kWh (or =saved 35.068 tons of CO_2 gas=saved 193 trees to cover this amount of gas) -GAMA – 32700.8 kWh (or =saved 24.525 tons of CO_2 gas=saved 122 trees to cover this amount of gas) -PENTA – 26504.2 kWh (or =saved 22.244 tons of CO_2 gas=saved 99 trees to cover this amount of gas)
50.18 tons of coffee grounds were collected by employees in Technopolis buildings and buildings neighbors – this let produce 28,050.62 kWh of electricity.

**Deposit bottles collected in Technopolis buildings, profit from which was dona-
ted to public institution „Lesė":**

-ALFA:
PET packs: 1,030
Metal packs: 1,131
Glass packs: 690
-BETA:
PET packs: 1,244
Metal packs: 2,271
Glass packs: 0
-DELTA:
PET packs: 2,436
Metal packs: 1,887
Glass packs: 240
-PENTA:
PET packs: 2,140
Metal packs: 306
Glass packs: 1,143
-TOTAL in Technopolis:
PET packs: 7,218
Metal packs: 5,917
Glass packs: 2,167

Source: *Expert from Technopolis, 2020*

Appendix 22. *Data Set For Panel Data Analysis, 2007-2019*

Country	Year	X_1 Employment in GBSCs	X_2 Number of GBSCs	Y_1 Unemployment rate (percentage of total population)	Y_2 Youth unemployment rate (15 to 24 years unemployed as percentage of total population)	Y_3 Total receipts from taxes and social contributions (social security funds), million EUR	Y_4 Annual net earnings (single person without children earning 100% of the average earning)	Y_5 Final consumption expenditure of households, current prices, million EUR	Y_6 Reemigrated nationals	Y_7 GDP at market prices, current prices, EUR per capita
Czech Republic	2007	-	-	-	-	-	6,962.34	66,388.6	-	-
	2008	-	-	-	-	-	8,345.94	78,913.8	-	-
	2009	-	-	-	-	-	8,286.75	75,087.9	-	14,260
	2010	-	-	4.6	5.7	-	8,812.03	79,894.0	-	15,020
	2011	-	-	4.2	5.4	7,829.8	9,234.77	83,941.4	-	15,740
	2012	-	-	4.4	6.1	7,766.0	9,275.22	82,894.3	1,691	15,470
	2013	-	-	4.5	6.0	8,093.1	8,961.78	81,333.3	1,736	15,170
	2014	50000	-	3.9	5.1	8,060.0	8,674.36	78,191.3	3,135	15,000
	2015	59000	-	3.3	4.1	8,564.7	9,008.76	81,903.4	3,333	16,080
	2016	65000	180	2.6	3.4	9,530.7	9,449.38	86,008.1	2,695	16,790
	2017	75000	200	1.9	2.5	10,507.4	10,296.87	93,851.6	2,430	18,330
	2018	100000	219	1.5	2.0	11,860.9	11,256.33	101,750.7	2,276	19,850
	2019	112000	310	1.3	1.7	12,613.6	11,836.53	107,520.7	2,231	20,990

Hungary	2007	-	-	-	-	-	5,249.28	55,924.3	-	-
	2008	-	-	-	-	-	5,734.59	58,794.8	-	-
	2009	-	-	-	-	-	5,409.39	51,659.0	-	9,420
	2010	-	104	6.1	6.6	-	6,256.57	53,677.9	-	9,960
	2011	-	114	6.1	6.3	2,431.4	6,146.32	55,116.1	-	10,230
	2012	-	125	6.2	7.2	2,394.6	6,369.22	54,889.1	4,194	10,080
	2013	-	135	5.8	7.3	2,277.4	6,475.08	54,295.5	9,354	10,310
	2014	34000	145	4.5	6.0	2,267.4	6,478.42	54,485.6	11,356	10,750
	2015	41700	153	4.1	5.4	2,492.2	6,703.57	56,611.4	14,810	11,450
	2016	43800	164	3.1	4.2	2,596.9	7,138.72	59,501.3	16,215	11,830
	2017	54500	174	2.6	3.5	2,748.6	8,023.72	64,698.8	20,906	12,960
	2018	61000	179	2.3	3.3	2,911.1	8,586.94	68,018.7	23,401	13,910
	2019	69900	186	2.2	3.7	3,107.0	9,562.10	73,385.0	23,172	14,950
Lithuania	2007	-	16	-	-	-	4,714.12	18,167.8	-	-
	2008	-	19	-	-	-	5,667.32	20,761.9	-	-
	2009	-	22	-	-	-	5,361.47	17,987.1	-	8,500
	2010	-	23	11.1	10.2	-	5,245.02	17,896.6	-	9,050
	2011	-	27	9.8	9.2	147.3	5,401.30	19,657.0	-	10,340
	2012	-	32	8.6	7.8	151.6	5,635.73	20,857.2	17,357	11,180
	2013	-	36	7.6	6.9	112.8	5,954.89	21,846.6	18,975	11,850
	2014	8800	45	7.1	6.6	125.0	6,284.47	22,650.1	19,528	12,480
	2015	11100	52	6.1	5.5	146.5	6,651.85	23,339.5	18,383	12,860
	2016	13200	60	5.3	5.1	145.6	7,217.25	24,507.1	14,207	13,560
	2017	15000	70	4.8	4.6	148.4	7,897.69	26,247.9	10,155	14,950
	2018	17000	78	4.3	4.1	163.7	8,691.07	27,934.8	16,592	16,240
	2019	19300.0	81	4.4	4.4	183.0	9,795.27	29,448.0	20,412	17,470

	Year									
Poland	2007	-	-	-	-	-	6,163.20	189,036.4	-	-
	2008	-	-	-	-	-	7,195.04	225,019.1	-	-
	2009	-	-	-	-	-	6,093.94	193,798.5	-	8,240
	2010	-	-	5.8	8.2	-	6,896.23	219,770.1	-	9,400
	2011	-	-	5.8	8.6	15,109.7	7,085.75	231,157.3	-	9,860
	2012	-	-	6.1	8.9	15,913.2	7,235.50	236,558.2	6,887	10,070
	2013	-	-	6.3	9.1	16,096.5	7,466.23	237,762.4	5,495	10,190
	2014	128000	470	5.5	8.1	17,204.6	7,991.17	244,463.1	5,443	10,630
	2015	150000	532	4.6	6.8	18,165.4	8,275.99	250,672.0	5,443	11,190
	2016	212000	593	3.8	6.1	18,520.4	8,200.43	248,802.1	2,473	11,110
	2017	244000	724	3.0	5.2	20,517.5	8,880.18	272,513.6	2,620	12,170
	2018	279000	831	2.4	4.1	22,560.8	9,596.61	288,325.9	2,976	12,960
	2019	338000	970	2.0	3.5	23,925.9	10,258.87	303,709.5	3,113	13,900
Romania	2007	-	-	-	-	-	-	84,277.1	-	-
	2008	-	-	-	-	-	3,960.48	91,626.2	-	-
	2009	-	-	-	-	-	3,578.21	77,320.8	-	6,150
	2010	-	-	4.2	6.9	-	3,874.37	78,553.3	-	6,200
	2011	-	-	4.2	7.3	1,410.6	4,085.51	81,606.5	-	6,540
	2012	-	-	4.1	6.9	1,340.0	4,004.03	82,068.0	-	6,620
	2013	-	-	4.2	7.1	1,440.8	4,343.03	86,954.5	-	7,190
	2014	-	-	4.1	7.1	1,492.4	4,611.94	90,487.9	-	7,570
	2015	109000	-	4.1	6.8	1,548.2	5,119.04	96,233.1	-	8,080
	2016	120000	-	3.5	5.8	1,594.6	5,520.64	103,962.5	-	8,630
	2017	125000	265	3.0	5.5	1,695.6	6,049.96	115,906.0	-	9,580
	2018	131000	280	2.5	4.8	1,714.0	6,669.59	126,731.0	-	10,500
	2019	-	-	2.4	5.0	1,818.3	7,230.50	135,547.9	-	11,510

	Year									
Slovakia	2007	-	-	-	-	-	6,408.40	30,470.1	-	-
	2008	-	-	-	-	-	7,023.15	36,659.8	-	-
	2009	-	-	-	-	-	7,264.52	37,844.4	-	11,830
	2010	-	-	9.0	10.4	-	7,493.69	38,576.4	-	12,560
	2011	-	-	8.5	10.1	519.4	7,642.75	39,256.9	-	13,210
	2012	-	-	8.8	10.4	537.3	7,797.27	40,732.8	-	13,610
	2013	-	-	9.0	10.4	570.8	7,936.58	40,801.4	-	13,750
	2014	-	-	8.4	9.2	578.3	8,250.32	41,472.2	-	14,080
	2015	-	-	7.3	8.4	454.2	8,426.75	42,627.6	3,223	14,710
	2016	25000	40	6.2	7.2	455.8	8,654.34	44,320.7	4,076	14,920
	2017	30000	60	5.2	6.3	470.1	8,961.03	46,995.6	4,277	15,540
	2018	37000	65	4.2	4.8	496.5	9,464.61	50,056.6	-	16,410
	2019	37000	65	3.7	4.8	520.1	9,975.02	52,766.0	-	17,220

Source: *Eurostat, 2021 (accessed in 2021 depending on the macroeconomic indicator),*

OECD, 2021 (accessed on 2021-03-06)

Appendix 23. *Data Stationarity Tests*

Variable	Conclusion	Levin, Lin & Chu test			Augmented Dickey-Fuller test		
		No constant	With constant	With constant and trend	No constant	With constant	With constant and trend
GBSCE	non-stationary	**8.20878** **(1.0000)**	**4.34469** **(0.9764)**	**-4.45789** **(0.0000)*****	**0.21278** **(1.0000)**	**-0.52834** **(0.2986)**	**6.6293** **(0.5657)**
GBSCE_G (annual change of GBSCE)	stationary	**-4.03635** **(0.0000)*****	**-5.63242** **(0.0000)*****	2.97197 (0.9985)	**23.8220** **(0.0215)****	**20.6458** **(0.0082)*****	8.41172 (0.3943)
GBSCS	stationary	7.15788 (1.0000)	**-3.94853** **(0.0000)*****	-1.17645 (0.1197)	0.80392 (0.9999)	**18.7541** **(0.0435)****	1.16281 (0.9787)
GBSCS_D	non-stationary	-	**-1.62718** **(0.0518)***	-2.76078 (0.0029)***	-	**4.45004** **(0.6160)**	5.82706 (0.4428)
EMPLR = GBSCE/ total employment	Non-stationary	8.90423 (1.0000)	-0.20244 (0.4198)	-4.66483 (0.0000)	0.29304 (1.0000)	4.14034 (0.9808)	7.13616 (0.5220)
EMPLR_D	Potentially stationary	-0.86941 (0.1923)	**-5.16355** **(0.0000)*****	5.18048 (1.0000)	13.4037 (0.3404)	**13.4003** **(0.0988)***	8.18233 (0.4159)
EMPLR_D2	stationary	**-7.99578** **(0.0000)*****	**-9.69091** **(0.0000)*****	-	**31.0202** **(0.0001)*****	**13.3732** **(0.0996)***	-
LMI	stationary	**-8.19998** **(0.0000)*****	-3.22792 (0.0006)***	**-9.75197** **(0.0000)*****	**41.0105** **(0.0000)*****	10.4528 (0.5763)	**29.7207** **(0.0031)*****
LMI_D	Potentially non-stationary	**-2.78614** **(0.0027)*****	**-5.15808** **(0.0000)*****	-0.61074 (0.2707)	**18.8014** **(0.0934)***	**20.5797** **(0.0569)***	5.19946 (0.9510)
LMI_D2	stationary	**-6.73435** **(0.0000)*****	**-4.36540** **(0.0000)*****	**-6.44351** **(0.0000)*****	**49.6605** **(0.0000)*****	**23.3422** **(0.0035)*****	**21.0781** **(0.0492)****
LMIY	Potentially stationary	**-6.09025** **(0.0000)*****	-1.41588 (0.0784)*	**-7.21794** **(0.0000)*****	**42.7544** **(0.0000)*****	7.98150 (0.7866)	**21.9434** **(0.0382)****
LMIY_D	Potentially non-stationary	**-3.24643** **(0.0006)*****	**-5.60897** **(0.0000)*****	-2.47479 (0.0067)***	**24.2919** **(0.0186)****	**21.2184** **(0.0473)****	10.1624 (0.6017)
LMIY_D2	stationary	**-8.30021** **(0.0000)*****	**-5.14643** **(0.0000)*****	-8.73051 (0.0000)***	**62.8155** **(0.0000)*****	**32,2701** **(0.0013)*****	29.3539 (0.0035)***
REC	Non-stationary	**9.88972** **(1.0000)**	**4.10062** **(1.0000)**	**-3.65289** **(0.0001)*****	**1.52329** **(0.9999)**	**1.94834** **(0.9995)**	**13.7113** **(0.3195)**
REC_D	stationary	**-1.99902** **(0.0228)****	**-5.62737** **(0.0000)*****	-9.15870 (0.0000)***	**20.1546** **(0.0642)***	**26.7077** **(0.0085)*****	22.5611 (0.0317)**
ANEC	Non-stationary	**6.27291** **(1.0000)**	**9.30556** **(1.0000)**	**2.32243** **(0.9899)**	**0.13518** **(1.0000)**	**0.24677** **(1.0000)**	**2.29489** **(0.9988)**

ANEC_D	Non-stationary	-2.47250 (0.0067)***	-4.50798 (0.0000)***	-12.5489 (0.0000)***	19.1278 (0.0855)*	30.9297 (0.0000)***	56.5709 (0.0000)***
SCI	Non-stationary	11.4899 (1.0000)	3.49978 (0.9998)	-0.91190 (0.1809)	0.19916 (1.0000)	0.60706 (1.0000)	7.68392 (0.8093)
SCI_D	stationary	-4.48011 (0.0000)***	-9.29309 (0.0000)***	-12.3952 (0.0000)***	35.0792 (0.0000)***	58.8045 (0.0000)***	72.7308 (0.0000)***
MI	Non-stationary	1.01206 (0.8442)	-3.07934 (0.0010)**	-1.78146 (0.0374)	7.23555 (0.7030)	15.3457 (0.0528)++	3.69818 (0.8833)
MI_D	stationary	-6.93788 (0.0000)***	-3.14729 (0.0008)***	-3.13635 (0.0009)***	35.6821 (0.0000)***	11.0890 (0.1967)	16.1400 (0.0404)**
GDPI	Non-stationary	12.0670 (1.0000)	6.09580 (1.0000)	2.60546 (0.9954)	0.20001 (1.0000)	0.13245 (1.0000)	1.81914 (0.9996)
GDPI_D	potentially stationary	0.23137 (0.5915)	-1.06024 (0.1445)	-4.94578 (0.0000)***	10.2905 (0.5905)	10.6766 (0.5568)	19.4197 (0.0789)*

*Notes: 1) the table contains critical values of the respective tests and their p-values in brackets, 2) *** maeans that the null hypothesis (assuming unit root) is rejected at 1% significance level; ** – 5% significance level; * – 10% significance level, 3) Values in bold mark estimations that were most important in concluding on data stationarity for each particular variable, taking into account, e.g. for the first differences, model with a constant and a trend is less relevant in most cases. 4) „_D" marks first differences (e.g. GDPI_d (t) = GDPI(t) – GDPI (t-1), where t = 1, 2, …, T).*

Appendix 24. *Tests Correlation Coefficients of the Initial Variables and their Stationary Transformations*

	GBSCE	GBSCS	GBSCE_G	EMPLR	EMPLR_D	EMPLR_D2	LMI	LMIY	REC	ANEC	SCI	MI	GDPI	REC_D	ANEC_D	SCI_D	MI_D	GDPI_D
GBSCE	1	0.9907	0.22	0.5563	0.5041	0.1601	-0.4286	-0.023	0.9405	0.4228	0.9481	-0.6496	-0.1523	0.8093	-0.0298	0.7562	-0.1816	-0.1157
GBSCS		1	0.1756	0.4678	0.4273	0.1162	-0.4939	-0.2362	0.9484	0.547	0.9764	-0.6138	0.0677	0.8128	0.1429	0.7778	-0.2022	-0.0343
GBSCE_G			1	0.0334	0.7822	0.8075	0.1152	0.2279	0.2289	-0.0675	0.2287	-0.2071	-0.1672	0.0221	-0.3112	-0.1587	-0.2268	-0.277
EMPLR				1	0.6246	0.1067	-0.8375	-0.7728	0.4896	0.9139	0.3569	-0.4168	0.6655	0.5276	0.5157	0.5284	-0.0011	0.5324
EMPLR_D					1	0.7243	-0.3727	-0.2492	0.4905	0.4937	0.4183	-0.4249	0.2366	0.3619	0.0836	0.2085	-0.1756	0.1204
EMPLR_D2						1	-0.0505	0.0261	0.1392	0.0763	0.1482	-0.0601	-0.0513	-0.0111	0.1016	-0.1645	-0.0303	0.0188
LMI							1	0.8736	-0.3948	-0.8572	-0.3104	0.2795	-0.6676	-0.5217	-0.579	-0.3481	-0.0194	-0.3423
LMIY								1	-0.0041	-0.7912	0.103	0.0016	-0.8518	-0.264	-0.6343	-0.1219	-0.0539	-0.5369
REC									1	0.4932	0.9712	-0.7698	-0.0153	0.8477	0.0271	0.7042	-0.3123	-0.1232
ANEC										1	0.3758	-0.4066	0.8539	0.6031	0.5481	0.3388	-0.102	0.511
SCI											1	-0.6636	-0.1362	0.763	0.0137	0.4336	-0.2737	-0.1738
MI												1	-0.0938	-0.6773	0.1639	-0.4293	0.4028	0.1293
GDPI													1	0.2131	0.6611	0.2421	-0.0339	0.6654
REC_D														1	0.2896	0.8949	-0.2086	0.2497
ANEC_D															1	0.6736	0.1195	0.7184
SCI_D																1	-0.0742	0.3649
MI_D																	1	0.1348
GDPI_D																		1

Note: insignificant values are marked in grey.

Appendix 25. *Estimation Results and Diagnostics, GBSCs Impact on Unemployment Rate (LMI)*

Pooled OLS

To eliminate autocorrelation in residuals additional lagged variable is added.

Model: Pooled OLS, using 34 observations

Included 6 cross-sectional units

Time-series length: minimum 2, maximum 9

Dependent variable: LMI

Robust (HAC) standard errors

	Coefficient	Std. Error	t-ratio	p-value	
const	−0.0336460	0.149224	−0.2255	0.8305	
GBSCS	−0.000314217	0.000156880	−2.003	0.1016	
LMI_1	0.894293	0.0193374	46.25	<0.0001	***

Mean dependent var	4.361765	S.D. dependent var	2.069550
Sum squared resid	3.172987	S.E. of regression	0.319929
R-squared	0.977551	Adjusted R-squared	0.976102
F(2, 5)	1503.595	P-value(F)	1.12e-07
Log-likelihood	−7.925229	Akaike criterion	21.85046
Schwarz criterion	26.42954	Hannan-Quinn	23.41206
rho	0.333388	Durbin-Watson	1.055911

Diagnostics with respect to pooled OLS

Diagnostics: using n = 6 cross-sectional units

Fixed effects estimator

allows for differing intercepts by cross-sectional unit

```
        coefficient   std. Error   t-ratio   p-value
   -------------------------------------------------------------
   const   0.0252708    0.356370     0.07091  0.9440
   GBSCS  −0.000163425  0.000846187  −0.1931  0.8484
```

LMI_1   0.875693   0.0419404   20.88   9.05e-018 ***

Residual variance: 2.61243/(34 − 8) = 0.100478

Joint significance of differing group means:
 $F(5, 26) = 1.11579$ with p-value 0.376388
(A low p-value counts against the null hypothesis that the pooled OLS model
is adequate, in favor of the fixed effects alternative.)

Variance estimators:
 between = 0.00481258
 within = 0.100478
Panel is unbalanced: theta varies across units

Random effects estimator
allows for a unit-specific component to the error term

	coefficient	std. Error	t-ratio	p-value
const	−0.0373295	0.190546	−0.1959	0.8460
GBSCS	−0.000295627	0.000284411	−1.039	0.3066
LMI_1	0.892242	0.0288290	30.95	7.09e-025 ***

Means of pooled OLS residuals for cross-sectional units:

unit 1:   -0.14918
unit 2:   0.12753
unit 3:   0.065914
unit 4:   -0.016239
unit 5:   -0.03718
unit 6:   -0.24311

Breusch-Pagan test statistic:
 $LM = 0.0100434$ with p-value = prob(chi-square(1) > 0.0100434) = 0.920172

(A low p-value counts against the null hypothesis that the pooled OLS model is adequate, in favor of the random effects alternative.)

Hausman test statistic:
 H = 0.903528 with p-value = prob(chi-square(2) > 0.903528) = 0.636505
(A low p-value counts against the null hypothesis that the random effects model is consistent, in favor of the fixed effects model.)

Panel estimation
Model: Fixed-effects, using 34 observations
Included 6 cross-sectional units
Time-series length: minimum 2, maximum 9
Dependent variable: LMI
Robust (HAC) standard errors

	Coefficient	Std. Error	t-ratio	p-value	
const	0.0252708	0.282446	0.08947	0.9322	
GBSCS	−0.000163425	0.000322207	−0.5072	0.6336	
LMI_1	0.875693	0.0455223	19.24	<0.0001	*

Mean dependent var	4.361765	S.D. dependent var	2.069550
Sum squared resid	2.612428	S.E. of regression	0.316983
LSDV R-squared	0.981517	Within R-squared	0.960380
Log-likelihood	−4.620539	Akaike criterion	25.24108
Schwarz criterion	37.45196	Hannan-Quinn	29.40534
rho	0.246269	Durbin-Watson	1.256750

Joint test on named regressors –
 Test statistic: $F_{(2, 5)}$ = 367.654
 with p-value = $P(F_{(2, 5)} > 367.654)$ = 3.7488e-06

Robust test for differing group intercepts –
 Null hypothesis: The groups have a common intercept
 Test statistic: Welch $F_{(5, 10.8)}$ = 1.59262
 with p-value = $P(F_{(5, 10.8)} > 1.59262)$ = 0.242588

Pesaran CD test for cross-sectional dependence –
Null hypothesis: No cross-sectional dependence
Asymptotic test statistic: z = 2.40961
with p-value = 0.0159698

Panel estimation: random effects

Model: Random-effects (GLS), using 34 observations
Included 6 cross-sectional units
Time-series length: minimum 2, maximum 9
Dependent variable: LMI
Robust (HAC) standard errors

	Coefficient	Std. Error	z	p-value	
const	−0.0373295	0.154774	−0.2412	0.8094	
GBSCS	−0.000295627	0.000165821	−1.783	0.0746	*
LMI_1	0.892242	0.0211793	42.13	<0.0001	***

Mean dependent var	4.361765	S.D. dependent var	2.069550
Sum squared resid	3.178182	S.E. of regression	0.315148
Log-likelihood	−7.953040	Akaike criterion	21.90608
Schwarz criterion	26.48516	Hannan-Quinn	23.46768
rho	0.246269	Durbin-Watson	1.256750

‚Between' variance = 0.00481258
‚Within' variance = 0.100478
mean theta = 0.109888
Joint test on named regressors –
Asymptotic test statistic: Chi-square(2) = 2372.84
with p-value = 0

Breusch-Pagan test –
Null hypothesis: Variance of the unit-specific error = 0
Asymptotic test statistic: Chi-square(1) = 0.0100434
with p-value = 0.920172

Hausman test –
 Null hypothesis: GLS estimates are consistent
 Asymptotic test statistic: Chi-square(2) = 1.44785
 with p-value = 0.484846

Model: Pooled OLS, using 34 observations
Included 6 cross-sectional units
Time-series length: minimum 2, maximum 9
Dependent variable: LMI
Robust (HAC) standard errors

	Coefficient	Std. Error	t-ratio	p-value	
const	0.282688	0.176820	1.599	0.1708	
GBSCS	−0.000384336	0.000155244	−2.476	0.0561	*
dt_10	−0.404844	0.126844	−3.192	0.0242	**
dt_11	−0.308632	0.0574227	−5.375	0.0030	***
dt_12	−0.270774	0.0719693	−3.762	0.0131	**
LMI_1	0.866509	0.0237995	36.41	<0.0001	***

Mean dependent var	4.361765	S.D. dependent var	2.069550
Sum squared resid	2.338992	S.E. of regression	0.289025
R-squared	0.983451	Adjusted R-squared	0.980496
F(5, 5)	8207.830	P-value(F)	8.90e-10
Log-likelihood	−2.741025	Akaike criterion	17.48205
Schwarz criterion	26.64021	Hannan-Quinn	20.60525
rho	0.241564	Durbin-Watson	1.274821

Appendix 26. *Estimation Results and Diagnostics, GBSCs Impact on Youth Unemployment Rate (LMIY)*

Pooled OLS

Model: Pooled OLS, using 34 observations

Included 6 cross-sectional units

Time-series length: minimum 2, maximum 9

Dependent variable: LMIY

Robust (HAC) standard errors

	Coefficient	Std. Error	t-ratio	p-value	
const	0.246815	0.300520	0.8213	0.4489	
GBSCS	−0.000476576	0.000155762	−3.060	0.0281	**
LMIY_1	0.869271	0.0420636	20.67	<0.0001	***

Mean dependent var	5.232353	S.D. dependent var	1.780487
Sum squared resid	7.537506	S.E. of regression	0.493098
R-squared	0.927950	Adjusted R-squared	0.923301
F(2, 5)	228.0447	P-value(F)	0.000012
Log-likelihood	−22.63393	Akaike criterion	51.26787
Schwarz criterion	55.84695	Hannan-Quinn	52.82947
rho	0.322494	Durbin-Watson	1.177989

Diagnostics with respect to pooled OLS

Diagnostics: using n = 6 cross-sectional units

Fixed effects estimator

allows for differing intercepts by cross-sectional unit

```
        coefficient  std. error  t-ratio  p-value
  ---------------------------------------------------------
  const    0.796353    0.653654    1.218   0.2340
  GBSCS   −0.00137606  0.00138583  −0.9929  0.3299
  LMIY_1   0.810063    0.0693246   11.69   7.54e-012 ***
```

Residual variance: 6.14205/(34 - 8) = 0.236233

Joint significance of differing group means:
 $F(5, 26) = 1.18143$ with p-value 0.345138
(A low p-value counts against the null hypothesis that the pooled OLS model
is adequate, in favor of the fixed effects alternative.)

Variance estimators:
 between = 0.009183
 within = 0.236233
Panel is unbalanced: theta varies across units

Random effects estimator
allows for a unit-specific component to the error term

```
        coefficient   std. error   t-ratio   p-value
  ------------------------------------------------------------
  const     0.248490    0.306696     0.8102  0.4240
  GBSCS   −0.000469225  0.000392829  −1.194  0.2414
  LMIY_1    0.867118    0.0452274    19.17   9.49e-019 ***
```

Means of pooled OLS residuals for cross-sectional units:

```
  unit  1:    -0.34633
  unit  2:     0.22714
  unit  3:    0.0057349
  unit  4:    0.0055518
  unit  5:     0.12167
  unit  6:    -0.2468
```

Breusch-Pagan test statistic:
 $LM = 0.00821892$ with p-value = prob(chi-square(1) > 0.00821892) = 0.927764
(A low p-value counts against the null hypothesis that the pooled OLS model
is adequate, in favor of the random effects alternative.)

Hausman test statistic:

H = 1.49604 with p-value = prob(chi-square(2) > 1.49604) = 0.473303
(A low p-value counts against the null hypothesis that the random effects
model is consistent, in favor of the fixed effects model.)

Panel estimation
Model: Fixed-effects, using 34 observations
Included 6 cross-sectional units
Time-series length: minimum 2, maximum 9
Dependent variable: LMIY
Robust (HAC) standard errors

	Coefficient	Std. Error	t-ratio	p-value	
const	0.796353	0.206863	3.850	0.0120	**
GBSCS	−0.00137606	0.000410961	−3.348	0.0204	**
LMIY_1	0.810063	0.0283354	28.59	<0.0001	***

Mean dependent var	5.232353	S.D. dependent var	1.780487
Sum squared resid	6.142050	S.E. of regression	0.486038
LSDV R-squared	0.941289	Within R-squared	0.905142
Log-likelihood	−19.15348	Akaike criterion	54.30695
Schwarz criterion	66.51784	Hannan-Quinn	58.47121
rho	0.199163	Durbin-Watson	1.399558

Joint test on named regressors -
Test statistic: F(2, 5) = 456.414
with p-value = P(F(2, 5) > 456.414) = 2.19039e-06

Robust test for differing group intercepts -
Null hypothesis: The groups have a common intercept
Test statistic: Welch F(5, 7.1) = 1.73871
with p-value = P(F(5, 7.1) > 1.73871) = 0.242288

Pesaran CD test for cross-sectional dependence -
Null hypothesis: No cross-sectional dependence
Asymptotic test statistic: z = 3.05676
with p-value = 0.00223744

Panel estimation: random effects

Model: Random-effects (GLS), using 34 observations
Included 6 cross-sectional units
Time-series length: minimum 2, maximum 9
Dependent variable: LMIY
Robust (HAC) standard errors

	Coefficient	Std. Error	z	p-value	
const	0.248490	0.286664	0.8668	0.3860	
GBSCS	−0.000469225	0.000164685	−2.849	0.0044	***
LMIY_1	0.867118	0.0393941	22.01	<0.0001	***

Mean dependent var	5.232353	S.D. dependent var	1.780487
Sum squared resid	7.541190	S.E. of regression	0.485450
Log-likelihood	−22.64224	Akaike criterion	51.28448
Schwarz criterion	55.86356	Hannan-Quinn	52.84608
rho	0.199163	Durbin-Watson	1.399558

'Between' variance = 0.009183
'Within' variance = 0.236233
mean theta = 0.0923776
Joint test on named regressors -
 Asymptotic test statistic: Chi-square(2) = 520.572
 with p-value = 9.1051e-114

Breusch-Pagan test -
 Null hypothesis: Variance of the unit-specific error = 0
 Asymptotic test statistic: Chi-square(1) = 0.00821892
 with p-value = 0.927764

Hausman test -
 Null hypothesis: GLS estimates are consistent
 Asymptotic test statistic: Chi-square(2) = 8.2239
 with p-value = 0.0163758

Model: Pooled OLS, using 34 observations

Included 6 cross-sectional units
Time-series length: minimum 2, maximum 9
Dependent variable: LMIY
Robust (HAC) standard errors

	Coefficient	Std. Error	t-ratio	p-value	
const	0.722896	0.467227	1.547	0.1825	
GBSCS	−0.000388425	0.000107105	−3.627	0.0151	**
dt_9	−0.505476	0.0481690	−10.49	0.0001	***
dt_10	−0.500183	0.302749	−1.652	0.1594	
dt_11	−0.464419	0.218992	−2.121	0.0874	*
dt_12	−0.617952	0.206667	−2.990	0.0304	**
LMIY_1	0.837392	0.0621320	13.48	<0.0001	***

Mean dependent var	5.232353	S.D. dependent var	1.780487
Sum squared resid	5.339143	S.E. of regression	0.444686
R-squared	0.948964	Adjusted R-squared	0.937622
Log-likelihood	−16.77189	Akaike criterion	47.54378
Schwarz criterion	58.22830	Hannan-Quinn	51.18751
rho	0.183672	Durbin-Watson	1.467724

Actual and fitted: LMI	Residual Q-Q plot
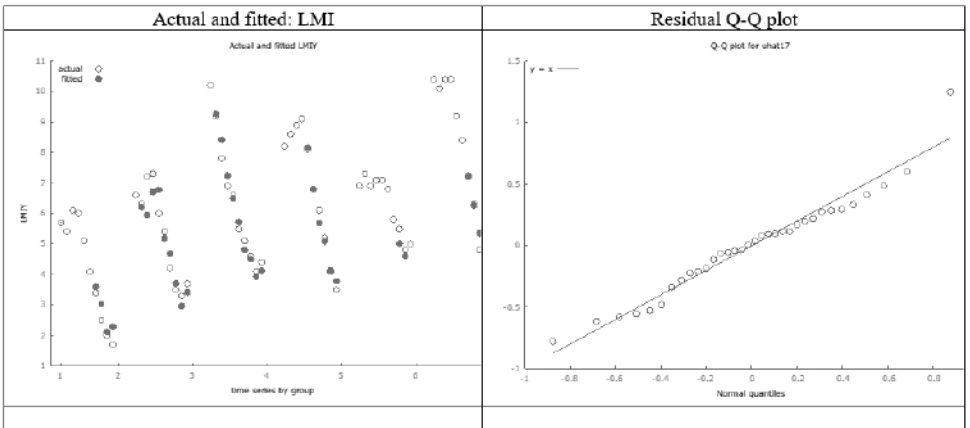
Appendix 27. *Estimation Results and Diagnostics, GBSCs Impact on Total Receipts from Taxes and Social Contributions (Social Security Funds) (REC)*

Pooled OLSModel: Pooled OLS, using 32 observations

Included 6 cross-sectional units

Time-series length: minimum 2, maximum 8

Dependent variable: REC_D

Robust (HAC) standard errors

	Coefficient	Std. Error	t-ratio	p-value	
const	−78.5527	116.565	−0.6739	0.5303	
GBSCS	2.03333	0.0909684	22.35	<0.0001	***

Mean dependent var	399.2156	S.D. dependent var	613.5287
Sum squared resid	4005783	S.E. of regression	365.4122
R-squared	0.656714	Adjusted R-squared	0.645271
F(1, 5)	499.6130	P-value(F)	1.90e-08
Log-likelihood	−233.2063	Akaike criterion	470.4125
Schwarz criterion	473.3440	Hannan-Quinn	471.3842
rho	0.358568	Durbin-Watson	1.071275

Diagnostics with respect to pooled OLS

Diagnostics: using n = 6 cross-sectional units

Fixed effects estimator

allows for differing intercepts by cross-sectional unit

```
          coefficient   std. error   t-ratio   p-value
   -------------------------------------------------------
    const     9.03667     151.024     0.05984   0.9528
    GBSCS     1.66056     0.609443    2.725     0.0116  **
```

Residual variance: 1.84159e+006/(32 - 7) = 73663.6

Joint significance of differing group means:

F(5, 25) = 5.87588 with p-value 0.00100966
(A low p-value counts against the null hypothesis that the pooled OLS model
is adequate, in favor of the fixed effects alternative.)

Variance estimators:
 between = 131255
 within = 73663.6
Panel is unbalanced: theta varies across units

Random effects estimator
allows for a unit-specific component to the error term

```
          coefficient  std. error  t-ratio  p-value
  ---------------------------------------------------------
  const     −21.4692    190.388    −0.1128  0.9110
  GBSCS       1.81234     0.458504   3.953   0.0004  ***
```

Means of pooled OLS residuals for cross-sectional units:

```
  unit  1:      628.7
  unit  2:     -157.5
  unit  3:    -32.376
  unit  4:    -12.765
  unit  5:    -415.83
  unit  6:    -21.889
```

Breusch-Pagan test statistic:
 LM = 4.15701 with p-value = prob(chi-square(1) > 4.15701) = 0.0414626
(A low p-value counts against the null hypothesis that the pooled OLS model
is adequate, in favor of the random effects alternative.)

Hausman test statistic:
 H = 0.165889 with p-value = prob(chi-square(1) > 0.165889) = 0.683791
(A low p-value counts against the null hypothesis that the random effects

model is consistent, in favor of the fixed effects model.)

Panel estimation

Model: Fixed-effects, using 32 observations

Included 6 cross-sectional units

Time-series length: minimum 2, maximum 8

Dependent variable: REC_D

Robust (HAC) standard errors

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	9.03667	66.3037	0.1363	0.8969	
GBSCS	1.66056	0.282181	5.885	0.0020	**

Mean dependent var	399.2156		S.D. dependent var	613.5287
Sum squared resid	1841589		S.E. of regression	271.4104
LSDV R-squared	0.842180		Within R-squared	0.228967
LSDV F(6, 25)	22.23476		P-value(F)	6.77e-09
Log-likelihood	−220.7725		Akaike criterion	455.5450
Schwarz criterion	465.8051		Hannan-Quinn	458.9459
rho	−0.302540		Durbin-Watson	2.294281

Joint test on named regressors -

Test statistic: $F(1, 5) = 34.63$

with p-value = $P(F(1, 5) > 34.63) = 0.00201322$

Robust test for differing group intercepts -

Null hypothesis: The groups have a common intercept

Test statistic: Welch $F(5, 6.7) = 11.3723$

with p-value = $P(F(5, 6.7) > 11.3723) = 0.0035652$

Pesaran CD test for cross-sectional dependence -

Null hypothesis: No cross-sectional dependence

Asymptotic test statistic: $z = -0.734071$

with p-value = 0.462905

Model 3.3: Fixed-effects, using 32 observations
Included 6 cross-sectional units
Time-series length: minimum 2, maximum 8
Dependent variable: REC_D

	Coefficient	Std. Error	t-ratio	p-value	
const	−203.090	294.954	−0.6885	0.4999	
GBSCS	1.81024	0.824405	2.196	0.0415	**
dt_6	156.243	263.239	0.5935	0.5602	
dt_7	81.8212	260.878	0.3136	0.7574	
dt_8	221.071	255.315	0.8659	0.3980	
dt_9	206.875	243.450	0.8498	0.4066	
dt_10	22.1371	197.564	0.1120	0.9120	
dt_11	308.668	180.779	1.707	0.1049	
dt_12	323.330	174.452	1.853	0.0803	*

Mean dependent var	399.2156		S.D. dependent var	613.5287
Sum squared resid	1351955		S.E. of regression	274.0595
LSDV R-squared	0.884141		Within R-squared	0.433966
LSDV F(13, 18)	10.56622		P-value(F)	6.59e-06
Log-likelihood	−215.8273		Akaike criterion	459.6545
Schwarz criterion	480.1748		Hannan-Quinn	466.4564
rho	−0.294455		Durbin-Watson	2.198811

Joint test on named regressors -

Test statistic: $F(1, 18) = 4.82158$

with p-value = $P(F(1, 18) > 4.82158) = 0.0414532$

Test for differing group intercepts -

Null hypothesis: The groups have a common intercept

Test statistic: $F(5, 18) = 6.20735$

with p-value = $P(F(5, 18) > 6.20735) = 0.00163696$

Wald joint test on time dummies -

Null hypothesis: No time effects

Asymptotic test statistic: Chi-square(7) = 6.51902

with p-value = 0.480613

Panel estimation: random effects

Model: Random-effects (GLS), using 32 observations (selected model)

Included 6 cross-sectional units

Time-series length: minimum 2, maximum 8

Dependent variable: REC_D

Robust (HAC) standard errors

	Coefficient	*Std. Error*	*z*	*p-value*	
const	−21.4692	170.757	−0.1257	0.8999	
GBSCS	1.81234	0.174638	10.38	<0.0001	***

Mean dependent var	399.2156		S.D. dependent var	613.5287
Sum squared resid	4097151		S.E. of regression	363.5466
Log-likelihood	−233.5671		Akaike criterion	471.1342
Schwarz criterion	474.0657		Hannan-Quinn	472.1059
rho	−0.302540		Durbin-Watson	2.294281

'Between' variance = 131255

'Within' variance = 73663.6

mean theta = 0.670967

Joint test on named regressors -

 Asymptotic test statistic: Chi-square(1) = 107.696

 with p-value = 3.13293e-25

Breusch-Pagan test -

 Null hypothesis: Variance of the unit-specific error = 0

 Asymptotic test statistic: Chi-square(1) = 4.15701

 with p-value = 0.0414626

Hausman test -

 Null hypothesis: GLS estimates are consistent

 Asymptotic test statistic: Chi-square(1) = 1.72698

 with p-value = 0.188797

Actual and fitted: LMI	Residual Q-Q plot
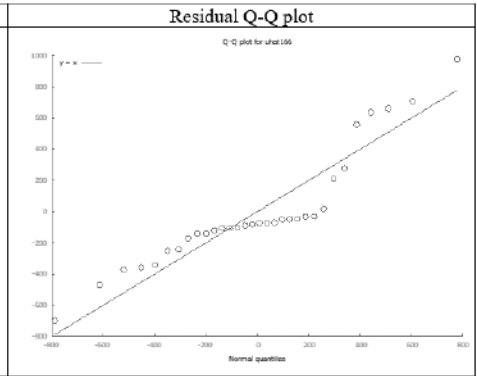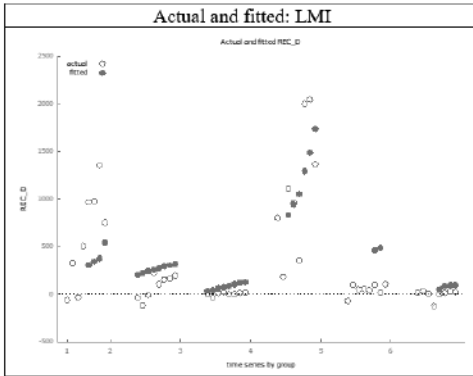
Appendix 28. *Estimation Results and Diagnostics, GBSCs Impact on Annual Net Earnings (Single Person Without Children Earning 100 % of the Average Earning) (ANEC)*

Pooled OLSModel: Pooled OLS, using 38 observations

Included 6 cross-sectional units

Time-series length: minimum 2, maximum 12

Dependent variable: d_ANEC

Robust (HAC) standard errors

	Coefficient	Std. Error	t-ratio	p-value	
const	414.008	33.6776	12.29	<0.0001	***
GBSCS	0.232395	0.116492	1.995	0.1026	

Mean dependent var	461.8813		S.D. dependent var	341.5937
Sum squared resid	4207562		S.E. of regression	341.8724
R-squared	0.025439		Adjusted R-squared	-0.001633
F(1, 5)	3.979764		P-value(F)	0.102601
Log-likelihood	−274.6010		Akaike criterion	553.2020
Schwarz criterion	556.4772		Hannan-Quinn	554.3673
rho	0.368363		Durbin-Watson	1.096559

Diagnostics with respect to pooled OLS

Diagnostics: using n = 6 cross-sectional units

Fixed effects estimator

allows for differing intercepts by cross-sectional unit

```
        coefficient   std. error   t-ratio   p-value
  --------------------------------------------------------
  const     179.985     164.633     1.093    0.2827
  GBSCS     1.36843     0.752714    1.818    0.0787  *
```

Residual variance: 3.60548e+006/(38 - 7) = 116306

Joint significance of differing group means:

F(5, 31) = 1.03534 with p-value 0.414444

(A low p-value counts against the null hypothesis that the pooled OLS model is adequate, in favor of the fixed effects alternative.)

Variance estimators:
between = 0
within = 116306
theta used for quasi-demeaning = 0

Random effects estimator
allows for a unit-specific component to the error term

```
        coefficient  std. error  t-ratio  p-value
  ---------------------------------------------------------
  const    414.008     74.2607    5.575   2.57e-06 ***
  GBSCS      0.232395   0.239736  0.9694   0.3388
```

Hausman test statistic:
H = 2.8617 with p-value = prob(chi-square(1) > 2.8617) = 0.0907116
(A low p-value counts against the null hypothesis that the random effects model is consistent, in favor of the fixed effects model.)
Panel estimation
Model: Fixed-effects, using 38 observations
Included 6 cross-sectional units
Time-series length: minimum 2, maximum 12
Dependent variable: d_ANEC
Robust (HAC) standard errors

	Coefficient	Std. Error	t-ratio	p-value	
const	179.985	123.345	1.459	0.2043	
GBSCS	1.36843	0.598760	2.285	0.0711	*

Mean dependent var	461.8813		S.D. dependent var	341.5937
Sum squared resid	3605481		S.E. of regression	341.0364
LSDV R-squared	0.164894		Within R-squared	0.096344
Log-likelihood	−271.6669		Akaike criterion	557.3338

Schwarz criterion	568.7969		Hannan-Quinn	561.4122
rho	0.183017		Durbin-Watson	1.286034

Joint test on named regressors -
Test statistic: $F(1, 5) = 5.22323$
with p-value = $P(F(1, 5) > 5.22323) = 0.0710532$

Robust test for differing group intercepts -
Null hypothesis: The groups have a common intercept
Test statistic: Welch $F(5, 10.8) = 1.25763$
with p-value = $P(F(5, 10.8) > 1.25763) = 0.348593$

Pesaran CD test for cross-sectional dependence -
Null hypothesis: No cross-sectional dependence
Asymptotic test statistic: $z = 1.25574$
with p-value = 0.209211

Model: Pooled OLS, using 38 observations
Included 6 cross-sectional units
Time-series length: minimum 2, maximum 12
Dependent variable: d_ANEC
Robust (HAC) standard errors

	Coefficient	Std. Error	t-ratio	p-value	
const	663.436	94.7735	7.000	0.0009	***
GBSCS	0.00861349	0.120224	0.07165	0.9457	
dt_2	289.600	92.7021	3.124	0.0261	**
dt_3	−969.475	92.3759	−10.49	0.0001	***
dt_5	−641.028	178.881	−3.584	0.0158	**
dt_6	−435.447	89.1366	−4.885	0.0045	***
dt_7	−451.662	156.635	−2.884	0.0344	**
dt_8	−379.378	196.922	−1.927	0.1120	
dt_9	−373.102	98.7095	−3.780	0.0129	**
dt_10	−346.582	133.948	−2.587	0.0490	**

Mean dependent var	461.8813	S.D. dependent var	341.5937
Sum squared resid	1797617	S.E. of regression	253.3784
R-squared	0.583634	Adjusted R-squared	0.449801
F(9, 5)	1.08e+16	P-value(F)	3.50e-40
Log-likelihood	−258.4430	Akaike criterion	536.8860
Schwarz criterion	553.2619	Hannan-Quinn	542.7124
rho	0.083863	Durbin-Watson	1.584753
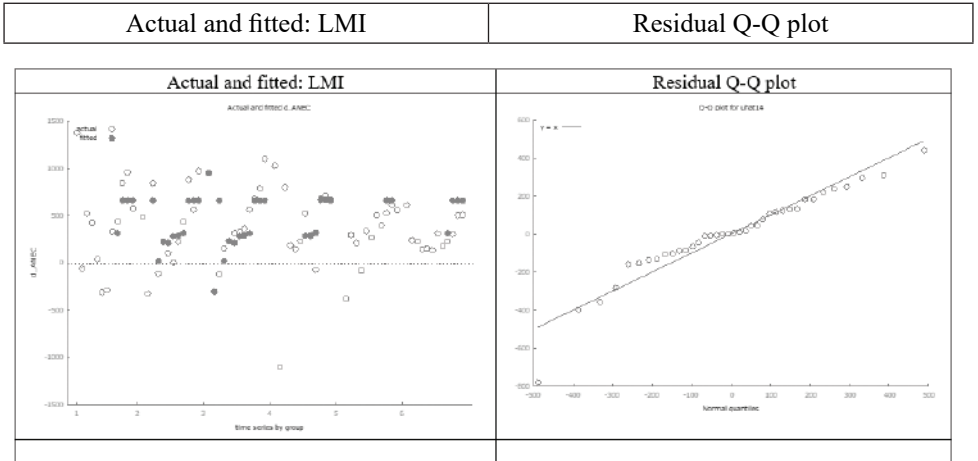
Actual and fitted: LMI	Residual Q-Q plot

Actual and fitted: LMI — Residual Q-Q plot

Model: Fixed-effects, using 38 observations (selected model)

Included 6 cross-sectional units

Time-series length: minimum 2, maximum 12

Dependent variable: d_ANEC

	Coefficient	Std. Error	t-ratio	p-value	
const	904.306	167.993	5.383	<0.0001	***
GBSCS	−0.604418	0.622299	−0.9713	0.3415	
dt_3	−1193.93	250.655	−4.763	<0.0001	***
dt_4	−509.875	188.691	−2.702	0.0127	**
dt_5	−847.994	187.359	−4.526	0.0002	***
dt_6	−637.509	185.951	−3.428	0.0023	***
dt_7	−649.433	184.820	−3.514	0.0019	***
dt_8	−570.713	170.111	−3.355	0.0027	***

391

dt_9	−548.703	162.992	−3.366	0.0027	***
dt_10	−447.790	124.467	−3.598	0.0015	***

Mean dependent var	461.8813		S.D. dependent var	341.5937
Sum squared resid	1200620		S.E. of regression	228.4750
LSDV R-squared	0.721911		Within R-squared	0.699084
LSDV F(14, 23)	4.264807		P-value(F)	0.001060
Log-likelihood	−250.7741		Akaike criterion	531.5483
Schwarz criterion	556.1121		Hannan-Quinn	540.2879
rho	−0.193918		Durbin-Watson	1.946337

Joint test on named regressors -

Test statistic: $F(9, 23) = 5.93703$

with p-value = $P(F(9, 23) > 5.93703) = 0.000266624$

Test for differing group intercepts -

Null hypothesis: The groups have a common intercept

Test statistic: $F(5, 23) = 1.67922$

with p-value = $P(F(5, 23) > 1.67922) = 0.179644$

Wald joint test on time dummies -

Null hypothesis: No time effects

Asymptotic test statistic: Chi-square(11) = 43.1151

with p-value = 1.03713e-05

Panel estimation: random effects

Model: Random-effects (GLS), using 38 observations

Included 6 cross-sectional units

Time-series length: minimum 2, maximum 12

Dependent variable: d_ANEC

Robust (HAC) standard errors

	Coefficient	Std. Error	z	p-value	
const	414.008	33.6776	12.29	<0.0001	***
GBSCS	0.232395	0.116492	1.995	0.0461	**

Mean dependent var	461.8813		S.D. dependent var	341.5937

Sum squared resid	4207562		S.E. of regression	337.2209
Log-likelihood	−274.6010		Akaike criterion	553.2020
Schwarz criterion	556.4772		Hannan-Quinn	554.3673
rho	0.183017		Durbin-Watson	1.286034

'Between' variance = 0

'Within' variance = 116306

mean theta = 0

Joint test on named regressors -
 Asymptotic test statistic: Chi-square(1) = 3.97976
 with p-value = 0.04605

Breusch-Pagan test -
 Null hypothesis: Variance of the unit-specific error = 0
 Asymptotic test statistic: Chi-square(1) = 1.06189
 with p-value = 0.302784

Hausman test -
 Null hypothesis: GLS estimates are consistent
 Asymptotic test statistic: Chi-square(1) = 5.70884
 with p-value = 0.0168797

Based on this model specification, Breush-Pagan test confirms that random effects model is not more suitable than pooled OLS model, while Hausman test – that random model estimates are not consistent. Therefore in the end, the pooled model is selected.

Appendix 29. *Estimation Results and Diagnostics, GBSCs Impact on Final Consumption Expenditure of Households (SCI)*

Pooled OLS

Model: Pooled OLS, using 38 observations

Included 6 cross-sectional units

Time-series length: minimum 2, maximum 12

Dependent variable: d_SCI

Robust (HAC) standard errors

	Coefficient	Std. Error	t-ratio	p-value	
const	601.442	596.910	1.008	0.3599	
GBSCS	17.1976	1.35069	12.73	<0.0001	***

Mean dependent var	4144.145		S.D. dependent var	5354.380
Sum squared resid	4.59e+08		S.E. of regression	3571.966
R-squared	0.566991		Adjusted R-squared	0.554963
F(1, 5)	162.1161		P-value(F)	0.000053
Log-likelihood	−363.7655		Akaike criterion	731.5310
Schwarz criterion	734.8062		Hannan-Quinn	732.6963
rho	0.005512		Durbin-Watson	1.788431

Diagnostics with respect to pooled OLS

Diagnostics: using n = 6 cross-sectional units

Fixed effects estimator

allows for differing intercepts by cross-sectional unit

```
        coefficient   std. error   t-ratio   p-value
  ---------------------------------------------------------
  const    −1671.12     1546.60    −1.081    0.2882
  GBSCS     28.2294      7.07116    3.992    0.0004  ***
```

Residual variance: 3.18188e+008/(38 - 7) = 1.02641e+007

Joint significance of differing group means:

F(5, 31) = 2.75003 with p-value 0.0361228

(A low p-value counts against the null hypothesis that the pooled OLS model is adequate, in favor of the fixed effects alternative.)

Variance estimators:
 between = 7.15686e+006
 within = 1.02641e+007
Panel is unbalanced: theta varies across units

Random effects estimator
allows for a unit-specific component to the error term

	coefficient	std. error	t-ratio	p-value
const	535.034	1628.45	0.3286	0.7444
GBSCS	20.4533	4.42017	4.627	4.67e-05 ***

Means of pooled OLS residuals for cross-sectional units:

unit 1:	1894.7
unit 2:	-972.37
unit 3:	-442.48
unit 4:	-1419.3
unit 5:	6096.5
unit 6:	944.3

Breusch-Pagan test statistic:
 LM = 0.0234956 with p-value = prob(chi-square(1) > 0.0234956) = 0.878175
(A low p-value counts against the null hypothesis that the pooled OLS model is adequate, in favor of the random effects alternative.)

Hausman test statistic:
 H = 2.17355 with p-value = prob(chi-square(1) > 2.17355) = 0.140402
(A low p-value counts against the null hypothesis that the random effects model is consistent, in favor of the fixed effects model.)

Model: Fixed-effects, using 38 observations

Included 6 cross-sectional units

Time-series length: minimum 2, maximum 12

Dependent variable: d_SCI

Robust (HAC) standard errors

	Coefficient	Std. Error	t-ratio	p-value	
const	−1671.12	400.712	−4.170	0.0087	***
GBSCS	28.2294	1.94520	14.51	<0.0001	***

Mean dependent var	4144.145		S.D. dependent var	5354.380
Sum squared resid	3.18e+08		S.E. of regression	3203.769
LSDV R-squared	0.700039		Within R-squared	0.339549
Log-likelihood	−356.7904		Akaike criterion	727.5809
Schwarz criterion	739.0440		Hannan-Quinn	731.6594
rho	−0.372718		Durbin-Watson	2.558804

Joint test on named regressors -

Test statistic: $F(1, 5) = 210.608$

with p-value = $P(F(1, 5) > 210.608) = 2.80398e-05$

Robust test for differing group intercepts -

Null hypothesis: The groups have a common intercept

Test statistic: Welch $F(5, 7.3) = 12.1221$

with p-value = $P(F(5, 7.3) > 12.1221) = 0.00212472$

Pesaran CD test for cross-sectional dependence -

Null hypothesis: No cross-sectional dependence

Asymptotic test statistic: $z = 2.89732$

with p-value = 0.00376362

Model: Fixed-effects, using 38 observations (selected model)

Included 6 cross-sectional units

Time-series length: minimum 2, maximum 12

Dependent variable: d_SCI

Robust (HAC) standard errors

	Coefficient	Std. Error	t-ratio	p-value	
const	−1638.88	424.983	−3.856	0.0119	**
GBSCS	28.1736	2.04739	13.76	<0.0001	***
dt_2	2332.66	64.2879	36.28	<0.0001	***
dt_3	−3120.76	58.1458	−53.67	<0.0001	***

Mean dependent var	4144.145		S.D. dependent var	5354.380
Sum squared resid	3.03e+08		S.E. of regression	3232.700
LSDV R-squared	0.714301		Within R-squared	0.370949
Log-likelihood	−355.8649		Akaike criterion	729.7299
Schwarz criterion	744.4681		Hannan-Quinn	734.9736
rho	−0.370940		Durbin-Watson	2.565822

Joint test on named regressors -

Test statistic: F(3, 5) = 9.41455e+18
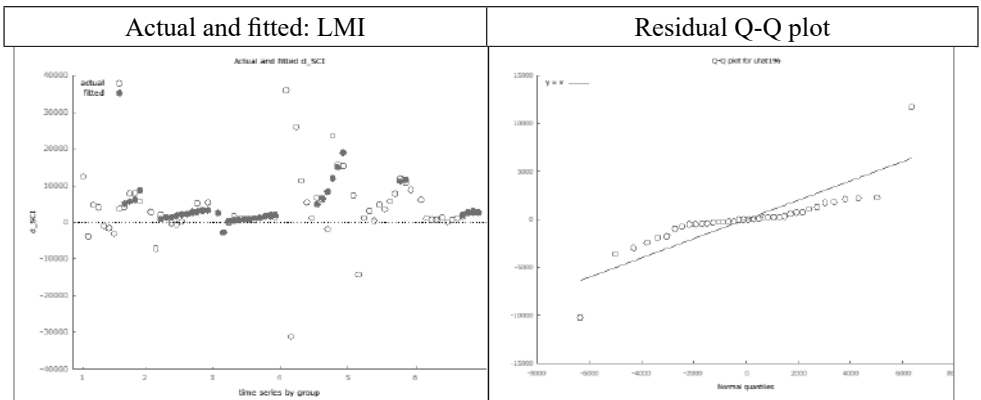
with p-value = P(F(3, 5) > 9.41455e+18) = 2.68629e-47

Robust test for differing group intercepts -

Null hypothesis: The groups have a common intercept

Test statistic: Welch F(5, 6.6) = 15.2893

with p-value = P(F(5, 6.6) > 15.2893) = 0.00150932

Actual and fitted: LMI	Residual Q-Q plot

Appendix 30. *Estimation Results and Diagnostics, GBSCs Impact on Reemigrated Nationals (MI)*

Pooled OLS

Model 2: Pooled OLS, using 23 observations

Included 5 cross-sectional units

Time-series length: minimum 1, maximum 6

Dependent variable: d_MI

Robust (HAC) standard errors

	Coefficient	Std. Error	t-ratio	p-value	
const	525.256	412.508	1.273	0.2719	
GBSCS	−0.741059	0.502836	−1.474	0.2146	
d_MI_1	0.322907	0.0490716	6.580	0.0028	***

Mean dependent var	520.5217	S.D. dependent var	2531.613
Sum squared resid	1.22e+08	S.E. of regression	2472.432
R-squared	0.132916	Adjusted R-squared	0.046207
F(2, 4)	24.69535	P-value(F)	0.005613
Log-likelihood	−210.7263	Akaike criterion	427.4527
Schwarz criterion	430.8592	Hannan-Quinn	428.3094
rho	0.060323	Durbin-Watson	1.835432

Diagnostics with respect to pooled OLS

Diagnostics: using n = 5 cross-sectional units

Fixed effects estimator

allows for differing intercepts by cross-sectional unit

```
        coefficient  std. error   t-ratio  p-value
  -------------------------------------------------------
  const   −284.946    1766.48    −0.1613  0.8739
  GBSCS    2.55459     5.97253    0.4277  0.6746
  d_MI_1   0.136471    0.264033   0.5169  0.6123
```

Residual variance: 1.10461e+008/(23 - 7) = 6.90378e+006

Joint significance of differing group means:

F(4, 16) = 0.427226 with p-value 0.786846

(A low p-value counts against the null hypothesis that the pooled OLS model is adequate, in favor of the fixed effects alternative.)

Variance estimators:

between = 0

within = 6.90378e+006

theta used for quasi-demeaning = 0

Random effects estimator

allows for a unit-specific component to the error term

```
         coefficient  std. error  t-ratio  p-value
  --------------------------------------------------------
  const    525.256      795.212     0.6605  0.5165
  GBSCS    −0.741059     2.00295   −0.3700  0.7153
  d_MI_1    0.322907     0.203429   1.587   0.1281
```

Hausman test statistic:

H = 2.2949 with p-value = prob(chi-square(2) > 2.2949) = 0.317445

(A low p-value counts against the null hypothesis that the random effects model is consistent, in favor of the fixed effects model.)

Selected specification of a pooled OLS model:

Model: Pooled OLS, using 23 observations (selected model)

Included 5 cross-sectional units

Time-series length: minimum 1, maximum 6

Dependent variable: d_MI

Robust (HAC) standard errors

	Coefficient	Std. Error	t-ratio	p-value	
const	1042.36	357.882	2.913	0.0436	**
GBSCS	−0.962047	0.481547	−1.998	0.1164	

dt_10	−2596.39	968.800	−2.680	0.0552	*
d_MI_1	0.317627	0.0591570	5.369	0.0058	***

Mean dependent var	520.5217	S.D. dependent var	2531.613
Sum squared resid	1.00e+08	S.E. of regression	2294.816
R-squared	0.290370	Adjusted R-squared	0.178323
F(3, 4)	862.0799	P-value(F)	4.47e-06
Log-likelihood	−208.4218	Akaike criterion	424.8437
Schwarz criterion	429.3856	Hannan-Quinn	425.9860
rho	0.066752	Durbin-Watson	1.781428

Panel estimation: random effects

Model: Random-effects (GLS), using 23 observations

Included 5 cross-sectional units

Time-series length: minimum 1, maximum 6

Dependent variable: d_MI

Robust (HAC) standard errors

	Coefficient	Std. Error	z	p-value	
const	525.256	412.508	1.273	0.2029	
GBSCS	−0.741059	0.502836	−1.474	0.1405	
d_MI_1	0.322907	0.0490716	6.580	<0.0001	***

Mean dependent var	520.5217	S.D. dependent var	2531.613
Sum squared resid	1.22e+08	S.E. of regression	2412.846
Log-likelihood	−210.7263	Akaike criterion	427.4527
Schwarz criterion	430.8592	Hannan-Quinn	428.3094
rho	0.076388	Durbin-Watson	1.733146

'Between' variance = 0

'Within' variance = 6.90378e+006

mean theta = 0

Joint test on named regressors -

Asymptotic test statistic: Chi-square(2) = 49.3907

with p-value = 1.88341e-11

Breusch-Pagan test -

Null hypothesis: Variance of the unit-specific error = 0

Asymptotic test statistic: Chi-square(1) = 1.30999
with p-value = 0.252397

Hausman test -
 Null hypothesis: GLS estimates are consistent
 Asymptotic test statistic: Chi-square(2) = 90.5834
 with p-value = 2.13831e-2
Pooled OLS
Model 2: Pooled OLS, using 23 observations
Included 5 cross-sectional units
Time-series length: minimum 1, maximum 6
Dependent variable: d_MI
Robust (HAC) standard errors

	Coefficient	Std. Error	t-ratio	p-value	
const	525.256	412.508	1.273	0.2719	
GBSCS	−0.741059	0.502836	−1.474	0.2146	
d_MI_1	0.322907	0.0490716	6.580	0.0028	***

Mean dependent var	520.5217	S.D. dependent var	2531.613
Sum squared resid	1.22e+08	S.E. of regression	2472.432
R-squared	0.132916	Adjusted R-squared	0.046207
F(2, 4)	24.69535	P-value(F)	0.005613
Log-likelihood	−210.7263	Akaike criterion	427.4527
Schwarz criterion	430.8592	Hannan-Quinn	428.3094
rho	0.060323	Durbin-Watson	1.835432

Diagnostics with respect to pooled OLS

Diagnostics: using n = 5 cross-sectional units

Fixed effects estimator
allows for differing intercepts by cross-sectional unit

       coefficient std. error   t-ratio p-value
  ----
  const   −284.946   1766.48   −0.1613 0.8739

GBSCS   2.55459   5.97253   0.4277 0.6746
d_MI_1   0.136471   0.264033 0.5169 0.6123

Residual variance: 1.10461e+008/(23 - 7) = 6.90378e+006

Joint significance of differing group means:
 $F(4, 16) = 0.427226$ with p-value 0.786846
(A low p-value counts against the null hypothesis that the pooled OLS model
is adequate, in favor of the fixed effects alternative.)

Variance estimators:
 between = 0
 within = 6.90378e+006
theta used for quasi-demeaning = 0

Random effects estimator
allows for a unit-specific component to the error term

         coefficient   std. error   t-ratio   p-value
  ----
  const   525.256   795.212   0.6605 0.5165
  GBSCS   −0.741059   2.00295   −0.3700 0.7153
  d_MI_1   0.322907   0.203429   1.587   0.1281

Hausman test statistic:
 $H = 2.2949$ with p-value = prob(chi-square(2) > 2.2949) = 0.317445
(A low p-value counts against the null hypothesis that the random effects
model is consistent, in favor of the fixed effects model.)

Selected specification of a pooled OLS model:
Model: Pooled OLS, using 23 observations (selected model)
Included 5 cross-sectional units
Time-series length: minimum 1, maximum 6
Dependent variable: d_MI

Robust (HAC) standard errors

	Coefficient	Std. Error	t-ratio	p-value	
const	1042.36	357.882	2.913	0.0436	**
GBSCS	−0.962047	0.481547	−1.998	0.1164	
dt_10	−2596.39	968.800	−2.680	0.0552	*
d_MI_1	0.317627	0.0591570	5.369	0.0058	***

Mean dependent var	520.5217	S.D. dependent var	2531.613
Sum squared resid	1.00e+08	S.E. of regression	2294.816
R-squared	0.290370	Adjusted R-squared	0.178323
F(3, 4)	862.0799	P-value(F)	4.47e-06
Log-likelihood	−208.4218	Akaike criterion	424.8437
Schwarz criterion	429.3856	Hannan-Quinn	425.9860
rho	0.066752	Durbin-Watson	1.781428

Panel estimation: random effects

Model: Random-effects (GLS), using 23 observations

Included 5 cross-sectional units

Time-series length: minimum 1, maximum 6

Dependent variable: d_MI

Robust (HAC) standard errors

	Coefficient	Std. Error	z	p-value	
const	525.256	412.508	1.273	0.2029	
GBSCS	−0.741059	0.502836	−1.474	0.1405	
d_MI_1	0.322907	0.0490716	6.580	<0.0001	***

Mean dependent var	520.5217	S.D. dependent var	2531.613
Sum squared resid	1.22e+08	S.E. of regression	2412.846
Log-likelihood	−210.7263	Akaike criterion	427.4527
Schwarz criterion	430.8592	Hannan-Quinn	428.3094
rho	0.076388	Durbin-Watson	1.733146

'Between' variance = 0

'Within' variance = 6.90378e+006

mean theta = 0

Joint test on named regressors -

Asymptotic test statistic: Chi-square(2) = 49.3907

with p-value = 1.88341e-11

Breusch-Pagan test -

 Null hypothesis: Variance of the unit-specific error = 0

 Asymptotic test statistic: Chi-square(1) = 1.30999

 with p-value = 0.252397

Hausman test -

 Null hypothesis: GLS estimates are consistent

 Asymptotic test statistic: Chi-square(2) = 90.5834

 with p-value = 2.13831e-20

Appendix 31. *Estimation Results and Diagnostics, GBSCs Impact on GDP per Capita (GDPI)*

Pooled OLS

Model: Pooled OLS, using 36 observations

Included 6 cross-sectional units

Time-series length: minimum 2, maximum 10

Dependent variable: d_GDPI

Robust (HAC) standard errors

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	762.836	128.134	5.953	0.0019	***
GBSCS	0.00486872	0.199127	0.02445	0.9814	

Mean dependent var	763.8889		S.D. dependent var	414.1930
Sum squared resid	6004409		S.E. of regression	420.2383
R-squared	0.000008		Adjusted R-squared	-0.029404
F(1, 5)	0.000598		P-value(F)	0.981439
Log-likelihood	−267.5225		Akaike criterion	539.0451
Schwarz criterion	542.2121		Hannan-Quinn	540.1504
rho	0.493537		Durbin-Watson	0.920843

Diagnostics with respect to pooled OLS

Diagnostics: using n = 6 cross-sectional units

Fixed effects estimator

allows for differing intercepts by cross-sectional unit

```
        coefficient  std. error  t-ratio  p-value
  -------------------------------------------------------
   const    370.362    178.453    2.075   0.0469  **
   GBSCS     1.81931    0.779212  2.335   0.0267  **
```

Residual variance: 3.5882e+006/(36 - 7) = 123731

Joint significance of differing group means:

 F(5, 29) = 3.90557 with p-value 0.00790165

(A low p-value counts against the null hypothesis that the pooled OLS model

is adequate, in favor of the fixed effects alternative.)

Variance estimators:
 between = 53282.5
 within = 123731
Panel is unbalanced: theta varies across units

Random effects estimator
allows for a unit-specific component to the error term

```
         coefficient   std. error   t-ratio   p-value
  --------------------------------------------------------
  const    692.358      160.901      4.303    0.0001  ***
  GBSCS      0.425499     0.451730  0.9419    0.3529
```

Means of pooled OLS residuals for cross-sectional units:

```
  unit  1:      463.56
  unit  2:     -210.56
  unit  3:      133.92
  unit  4:     -147.85
  unit  5:      170.84
  unit  6:     -135.62
```

Breusch-Pagan test statistic:
 LM = 1.79772 with p-value = prob(chi-square(1) > 1.79772) = 0.179988
(A low p-value counts against the null hypothesis that the pooled OLS model
is adequate, in favor of the random effects alternative.)

Hausman test statistic:
 H = 4.9996 with p-value = prob(chi-square(1) > 4.9996) = 0.0253532
(A low p-value counts against the null hypothesis that the random effects
model is consistent, in favor of the fixed effects model.)

Actual and fitted: LMI | Residual Q-Q plot
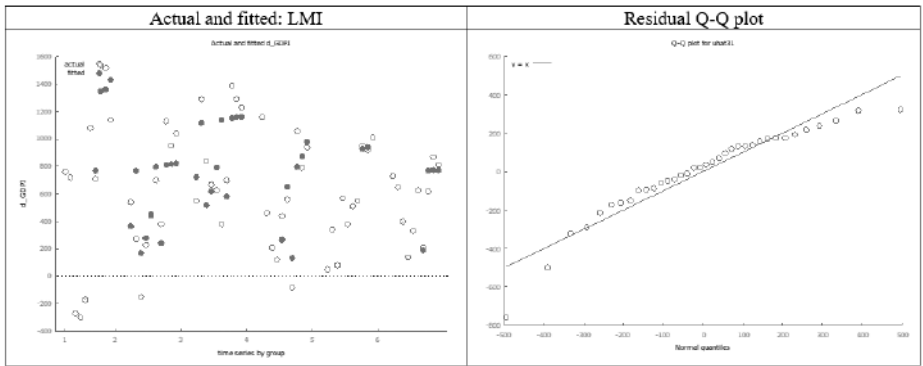
Panel estimation: random effects
Model: Random-effects (GLS), using 36 observations
Included 6 cross-sectional units
Time-series length: minimum 2, maximum 10
Dependent variable: d_GDPI
Robust (HAC) standard errors

	Coefficient	Std. Error	z	p-value	
const	692.358	134.428	5.150	<0.0001	***
GBSCS	0.425499	0.261518	1.627	0.1037	

Mean dependent var	763.8889	S.D. dependent var	414.1930
Sum squared resid	6366496	S.E. of regression	426.4972
Log-likelihood	−268.5765	Akaike criterion	541.1530
Schwarz criterion	544.3201	Hannan-Quinn	542.2584
rho	0.142331	Durbin-Watson	1.489788

'Between' variance = 53282.5
'Within' variance = 123731
mean theta = 0.443072
Joint test on named regressors -
 Asymptotic test statistic: Chi-square(1) = 2.64724
 with p-value = 0.10373

Breusch-Pagan test -
 Null hypothesis: Variance of the unit-specific error = 0

407

Asymptotic test statistic: Chi-square(1) = 1.79772
with p-value = 0.179988

Hausman test -
 Null hypothesis: GLS estimates are consistent
 Asymptotic test statistic: Chi-square(1) = 19.8264
 with p-value = 8.48037e-06Panel estimation
 Model: Fixed-effects, using 36 observations
 Included 6 cross-sectional units
 Time-series length: minimum 2, maximum 10
 Dependent variable: d_GDPI
 Robust (HAC) standard errors

	Coefficient	Std. Error	t-ratio	p-value	
const	370.362	129.896	2.851	0.0358	**
GBSCS	1.81931	0.600522	3.030	0.0291	**

Mean dependent var	763.8889		S.D. dependent var	414.1930
Sum squared resid	3588205		S.E. of regression	351.7545
LSDV R-squared	0.402410		Within R-squared	0.158233
Log-likelihood	−258.2554		Akaike criterion	530.5107
Schwarz criterion	541.5954		Hannan-Quinn	534.3796
rho	0.142331		Durbin-Watson	1.489788

Joint test on named regressors -
 Test statistic: F(1, 5) = 9.17815
 with p-value = P(F(1, 5) > 9.17815) = 0.0290965

Robust test for differing group intercepts -
 Null hypothesis: The groups have a common intercept
 Test statistic: Welch F(5, 10.9) = 2.99818
 with p-value = P(F(5, 10.9) > 2.99818) = 0.060603

Pesaran CD test for cross-sectional dependence -
 Null hypothesis: No cross-sectional dependence
 Asymptotic test statistic: z = 4.33888
 with p-value = 1.4321e-05

Model: Fixed-effects, using 36 observations
Included 6 cross-sectional units
Time-series length: minimum 2, maximum 10
Dependent variable: d_GDPI

	Coefficient	Std. Error	t-ratio	p-value	
const	1109.65	242.267	4.580	0.0002	***
GBSCS	−0.237852	0.698316	−0.3406	0.7370	
dt_4	−590.898	227.752	−2.594	0.0173	**
dt_5	−354.233	225.567	−1.570	0.1320	
dt_6	−787.330	223.175	−3.528	0.0021	***
dt_7	−680.665	221.176	−3.077	0.0059	***
dt_8	−561.729	216.417	−2.596	0.0173	**
dt_9	−512.291	206.374	−2.482	0.0220	**
dt_10	−675.353	167.486	−4.032	0.0007	***
dt_11	95.1732	153.275	0.6209	0.5417	
dt_12	43.1429	147.920	0.2917	0.7735	

Mean dependent var	763.8889		S.D. dependent var	414.1930
Sum squared resid	1080122		S.E. of regression	232.3921
LSDV R-squared	0.820113		Within R-squared	0.746611
LSDV F(15, 20)	6.078739		P-value(F)	0.000141
Log-likelihood	−236.6450		Akaike criterion	505.2899
Schwarz criterion	530.6262		Hannan-Quinn	514.1330
rho	0.042464		Durbin-Watson	1.781451

Joint test on named regressors -
 Test statistic: F(1, 20) = 0.116014
 with p-value = P(F(1, 20) > 0.116014) = 0.736951

Test for differing group intercepts -
 Null hypothesis: The groups have a common intercept
 Test statistic: F(5, 20) = 5.2476

with p-value = $P(F(5, 20) > 5.2476) = 0.0030778$

Wald joint test on time dummies -
 Null hypothesis: No time effects
 Asymptotic test statistic: Chi-square(9) = 46.4407
 with p-value = 4.98737e-07
The selected specification:
Model: Fixed-effects, using 36 observations
Included 6 cross-sectional units
Time-series length: minimum 2, maximum 10
Dependent variable: d_GDPI
Robust (HAC) standard errors

	Coefficient	Std. Error	t-ratio	p-value	
const	792.706	86.4070	9.174	<0.0001	***
GBSCS	0.747020	0.362432	2.061	0.0503	*
dt_4	−394.464	141.832	−2.781	0.0104	**
dt_6	−605.669	284.207	−2.131	0.0435	**
dt_7	−505.898	55.2380	−9.159	<0.0001	***
dt_8	−341.096	91.0490	−3.746	0.0010	***
dt_10	−563.822	88.6051	−6.363	<0.0001	***

Mean dependent var	763.8889	S.D. dependent var	414.1930
Sum squared resid	1785221	S.E. of regression	272.7347
LSDV R-squared	0.702684	Within R-squared	0.581200
Log-likelihood	−245.6894	Akaike criterion	515.3788
Schwarz criterion	534.3810	Hannan-Quinn	522.0111
rho	0.128501	Durbin-Watson	1.627393

Robust test for differing group intercepts -
 Null hypothesis: The groups have a common intercept
 Test statistic: Welch F(5, 11.2) = 7.11993
 with p-value = $P(F(5, 11.2) > 7.11993) = 0.00321051$

410

MYKOLAS ROMERIS UNIVERSITY

Anna Kislovska

EVALUATION OF GLOBAL BUSINESS SERVICES CENTERS IMPACT ON MACROECONOMIC INDICATORS IN CENTRAL AND EASTERN EUROPE COUNTRIES

Summary of the Doctoral Dissertation
Social Sciences, Economics (S 004)

Vilnius, 2022

This dissertation was prepared during the period 2015-2021 at Mykolas Romeris University under the doctoral program right conferred to Vytautas Magnus University, ISM University of Management and Economics, Mykolas Romeris University and Vilnius University on 22 February 2019 by the Order No. V-160 of the Minister of Education, Science and Sport of the Republic of Lithuania.

Scientific supervisor:

Prof. Dr. Rima Tamošiūnienė (Mykolas Romeris University, Social Sciences, Economics S 004).

The doctoral dissertation is defended at the Council of Economics of Vytautas Magnus University, ISM University of Management and Economics, Mykolas Romeris University and Vilnius University Šiauliai Academy:

Chairperson:

Assoc. Prof. Dr. Violeta Pukelienė (Vytautas Magnus University, Social Sciences, Economics S 004).

Members:

Assoc. Prof. Dr. Daiva Beržinskienė-Juozainienė (Vilnius University Šiauliai Academy, Social Sciences, Economics S 004);

Assoc. Prof. Dr. Žaneta Karazijienė (Mykolas Romeris University, Social Sciences, Economics S 004);

Prof. Dr. Ričardas Krikštolaitis (Vytautas Magnus University, Natural Sciences, Mathematics N 001);

Prof. Dr. Filippo Reganati (La Sapienza University of Rome, Italy, Social Sciences, Economics S 004).

The doctoral dissertation will be defended at a public meeting of the Council of Economics on 21 June 2022 at 10:00 at Mykolas Romeris University, auditorium II-230.

Address: Ateities str. 20, 08303 Vilnius, Lithuania.

The summary of the doctoral dissertation was sent out on 20 May 2022.

The Doctoral Dissertation is available at Martynas Mažvydas National Library of Lithuania, ISM University of Management and Economics Library, Mykolas Romeris University Library, Vilnius University Šiauliai Academy Library and Vytautas Magnus University Library.

Anna Kislovska

EVALUATION OF GLOBAL BUSINESS SERVICES CENTERS IMPACT ON MACROECONOMIC INDICATORS IN CENTRAL AND EASTERN EUROPE COUNTRIES

Summary

The relevance of the topic. Phenomenon of service sector foreign direct investment (FDI) has become widely examined subject of discussion in community of the researchers due to the growing relative weight of service sector in the world economy prompted by globalization and technology development processes. Constantly changing and complex international business environment stimulates the emergence and development of new business forms, which, from one side, are designed to fulfill corporate value adding needs, and from another side, impact the change in the international economy structure.

Despite the fact that there is number of researches, which aim is to cover service sector foreign direct investment problematic aspects and seek for the ways how to measure economic impact of this phenomena, there is a lack of clarity in Global Business Services Centers segment. This is mainly the consequence of the recent rapid development of Global Business Services Centers in the business community, but novelty of this phenomenon in the scientific community. Increasing number of Global Business Services Centers changes the business geography and inevitably leads to the changes in the structure of host country economy. However, it is important to evaluate how these changes manifest and which particular economic indicators of the host country are mostly being affected due to the emergence and development of Global Business Services Centers.

Frequently analyzed topics such as development, peculiarities and content of service sector foreign direct investment, evaluation of Global Business Services Centers impact on microeconomic indicators and managerial aspects and other related topics found in the scientific literature, does not solve the problem of measuring the Global

Business Services Centers impact on macroeconomic indicators in the host country.

Therefore, the evaluation of Global Business Services Centers impact on state macroeconomic indicators is relevant in the formation of provisions of host country investment promotion economic policy. It could help to improve host country economic policy toward this segment of foreign direct investment, to know which macroeconomic indicators are being influenced the most and what directions should be set and implemented for better macroeconomic value in the future.

The level of the problem examination. Despite the fact that the attraction of GBSCs became prerogative in the most Central and Eastern Europe (CEE) countries, where GBSCs sector is named as priority sector declared by the investment promotion agencies, there is no holistic approach for measurement of the macroeconomic effects, which this attraction brings to the countries. The sporadic GBSCs attraction actions rather than purposeful attraction strategy according to known impacted macroeconomic outcomes does not bring the value, which it can bring, and the macroeconomic outcomes of GBSCs are usually being undervalued.

Scientific literature, unfortunately, does not fully answer the GBSCs macroeconomic exposure measurement questions, too. The number of scientific literature analyzed in this dissertation aim to reveal the preconditions and consequences of increasing comparative weight of services in the world economy without separation of such segment as GBSCs. The World Bank (2020), World Investment Report (2015-2017), European Commission (2014 a, b), Herbert, Paraskevas (2012), Plaisier et al (2012), Sauvant et al (2010), and others analyze the paths of servitization of economy and explain the main trends in service sector and service sector FDI. Deloitte (2015 a, b), European Commission (2014 a, b) and others emphasize the changing and complex context of business services as well as emergence of new business forms. Positive or negative nature of change in the economic structure both of host and home countries are emphasized by the following researchers: Sass et al (2018), Kalašinskaitė (2009), Bellak et al (2008), Gopinath, Echeverria (2004) and others.

In the light of the servitization of the economies, some controversial discussions regarding the service and manufacturing sector researches separation and interpretation were noticed. According to Dunning, McQueen, 1982, Casson, 1990 and others, service and manufacturing sectors determinants are similar and fundamental FDI theories based on manufacturing FDI can be applicable in services. However, according to more recent researches (Sass et al, 2018; Barkauskaitė, Naraškevičiūtė, 2016; Ruplienė,

2013; Kalašinskaitė, 2009 and others) impact of FDI on state economy can be different depending on sector and it is purposeful to analyze foreign direct investment aspects by separating sectors or even economic activities. Thus, taking into account the more recent researches, the impact of GBSCs on macroeconomic indicators have to be separately measured according to this view.

There is a clear view seen among researchers, which author of this dissertation supports: gross domestic product (GDP) – the main macroeconomic indicator, which is being impacted by FDI according to many researchers (Čičak, Sorić, 2015; Kalašinskaitė, 2009; Ruplienė, Garšvienė, 2008 and others) cannot reflect the real economic situation and should be complemented with different indicators, especially with those, which measure quality of life (Servetkienė, 2013; Pukelienė, Starkauskienė, 2011; Gruževskis et al, 2009; Stiglitz et al, 2009 and others), different labor market, spending and consumption, migration, cross-sectorial growth, regional development indicators etc. (Sass et al, 2018; Business Services in the Czech Republic, 2017; Business Sevices Sector in the Czech Republic by ABSL, 2016, 2017, 2019, 2020; Lithuania's Business Services Report, 2016-2020; Business Services Centers in Hungary, 2017, 2018-2020; Business Services Sector in Poland by ABSL, 2014-2020; Business Services Sector in Romania by ABSL, 2018-2020; Shared Service & Business Process Outsourcing Centers in Slovakia, 2017-2020; Kuzior, Sobotka, 2019; Ruzsa, 2018; Milewska, 2018; Ślusarczyk, 2017; Skowroński, 2017; Tamošiūnienė, Kislovska, 2015; Wirtz et al 2015; Zenasni, Benhabib, 2013; Mucuk, Demirsel, 2013; Laskienė, Pekarskienė, 2011 and others).

Four main preconditions and consequences of service sector and service sector FDI were noticed in scientific literature: service sector investment liberalization, promotion and facilitation (World Investment Report, 2015-2017); agglomeration and scale economies (World Development Report, 2009; Smith, 1776 edited by Soares, 2007); reshaping of economic geography (Ruzsa, 2018; Ślusarczyk, 2017; Tamošiūnienė, Kislovska, 2015; Cushman & Wakefield, 2015; Combes et al, 2012, Eichengreen, Gupta, 2012; Combes et al, 2011; Puga, 2010; Gospel, Sako, 2010; Jensen, 2009; World Development Report, 2009; Dunning, Lundan, 2008; Maskell, Malmberg, 1999; Dunning, 2000; Chandler, 1977; Hymer, 1960 and others; evolution of efficiency-oriented business internationalization forms such as GBSCs (Invest Lithuania, 2016-2019; OECD, 2015; Tamošiūnienė, Kislovska, 2015; Wirtz et al, 2015; European Commission, 2014 a,b; World Development Report, 2015 and others).

Theoretical reasoning of GBSCs as economic phenomenon was noticed in the

researches, where the following aspects were analyzed: conceptual framework of GBSCs (ABSL, 2019; Kuzior, Sobotka 2019; Deloitte, 2016 a, b; Keith et al, 2016; Accenture, 2015; Cushman & Wakefield, 2015; PwC, 2015; Wang, 2015; Wirtz et al 2015; Bondarouk, 2014; Marciniak 2014; Rudzioniene, Sakalauskiene, 2014; Strikwerda, 2014; Marciniak, 2013b; Huber, Danino, 2012; Deloitte, 2011; Miles, 2011; Oshri et al, 2011; Gereffi, Fernandez-Stark, 2010; Bedell, 2010; Kroll, 2005; Schulman et al, 1999 and others), increasing scope and value of GBSCs (ABSL, 2019; Deloitte, 2015 a, b; BearingPoint, 2011 and others), scientific exploration level of GBSCs in managerial and microeconomic literature (ABSL, 2019; Deloitte, 2015-2016 a, b; Cushman & Wakefield, 2015; Kienast, Rudy, 2015; SSON, 2015; UNCTD, 2015; Fersht, Brown, 2014; KPMG, 2015; Knol et al, 2014; PwC, 2014; Marciniak, 2013a; Wenderoth, 2013; Accenture, 2011; BearingPoint, 2011; Fersht et al, 2011; IBM, 2011; Pérez, 2008; CIPFA, 2006; Ulbrich, 2006; Seddon, 2003; Kagelmann, 2001; Aguirre et al, 1998 and others), scientific exploration level of GBSCs in macroeconomic literature (Kuzior, Sobotka, 2019; Ruzsa, 2018; CEE Investment Report, 2018; Ruzsa, 2018; Milewska, 2018; Ślusarczyk, 2017; Skowroński, 2017; Biernat-Stawecka, 2016; Tamošiūnienė, Kislovska, 2015; Wirtz et al, 2015; Marciniak, 2014 and others), interconnectedness between GBSCs and macroeconomic indicators expressed by multiplier effect (Skowroński, 2017; Invest Lithuania, 2015; ABSL, 2011; Micek et al, 2010 and others).

It should be stressed that the majority of the researchers emphasize the managerial or microeconomic aspects of Global Business Services Centers. What is more, the insignificant number of researches, who involve analysis of macroeconomic indicators, usually cover some descriptive data and empirical testing is being limited. Moreover, no multiplier effect is being taken into consideration since the majority of Global Business Services Centers researches on macroeconomic level cover one or few separate macroeconomic indicators analysis.

The researchers, who parallel one or few macroeconomic indicators with GBSCs conclude that there is a need to make more detailed researches. However, such research limitation as lack of statistical data for GBSCs, which is comparatively new phenomenon, complicates the research and due to this reason qualitative research methods are usually being used instead of quantitative.

The researchers view that traditional macroeconomic indicators do not always reflect the real state of the economy and insignificant number of the researches, which analyze GBSCs impact on macroeconomic indicators, as well as lack of multiplier effect

inclusion into existing researches, also prove the relevance and novelty of the dissertation topic. Therefore, author of this dissertation aims to raise the parralels of GBSCs and macroeconomic indicators to a higher level. This dissertation intention is to acquire wider cognition of GBSCs phenomenon and with connections to multiplier effect to answer the question how GBSCs impact the macroeconomic indicators in CEE countries.

The scientific problem: what is the Global Business Services Centers impact on macroeconomic indicators and how to evaluate this impact.

The object of the research: Global Business Services Centers impact on macroeconomic indicators.

The aim of the research: after exploring of Global Business Services Centers phenomenon and its impact on macroeconomic indicators, to develop and empirically test the model, which evaluates the impact of Global Business Services Centers on macroeconomic indicators in Central and Eastern Europe countries.

In order to achieve the target, the following **objectives of the research** were set:

1. To analyze contents and specific of Global Business Services Centers and level of investigation of Global Business Services Centers phenomenon in economic science context.

2. To expose the peculiarities of Global Business Services Centers macroeconomic income measurement criteria as well as interconnectedness between Global Business Services Centers and macroeconomic indicators expressed by multiplier effect.

3. Based on the analysis of macroeconomic indicators and multiplier effect manifestation specifics, to develop and substantiate the model, which would evaluate the impact of Global Business Services Centers on macroeconomic indicators in Central and Eastern Europe countries.

4. To distinguish and justify the main components of the structure of modelling evaluation of Global Business Services Centers impact on macroeconomic indicators in Central and Eastern Europe countries.

5. To test the developed model empirically by evaluating the impact of Global Business Services Centers on macroeconomic indicators in Central and Eastern Europe countries, to reveal research limitations and present research findings and recommendations.

The methods of the research. To reveal the content and specifics of foreign di-

rect investment in the service sector, to expose the role of the Global Business Services Centers segment as an economic phenomenon as well as to distinguish macroeconomic indicators, which dynamics are influenced by Global Business Services Centers, the methods of scientific literature analysis and synthesis, qualitative comparative analysis, grouping, summarization, experts evaluation were used.

To develop the model, which would evaluate the impact of Global Business Services Centers on macroeconomic indicators in Central and Eastern Europe countries, qualitative comparative analysis, summarization, grouping of affected macroeconomic indicators, multiplier effect evaluation were done and modelling method was used.

The following research methods were used to evaluate the impact of Global Business Services Centers on macroeconomic indicators in Central and Eastern Europe countries: secondary data analysis of mainly economic practice oriented literature prepared by investment promotion agencies or intermediaries – business services experts, comprehensive qualitative comparative analysis of each of distinguished by author macroeconomic indicators group influenced by Global Business Services Centers in Central and Eastern Europe countries; the combination of comparative analysis and descriptive statistics of the following indicators was done: 1. *Labor market indicators*: employment numbers in Global Business Services Centers, annual employment growth in Global Business Services Centers, Global Business Services Centers/total employment ratio, increase in number of Global Business Services Centers and their parallels to total unemployment and youth unemployment rates, average monthly salary in Global Business Services Centers and on national level, employers and employees contribution to job related taxes (Global Business Services Centers/social security funds collected contributions ratio), some other labor market indicators aspects such as labor market demands changes, employment restructuring (new way of working, development of new competencies needed for business, demand for new professions and skills) and other labor market indicators specifically occurring in Central and Eastern Europe countries. 2. *Spending and consumption indicators*: projected additional annual gross disposable income created due to higher average salary in Global Business Services Centers in 2020 (per one employee per year), projected additional annual gross disposable income created due to higher average salary in Global Business Services Centers in 2020/selected household expenditure ratio, gross saving rate of households impacted by employment in Global Business Services Centers. 3. *Migration indicators*: emigration rate and re-emigration rate, which can be influenced by increasing num-

ber of dignified working places in existing and new Global Business Services Centers. 4. *Life quality indicators*: comparison of payroll and non-payroll benefits offered to Global Business Services Centers employees, which influence Global Business Services Centers employees and their family members life quality. 5. *Cross sectorial growth indicators:* real estate market growth influenced by building and rent of premises for developing and new Global Business Services Centers including office market snapshots and built stock occupied by Global Business Services Centers employees, cleaning market revenue influenced by Global Business Services Centers, other secondary services providers potential growth stimulated by Global Business Services Centers and other. 6. *Regional development indicators*: main capital and non-capital Global Business Services Centers locations, rising stars cities current situation, role and perspectives, location quotient as expression of Global Business Services Centers locations specialization in CEE countries. 7. *Gross Domestic Product related indicators*: employment and its components as the most important Gross Domestic Product aggregate, spending/consumption and cross-sectorial growth as subsequent GDP components stimulated by employment in Global Business Services Centers; modelling of the evaluation of Global Business Services Centers impact on macroeconomic indicators in Central and Eastern Europe countries; forecasting/projections: projected average monthly salary in Global Business Services Centers, Global Business Services Centers employment projections, projected additional gross disposable income created due to higher average salary in Global Business Services Centers in Central and Eastern Europe countries; evaluation of multiplier effect according to methodology developed by Economic Development Research Group (direct, indirect, induced and dynamic effects of Global Business Services Centers) and according to the evaluation model presented by author (quantitative, qualitative and other multiplier effect expressions); one-on-one interview with the head of SEB Global Services Vilnius and the head of services in Technopolis and business case study of SEB Global Services as example of multiplier effect of Global Business Services Centers impact on macroeconomic indicators in Lithuania; survey of Lithuanian, Polish and Slovakian experts from national investment promotion agencies; personal author's observations according to the experience collected while working in one of the most significant in size and scope Global Business Services Center located in Lithuania, Vilnius; panel data analysis for evaluation of Global Business Services Centers impact on selected macroeconomic indicators based on available statistical data.

The limitations of the research. Increasing investors' attention to CEE countries as destinations for GBSCs in Europe encouraged the author to choose this region as the context for the research. Hungary, Lithuania, Poland, Romania and Slovakia were included into the research according to scarce, but available statistical data and macroeconomic background similarity. Subject to data availability, research period covers from 4 to 13 years (2007-2019) depending on country and analyzed macroeconomic indicator. Other limitations of the research distinguished by the author are: fragmentation of GBSCs literature and lack of prior research studies on the topic, differences in definition of GBSCs phenomenon, lack of available and comprehensive statistics on the topic, lack of access to sensitive GBSCs data, predominance of secondary data analysis, lack of interest of experts to contribute to research.

The defendable claims of the dissertation.

1. The usage of solely quantitative research methods is limited due narrow scientific exploration level of Global Business Services Centres phenomenon and scarcity, inhomogenity of the Global Business Services Centers statistical data. Therefore, combination of descriptive, cognitive exploring, qualitative research methods and quantitative research methods are the best available methods to reveal Global Business Services Centers impact on macroeconomic indicators at current stage of evolution of this phenomenon.

2. Global Business Services Centers cause different macroeconomic outcomes depending on analyzed macroeconomic indicators group (labor market indicators, spending and consumption indicators, migration indicators, life quality indicators, cross-sectorial growth indicators, regional development indicators, GDP related indicators), but these macroeconomic indicators are closely interconnected.

3. The evaluation of the impact of Global Business Services Centers on separate macroeconomic indicators does not reflect the actual extent of the impact, therefore the evaluation should be comprehensive, multidimensional process incorporating variety of interconnected macroeoconomic indicators and evaluation of their multiplier effects.

The scientific novelty of the dissertation, theoretical significance.

1. This dissertation enhances the scientific cognition of GBSCs as economic phenomenon. The deeper cognition of comparatively new GBSCs phenomenon presented in this dissertation, analysis of its place in the whole investment chain and resumptive definition of the phenomenon offered by the author can be a good starting

point for the researchers to include the GBSCs into their field of study and increase the number of the researches on the topic. This is especially important to solve the issue of scarcity of researches, which analyze GBSCs from (macro)economic prospective.

2. Existing scientific literature analysis shows that there is a number of researches, which aim is to cover service sector foreign direct investment problematic aspects and seek for the ways how to measure economic impact of this phenomena and limited number of researches, which cover microeconomic or managerial aspects of GBSCs. However, there is a very limited number of researches, where macroeconomic indicators are paralleled with the GBSCs. This dissertation includes the evaluation of GBSCs impact on macroeconomic indicators and deepens the research level of GBSCs impact on macroeconomic indicators.

3. The evaluation of scientific exploration level of GBSCs phenomenon in the context of economic science performed in this dissertation revealed the interdisciplinarity of the topic. It was found that scientific exploration level of GBSCs phenomenon is more advanced in management science than in economic science. What is more, microeconomic GBSCs aspects, which existing researches cover, are closely related to the problematic GBSCs aspects analyzed in management science literature. This dissertation orientation towards paralleling GBSCs with macroeconomic indicators brings broader view on understanding of the manifestation of the economic value of GBSCs and extends the interdisciplinarity value as well. In the light of the fact that GBSCs is comparatively new phenomenon and the researches related to them usually cover only some descriptive data and limited empirical testing or no empirical testing at all due to lack of statistical data on the topic, the usage of combination of qualitative and quantitative research methods brings the possibility to evaluate the (macro)economic value of GBSCs at the current stage of evolution of this phenomenon.

4. According to scientific literature analysis performed in this dissertation, there is a lack of multidimensionality of evaluation of impact of GBSCs on macroeconomic indicators since the existing researches usually parallel one or few separate macroeconomic indicators with GBSCs and usually no multiplier effect evaluation is being done. This dissertation distinguishes seven macroeconomic indicators groups with elaborated examples of their manifestation in GBSCs context. Author presents the GBSCs macroeconomic outcomes evaluation model and complements it with multiplier effect expression, which brings evaluation of GBSCs to higher scientific level. The presented model could be useful instrument for evaluation of the macroeconomic outcome of

GBSCs and other newly appearing business forms.

The practical (applied in practice) significance of the dissertation.

1. Dissertation is important not only in scientists community, but also on academic level since transformations, which GBSCs bring, have to be mirrored in the study programmes.

2. Dissertation could be useful for practitioners related to GBSCs to broaden their view and provide possible ideas or express the practical needs, which could be tested scientifically.

3. The increasing number of the researches related to the dissertation topic could raise the awareness of the need of collecting more statistical information about GBSCs on the country level and establishment of the organisations, forums or support other initiatives, which would concentrate on economic evaluation of the impacts of GBSCs. Surveyed experts from Lithuanian, Polish and Slovakian investment promotion agencies agree that there is lack of country level data and analysis of the macroeconomic impact of GBSCs industry (expert from Slovakia), there are not so many studies covering the dissertation topic (expert from Poland) and the dissertation topic is useful since the more studies and data there is about GBSCs impact on state economy, the more efficiently investment promotion agencies can work and educate the government and general population on how GBSCs contribute to improving citizens' lives (expert from Lithuania).

4. The broadening of scientific exploration level of GBSCs impact on macroeconomic indicators as well as empirical testing results made in this dissertation as well as any further related researches could be useful for legislators and provide decisive arguments for one or another direction of state economic policy towards further GBSCs attraction.

The main data sources used for the dissertation research.

1. CEE countries investment promotion agencies data from their reports/analysis: Czech Business and Investment Development Agency (CzechInvest), Hungarian Investment Promotion Agency (HIPA), Lithuanian Investment Promotion Agency (Invest Lithuania), Polish Investment and Trade Agency (PAIH), Romanian government's leading body in promoting and facilitating foreign investment (InvestRomania), Slovak Investment and Trade Development Agency (SARIO).

2. GBSCs and other business services experts data from their reports/analysis: *Association of Business Service Leader (ABSL)*, who is responsible for annual GBSCs

reports in such CEE countries as Czech Republic, Poland and Romania; *Shared Services & Outsourcing Network*, which is worldwide community with over 100 000 members (*SSON*); global provider of audit and assurance, consulting, financial advisory, risk advisory, tax, and related services *Deloitte*; global network of independent member firms offering audit, tax and advisory services *KPMG*; the world's largest privately-held commercial real estate services firm *Cushman & Wakefield*; global professional network of assurance, tax and advisory services *PwC*; Division on Investment and Enterprise of United Nations Conference on Trade and Development (UNCTD); Slovakian Chamber of Commerce or business community (AmCham); Slovakian Business Service Center Forum (BSCF) established with the mission to raise awareness of the GBSCs sector's role in the Slovak economy and help it grow further in Slovakia; other.

3. Scientific publications, articles, other researches according to the chosen and analyzed direction of the dissertation research. Full-text databases of Lithuanian and foreign scientific works are used to search for these data (for instance „*Academic Search Complete*", Internet access http://search.ebscohot.com/ etc.).

4. Statistical databases such as *Eurostat*, *World Bank*, *OECD, Trading Economics* and other.

5. Selected CEE countries (Czech Republic, Hungary, Lithuania, Poland, Romania and Slovakia) national statistics offices and institutions (for instance, *Lithuanian Ministry of Social Security and Labour, Migration Information Centre* and other).
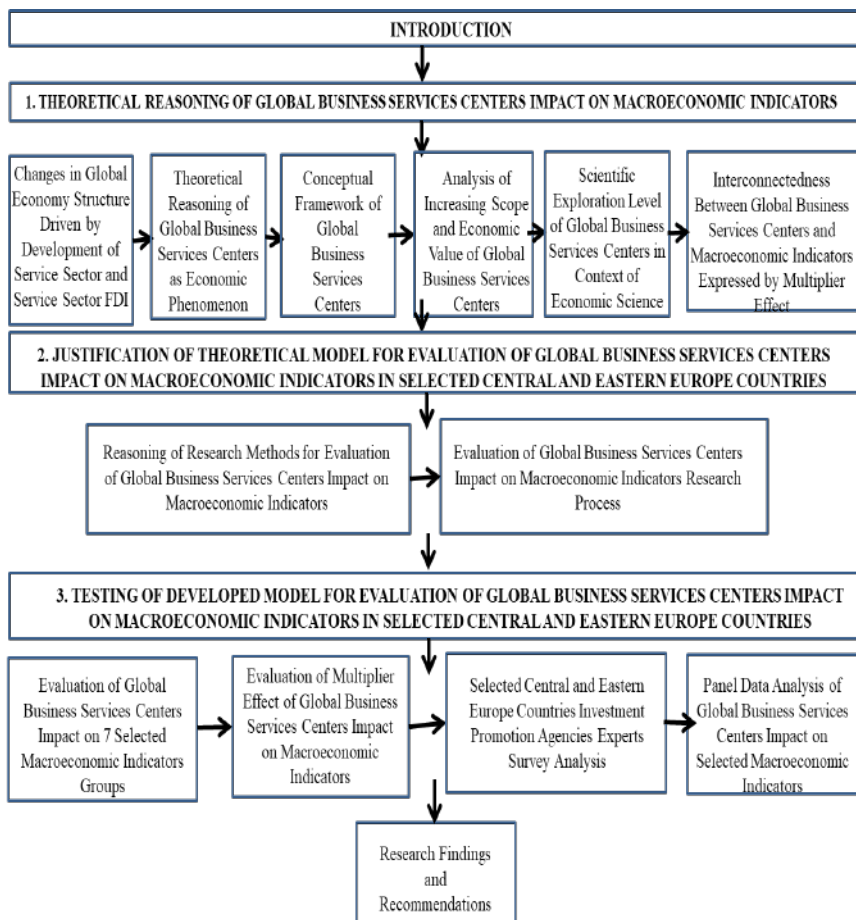
Figure 1. *Logical Structure of Dissertation*
Source: *compiled by author*

The logical structure of the dissertation. The dissertation consists of introduction, three main parts, conclusions and recommendations, references, appendixes and summary in English and Lithuanian languages. The dissertation is 285 pages (496 pages including references, appendices and summary). The logical structure of the dissertation is presented in the Figure 1.

The first part of the dissertation presents the theoretical aspects of GBSCs as the segment of service sector foreign direct investment found during scientific litera-

424

ture analysis.

First of all, *preconditions and consequences of increasing comparative weight of services in the world economy are distinguished*. There is clearly seen path of servitization of economy among scientific researches on changes in world economy structure. World service sector development is seen as the main trigger for constantly changing behavior of economic subjects, who tend to make economic decisions in favor of services sector. Service sector activities are seen as boundaryless activities, which are more approachable due to specific of mostly intangible, knowledge based, human based assets and easier reallocation of them and also managing them at a distance. The shift from manufacturing to service economy demands an adjusted approach to changing economic environment and more comprehensive analysis of preconditions and outcomes of services oriented economic decisions. In the light of global economy servitization, author of this dissertation distinguishes and summarizes the following causes and outcomes of service sector and service sector FDI development: service sector investment liberalization, promotion and facilitation; agglomeration and scale economies – concentration replaces dispersion, efficiency-oriented scale economies business solutions gain a decisive influence in service sector FDI; reshaping of economic geography, which is closely related to the increasing importance of agglomeration and scale economies as well as with internationalization of business services, which look for higher value and tend to be offshored and outsourced; evolution of value add oriented business internationalization forms – GBSCs as significant business form.

Secondly, *service sector foreign direct investment development induced changes in the structure of global economy* are discussed. Changes in FDI structure, flows and dynamics are seen as one of the outcome of development of services sector. FDI development influenced by services sector development shows the increasing importance of analysis of services sector FDI preconditions, outcomes and impact on state economy. Therefore, such segment of service sector FDI as GBSCs is a business form, which is becoming more and more popular, takes the increasing weight in global economy, changes the structure of global microeconomic and macroeconomic indicators and needs to be explored more.

Thirdly, *changing geographical economy of the services sector, the peculiarities of complex environment of business models in the services sector and the emergence of new business models such as GBSCs* is analyzed. In summary, it can be said that the servitization changes in global economy structure and such preconditions or outcomes as

service sector investment liberalization, promotion and facilitation, scale economies with agglomeration, reshaping of the economic geography, encouraged the emergence of comparatively new value add oriented business form such as GBSCs. This business form, from one side, was created to fulfill the value add needs for the companies, but from another side, can be seen as both microeconomic and macroeconomic changes catalyst on the state level. Scientific exploration of evaluation of macroeconomic outcomes due to emergence and development of GBSCs, which are included into the object of this dissertation, should answer the questions which macroeconomic indicators have to be paralleled with GBSCs and how to evaluate GBSCs impact on these macroeconomic indicators.

Fourthly, the *conceptual framework of GBSCs and scientific discussions related to GBSCs phenomenon* are presented. GBSCs place in the investment chain is presented, which shows that GBSCs can be named as segment of services sector FDI. Different views on GBSCs as novel phenomenon definitions are presented including connections with BPO and offshoring. The development of GBSCs phenomenon and its definitions is discussed and the reasoning of different naming for this phenomenon is presented. After existing views on GBSCs definitions are analyzed author of this dissertation offers generalized Global Business Services Center definition: it is global value agile organization, which meets the conditions of multi-function, multi-region, multi-location, multi-sourced and multi-business characteristics and which is using globalization, digital enablement as the core drivers to create value according to common service level agreement. This definition is also visualized for deeper understanding of defined phenomenon.

Fifthly, *the analysis of increasing scope and increasing economic value of GBSCs* is done. Increasing scope seen by author of this dissertation and other researchers as constantly increasing service portfolio provided by GBSCs. The transformation of GBSCs into global value organization, driven by agility and digital enablement is discussed. In summary, it can be said that increasing GBSCs scope means that GBSCs evolved from repeating functions processing organizations to competence centres, where more and more sophisticated functions are being performed. Consequently, these changes stimulate such outcome as increasing economic value. Increasing scope of GBSCs and other changes within such business form increase the competitive advantage and investment attractiveness of the countries, in which GBSCs are located. The switch from standard repeating processes to strategical value add processes can be seen as appraisal of em-

ployees capabilities in the countries, where these GBSCs are located. What is more, this can lead to other macroeconomic outcomes as increasing need for employees in the sector, demand for particular competencies, labor market restructurization, increase of the level of processes knowledge of GBSCs employees, number of languages known in GBSCs, strengthening of different skills needed to cover high-value added processes in GBSCs, increased number of collaborative activities within the organization, increase in wages due to higher qualification and responsibility level, increased income and spending, increased life quality of GBSCs employees and their family members, cross-sectorial development, regional development or certain locations specialization, GDP growth and other outcomes impacting the countries, where these GBSCs are located. Author of the dissertation also concludes that interactions between GBSCs itself as well as public, educational institutions and other parties, who take place in economic life of the state, contribute to the positive macroeconomic effect of GBSCs implementations.

Sixthly, the *scientific exploration level of GBSCs in economic (micro and macro) and managerial literature* is revealed. Microeconomic, managerial and macroeconomic studies paralleled with GBSCs phenomenon are analyzed. Such insights as GBSCs topic intradisciplinarity, fragmentation and scarcity of GBSCs academic literature, microeconomic and managerial researches predominance, especial scarcity of the researches paralleling GBSCs and macroeconomic indicators, macroeconomic researches limitations mainly due to statistical data scarcity and GBSCs macroeconomic outcomes measurability problem, other GBSCs related insights are being disclosed. Also, connections between service sector FDI researches on macroeconomic level and GBSCs macroeconomic value are discussed. Sectorial separation problem is emphasized since macroeconomic indicators are usually being paralleled with FDI in general without distinguishing service sector FDI and it's segment such as GBSCs. Finally, summarized macroeconomic indicators, which according to existing researches are being impacted by GBSCs, are presented and polemical aspects of these researches are presented. The main polemical aspects distinguished by the author of this dissertation are the following: the majority of the researches parallel GBSCs with one or few macroeconomic indicators; minority of the researches evaluate multiplier effect of the GBSCs impact on macroeconomic indicators; each analyzed research parallel GBSCs with employment indicator, which is seen as one of the most important macroeconomic indicator impacted by GBSCs; reports and analysis of national CEE investment promotion agencies

or GBSCs experts in CEE countries include the most comprehensive analysis of GBSCs and their impact on different macroeconomic indicators.

Lastly, *the interconnectedness between GBSCs and macroeconomic indicators expressed by multiplier effect* is revealed. The importance of evaluation of multiplier effect of GBSCs macroeconomic outcomes instead of GBSCs impact on separate macroeconomic indicators evaluation is emphasized by author of this dissertation. The problem of infrequent researches covering GBSCs multiplier effect evaluation is distinguished and different views on multiplier effect evaluation are distinguished including GBSCs direct, indirect, induced and dynamic multiplier effects evaluation importance, GBSCs multiplier effects manifestation in secondary, tertiary and further value chains, GBSCs multiplier effects breakdown as financial and employment multiplier effects and other.

Second part of the dissertation concentrates on the structure of evaluation of GBSCs impact on macroeconomic indicators in CEE countries, according to which research in third part of the dissertation is done.

First of all, the *GBSCs macroeconomic outcomes measurement methods* are analyzed and the applicable research methods for the dissertation topic are distinguished. Examples of researches, which can be or cannot be adapted for evaluation of macroeconomic outcomes of GBSCs are presented and are summarized. After analysis of each chosen example of research, the author of the dissertation expresses the opinion on the existing researches methods applicability in the evaluation of macroeconomic outcomes of GBSCs.

Secondly, the *model for evaluation of GBSCs impact on macroeconomic indicators in CEE* countries is presented and the model is being complemented with expression of GBSCs macroeconomic outcomes multiplier effect manifestation and panel data analysis. The model and panel data analysis research methodology are being described in detail.

Thirdly, the *structural components of the research of evaluation of GBSCs impact on macroeconomic indicators in CEE countries* are presented. The structural components are the following: aim of the research, sample size, research period, research context, main research data sources, logical structure of the research and research methods used for each logical part of the research.

Fourthly, *the reasoning of selected CEE countries as the context for the model of evaluation of GBSCs impact on macroeconomic indicators* is presented. The reasoning of the selection of Czech Republic, Hungary, Lithuania, Poland, Romania and Slovakia as

research context was done based on global insights from researches on CEE as GBSCs destination, geographical similarities, similarities in circumstances and time of joining of EU, macroeconomic background similarities.

Fifthly, the following *research limitations* are distinguished and described: fragmentation of GBSCs literature and lack of prior research studies on the topic, differences in definition of GBSCs phenomenon, lack of available and comprehensive statistics on the topic, lack of access to sensitive GBSCs data, predominance of secondary data analysis, lack of interest of experts to contribute to research, CEE countries as a context for research – selected CEE countries were analyzed and subject to data availability, research period covers from 4 to 13 years (2007-2019) depending on country and analyzed macroeconomic indicator.

Third part of the dissertation presents the evaluation of GBSCs impact on macroeconomic indicators in CEE countries and consists of five main parts and research findings with recommendations.

First of all, the *evaluation of GBSCs impact on macroeconomic indicators in CEE countries is made based on seven distinguished macroeconomic indicators groups*.

Research methods used in *evaluation of GBSCs impact on labor market indicators*: secondary data analysis, qualitative comparative analysis, descriptive statistics, forecasting/projections, experts survey. The main outcomes of GBSCs impact on labor market indicators testing stage noticed by the author of this dissertation are the following:

1. According to the experts surveyed by the author of this dissertation as well as according to the analyzed GBSCs related reports in each selected CEE country, GBSCs play one of the most important roles as labor market indicators accelerators.

2. Employment restructuring is the important GBSCs economic outcome. According to the author of this dissertation, way of working in GBSCs have a huge potential to change the overall view on the way of working in other companies in selected CEE countries. One more employment restructuring aspect seen in GBSCs is talent communities, which employers are expressing a strong interest to create, are of great potential, but it is still unclear how to get started or maintain such a community. In author's view, these talent communities would be valuable not only for the existing GBSCs companies, but for attraction of new GBSCs companies to the market. It could be also valuable for the policymakers on the country level since it would possible to see, analyze and predict the clear trends and situation in this labor market, to take actions

for making new education strategies, investment incentives etc. Both employers and employees as well as educational institutions should be aware and ready for this kind of employment restructuring.

3. Due to recent digital transformations GBSCs in CEE countries are employing more and more robotisation experts and stimulate the demand for other new competencies (for instance languages) and professions, which has to be seen as a sign to study programmes implementors to review these programmes and to adapt to these transformation in order to fulfill the further demands in labor market.

4. GBSCs market is extremely growing in CEE countries and in some countries it is even maturing and gravitating towards a long-term sustainable employment growth rate. GBSCs market share (GBSCs/total employment ratio) has tendency to increase in all selected CEE countries and counted from 1.45 % to 2.17% of employed on country level and this share is also constantly increasing. The data of analyzed CEE countries shows that GBSCs share in the total employment on national level doubled from year 2014 to 2019.

5. Increasing number of GBSCs in selected CEE countries can be also paralleled with the trend in decreasing general unemployment and youth unemployment rates. However, in author's opinion, deeper employment and unemployment indicators analysis needs to be done to make grounded generalizations about GBSCs impact on this employment dynamics, which is now limited due to lack of gathered statistical data. This should be included into further author's researches.

6. Social sciences graduates have huge potential in GBSCs market and this statement was emphasized in the majority of reports made by selected CEE countries. What is more, social sciences graduates are usually being presented as the highest part of unemployed in the selected CEE countries, so GBSCs provide significant employment possibilities in this work force category.

7. Significantly higher salaries offered in GBSCs in comparison to average national salaries as well as wide scope of additional benefits offered to GBSCs employees should have positive effect on life quality of GBSCs employees, their family members and their economic decisions, which influence the economic prosperity of the selected CEE countries.

8. Despite the fact that according to author of this scientific work, in general, it is difficult to make exact estimations and projections for employment related taxes due to constantly changing taxes structure, huge differences in calculations in different CEE

countries and limitation in disclosure of GBSCs salaries information, author of this dissertation presented own calculations of employee income tax and social contributions paid by employer and employees based on average monthly salary in 2019-2020 and employment in GBSCs in 2019 in order to evaluate GBSCs job related contribution (job related taxes) to economies in selected CEE countries. These calculation lead to the following conclusion: GBSCs personal income tax and social employment contributions in 2019 count from approximately 1 % to more than 10 % of total receipts from taxes and social contributions collected by social security funds in 2018 in the selected CEE countries, which is significant part taking into account that it is higher percentage than GBSCs/total employment ratio in the selected CEE countries. Therefore, GBSCs employ from 1.45 % to 2.17% working force in selected CEE countries, but GBSCs employment taxes contribution to the states economies is much higher than statistical average due to higher than average salaries (from approximately 1 % to more than 10 %).

Research methods used in *evaluation of GBSCs impact on spending and consumption indicators*: secondary data analysis, qualitative comparative analysis, descriptive statistics, forecasting/projections, experts survey. The main outcomes of GBSCs impact on spending and consumption indicators testing stage noticed by the author of this dissertation are the following:

1. Statistics and calculations of salaries and social contributions paid by GBSCs presented in GBSCs impact on labor market indicators testing stage show not only the potential of this business to contribute to the state economy, but also can show how important can be employment in GBSCs in terms of the changes in structure of disposable income for consumption, spending, investment or saving.

2. Increase in employment and higher than average salaries in GBSCs leads to restructured consumption in selected CEE countries – additional amounts are being spent or saved (also applicable for increasing GBSCs employees and their family members purchasing power, youth purchasing power, secondary, tertiary and further value chains purchasing power).

3. In case of scenario „spend more" household consumption expenditure indicators, investment indicators and cross-sectorial growth indicators are being influenced. Operating with additional income leads to increased life quality of GBSCs employees and their family members (increased spending and investment rate). Multiplier effect can be also noticed here: the employment and wage increase in GBSCs generate additional income, which employees then spend, potentially generating additional em-

ployment and cross-sectorial growth.

4. In case of scenario „save more", higher than country's average saving due to higher than average salary in GBSCs increases countries saving rate and capacity to cope with a cyclical downturn (short term impact) and economy's capacity to finance itself (long term impact).

5. According to consumption expenditure of households by selected by author consumption purpose (Total expenditure, Food and non-alcoholic beverages, Electricity, gas and other fuels, Recreation and culture and Education in 2019), projected additional annual gross disposable income created due to higher than average selected CEE countries salary in GBSCs in 2020 would cover from 0.44 % to 2.24 % of total household expenditures in 2019, from 2.51 % to 13.66 % of food and non-alcoholic beverages expenditure in 2019, from 5.11 % to 55.29 % of electricity, gas and other fuels expenditure in 2019, from 4.52 % to 29.62 % of recreation and culture expenditure in 2019 and from 29.34 % to 223.71 % of education expenditure in 2019.

Research methods used in *evaluation of GBSCs impact on migration indicators*: secondary data analysis, qualitative comparative analysis, descriptive statistics, experts survey, one-on-one interview with the head of SEB Global Services Vilnius the head of services in Technopolis Vilnius. The main outcomes of GBSCs impact on migration indicators testing stage noticed by the author of this dissertation are the following:

1. Migration indicators analysis with available data for selected CEE countries shows that from ~1 % to ~123 % of emigrated nationals returned (re-emigrated) to selected CEE countries during years 2012-2019. Such countries as Lithuania, Hungary and Slovakia show extremely high re-emigration rates, what means that almost half or more than half emigrated nationals returned (re-emigrated) to their countries of origin. What is more, Slovakia's example shows that the number of re-emigrated nationals exceeded the number of emigrated nationals in years 2016 and 2017 (107.23 % and 123.40 % accordingly). Author of this scientific work assumes that working places created by GBSCs in selected CEE countries could have impact on improving re-emigration rates.

2. Despite the fact that such assumption as working places created by GBSCs in selected CEE countries could have impact on improving re-emigration rates was made by the author according to comparative analysis of re-emigration rate and according to the information that SEB Global Services Vilnius employs around 5 % o re-emigrants, the lack of systemized information and statistics about migration indicators and about

brain drain complicates the research on evaluation of GBSCs impact on these indicators.

3. The experts surveyed by the author of this dissertation also agree that it is difficult to parallel migration indicators and brain drain with GBSCs due to lack of researches/statistics on the employment of re-emigrated nationals in selected CEE countries.

4. Brain drain/emigration and weak governance dependency outcome have to be reduced. Weak understanding on the gain derived from attractive working places created in GBSCs and lack of governmental support to GBSCs implementation and growth is a huge obstacle, which potentially can influence well-educated nationals brain drain/higher emigration level. Therefore, according to the author of this dissertation, governmental support for increasing number of attractive working places created by GBSCs can be one of the solutions for preventing of brain-drain/emigration. However, there is limited possibility to make more precise generalization due to lack of statistical data on this topic mentioned in this dissertation before.

Research methods used in *evaluation of GBSCs impact on life quality indicators*: secondary data analysis, qualitative comparative analysis, experts survey, observation. The main outcomes of GBSCs impact on life quality indicators testing stage noticed by the author of this dissertation are the following:

1. Life quality indicators incorporation into economic evaluation models is a crucial according to the author of this dissertation. Standard econometric models have to be complemented or even replaced by the models explaining life quality indicators, which are intangible, difficult to measure, but more representative. Therefore, author of this dissertation believes that GBSCs in selected CEE countries can be analyzed from life quality prospective and followed this believe in this scientific work.

2. GBSCs in selected CEE countries show the gain including, but not limited to the following life quality indicators: income and respectable working places/conditions in GBSCs, personal development and learning in international environment opportunities, attractive motivational packages, health/family/respect-oriented culture and values, respectable compensation for work, sustainability, diversity and social inclusion emphasized in GBSCs.

Research methods used in *evaluation of GBSCs impact on cross-sectorial growth indicators*: secondary data analysis, qualitative comparative analysis, descriptive statistics, experts survey, one-on-one interview, observation. The main outcomes of GBSCs

impact on cross-sectorial growth indicators testing stage noticed by the author of this dissertation are the following:

1. GBSCs in selected CEE countries show significant positive impact on cross-sectorial development. The scope of the expansion of GBSCs and their way of running business let other secondary market players to expand their businesses, too.

2. Some calculations and the following research on cross-sectorial development was done: office market snapshot and built stock occupied by GBSCs employees in selected CEE countries, hourly rate for cleaning and cleaning market revenue due to GBSCs cleaning, SEB Global Services Vilnius impact on cross-sectorial development and other. However, lack of currently accessible information about all GBSCs in selected CEE countries complicates further research on this topic and enables partial researches according to general publicly accessible information or information revealed to the author by the experts. Therefore, this problem and possible solutions should be included into further author's researches.

Research methods used in *evaluation of GBSCs impact on regional development indicators*: secondary data analysis, qualitative comparative analysis, descriptive statistics, experts survey. The main outcomes of GBSCs impact on regional development indicators testing stage noticed by the author of this dissertation are the following:

1. According to the GBSCs related reports and according to the opinion of the experts surveyed by the author of this dissertation, GBSCs impact on regional development is questioned. From one side, emergence and development of GBSCs in selected CEE countries have positive influence on regional development and provides opportunities to cities other than capital and to the youth from province, but from another side, in some cases the disproportion between bigger and smaller cities is even growing due to GBSCs.

2. Poland is the only country from all included into the research, which shows proved regional growth stimulated by GBSCs sector. Poland is collecting GBSCs related statistics on regional level and is the only analyzed CEE country where non-capital cities are leaders in GBSCs sector headcount and where location specialization is proved by higher location quotient than in capital – Warsaw. In order to achieve such deep regional development evaluation level, national strategy of statistics collection has to be improved allowing to access more accurate GBSCs related statistics and operate with this data to evaluate the regional development stimulated by GBSCs.

Research methods used in *evaluation of GBSCs impact on GDP related indica-*

tors: secondary data analysis, experts survey. The main outcome of GBSCs impact on GDP related indicators testing stage noticed by the author of this dissertation are the following: there is a clear positive GBSCs impact on GDP related indicators. However, due to statistically significant data unavailability for selected CEE countries, which is also proved by the experts from Poland and Slovakia, there is a limited possibility to conduct comprehensive quantitative investigation on GBSCs impact on GDP related indicators and some employment components, cross-sectorial growth indicators mentioned previously in the research and by the surveyed experts are better reflection of GBSCs impact on macroeconomic indicators in selected CEE countries. Therefore, author of this dissertation assumes that GBSCs potentially can have comparatively high impact on GDP indicator mainly due to employment, spending/consumption and cross-sectorial growth enhanced by GBSCs.

The statements in the conclusions from evaluation of GBSCs impact on separate 7 macroeconomic indicators will be also additionally verified by using panel data analysis method (for the macroeconomic indicators, for which statistical data is available and accessible).

Secondly, *general theoretical evaluation of multiplier effect of GBSCs impact on macroeconomic indicators based on direct, indirect, induced and dynamic multiplier effects theoretical statements and their scientific justifications* is made. Author of this dissertation analyzes multiplier effect of GBSCs impact on macroeconomic indicators in selected CEE countries based on theoretical background of economic impact/multiplier effect described in theoretical part of the dissertation and macroeconomic outcomes of seven indicators groups analyzed in the research of the dissertation. Data collected from scientific literature analysis, author's personal experience of work in one of GBSCs in Lithuania, Vilnius, results of scientific research accomplished by author as well as experts questionnaire results are used to reveal the multiplier effects of GBSCs in selected CEE countries. Author would like to emphasize that due to research limitations distinguished in this dissertation, qualitative aspects of general multiplier effects stimulated by GBSCs in selected CEE countries are described. The following multiplier effect theoretical statements are applied in practice by scientific justification of each of them:

1. Direct multiplier effects:

• GBSCs business implementation and maintenance has impact on changes in local business activity due to private business decisions or public policies and programs;

- investment and spending decisions of GBSCs directly affect the flow of spending, income and jobs associated with economic activity;
- cost shift and location competitiveness – GBSCs may change the cost of living and/or business operating cost within a given area, affect the attractiveness of an area for population growth and retention, and for business investment and retention.

2. Indirect multiplier effects:
- Business growth/decline resulting from changes in sales for suppliers to the directly-affected businesses.

3. Induced multiplier effects:
- GBSCs impacts further shifts in spending on food, clothing, shelter and other consumer goods and services, as a consequence of the change in employment and payroll of directly and indirectly affected businesses. This leads to further business growth/decline throughout the local economy.

4. Dynamic multiplier effects:
- *GBSCs consequences of broader shifts over time in population and business location patterns, land use and resulting land value patterns, which may also affect government costs and revenues. These changes will ultimately affect income and wealth - both overall and for particular groups of people in the affected area.*

Author of the dissertation summarizes the multiplier effects of GBSCs by vizualizing them as follows: appearance and positive multiplying outcomes from GBSCs in selected CEE countries seen and evaluated by policymakers resulted in naming GBSCs as key sector players and putting the effort of investment promoting agencies to attract more such investments to these countries; other private business decisions and public policies changes due to GBSCs; employment in GBSCs and other economic gain derived from it; cost shift and location competitiveness. The main indirect multiplier effect of GBSCs in selected CEE countries are related to the fact that GBSCs affect other businesses, which are being established or developed to fulfill the GBSCs needs. The main induced multiplier effect of GBSCs in selected CEE countries is that GBSCs impact further shifts in spending as a consequence of the change in employment and payroll of directly and indirectly affected businesses, which leads to further business growth throughout the local economy. The main dynamic multiplier effect of GBSCs in selected CEE countries is related to GBSCs consequences of broader shifts over time.

Thirdly, *SEB Global Services Vilnius business case analysis is performed as example of multiplier effect of GBSCs impact on macroeconomic indicators in Lithuania*.

Due to sensitive, not publicly accessible data and lack of systemized statistical data for GBSCs, author of this dissertation emphasizes that there is limited possibility to make comprehensive research on all or at least substantial part of GBSCs in selected CEE countries and their multiplier effect on the economies. Therefore, author of dissertation, who is employee of one of the most important GBSCs in Lithuania, combines data on GBSCs multiplier effect in CEE countries presented in dissertation part where general theoretical evaluation of multiplier effect of GBSCs impact on macroeconomic indicators based on direct, indirect, induced and dynamic multiplier effects theoretical statements and their scientific justifications is made, personal knowledge and experience, publicly accessible information and one-on-one interview (the head of SEB Global Services Vilnius and representatives from investment agencies from selected CEE countries) to reveal multiplier effect of macroeconomic outcomes in Lithuania affected by SEB Global Services Vilnius. Since Technopolis Ozas, from which SEB Global Services Vilnius leases the premises (office space, meeting rooms, event venues etc.), is indirect business, which probably has one of the highest economic impacts due to presence of SEB Global Services Vilnius, author of this dissertation additionally presents the research complementation with interview of Technopolis Ozas representative – the head of services.

Invest Lithuania, who is the official agency for Foreign Direct Investment and Business Development in Lithuania, positiones Global Business Services as one of three key sectors in Lithuania. Invest Lithuania describes appearance and development of SEB GBSCs in Vilnius (SEB Global Services) as one of the great success stories. According to Invest Lithuania (2021), SEB Global Services plays a crucial role in providing business support services (operations, IT, HR and finance) for the SEB Group – its subsidiaries and units in 20 countries. Established in 2008, it began operations with 67 employees. In 2020, the SEB Global Services has a team of 1200 (interview with Rūta Jasiulionienė, 2020) highly skilled, multilingual and motivated employees. The convenient geographical location, availability of talent, well-established infrastructure, and the possibility for future growth, along with SEB's presence in Lithuania, were the main reasons why SEB chose Vilnius. The SEB Global Services unites professionals from the junior to the senior, and is constantly on the lookout for team players with aspiration.

Author of the dissertation makes SEB Global Business Services Vilnius business case analysis as example of direct, indirect, induced and dynamic multiplier effects manifestation through seven selected macroeconomic indicators groups (labor

market indicators, spending and consumption indicators, migration indicators, life quality indicators, cross-sectorial growth indicators, regional development indicators and GDP-related indicators). After this analysis generalization of SEB Global Services Vilnius multiplier effect evaluation divided into 2 types is presented: numerical and non-numerical expression of multiplier effect stimulated by SEB Global Services Vilnius.

Numerical expression of multiplier effect stimulated by SEB Global Services Vilnius combines percentage/other expression, employment expression and EUR expression.

Percentage/other expression presents other than employment and EUR expression, which shows more general impacts on macroeconomic indicators, but does not show their exact numerical expression. Such percentages/other expressions are showing that SEB Global Services Vilnius employs almost 0.1 % of total 15-64 years employed in Lithuania, that SEB GBSCs employees annual additional gross disposable income due to higher than average national salary would cover 4.87 % total annual consumption expenditure of household in Lithuania, that there are 5 % of reemigrants among employed in SEB Global Services Vilnius, that SEB Global Services Vilnius approximately occupies 14,440.00 sq. m office space and each sq. m maintenance is useful for Lithuanian economy.

Employment expression shows how many additional working places are being created due to existence of SEB Global Services Vilnius. Author of dissertation emphasizes that actual additional working places number is definitely higher than calculated by author since only data, which was accessible for author of this dissertation, is taken into account and there is no available information about the additional working places created in majority of analyzed services providers, who serve SEB Global Services Vilnius needs. Also, 60 reemigrated employed in SEB Global Services Vilnius were not added into total employment expression, but it shows that we would probably have 60 residents less if SEB Global Services Vilnius would not exist.

EUR expression shows the monthly numerical EUR gain for the Lithuanian economy through paid personal income tax, social contributions, received revenues by secondary services providers. Employment-related taxes paid by 60 reemigrated employed in SEB Global Services Vilnius are also not added into total EUR expression, but it shows that Lithuania would probably have 133,963.92 EUR less paid taxes and additional gross disposable income on a monthly basis if SEB Global Services Vilnius

would not employ them.

Non-numerical expression of multiplier effect stimulated by SEB Global Services Vilnius shows that it is important not to omit intangible or difficult to evaluate macroeconomic aspects in multiplier effect evaluation (life quality indicators, regional development/location specialization indicators and other).

Despite the fact that there is no available quantitative data of additional SEB Global Services Vilnius employees benefits, author assumes that they are inevitably together with numerical benefits such as higher than average salary strongly contribute to improvement of life quality indicators of employees of SEB Global Services Vilnius and their family members.

Also, location quotient, which is indicator derived from employment data within given location and all locations under analysis (in this case Vilnius, Kaunas and Klaipeda) shows that SEB Global Services Vilnius is established in location characterized by high GBSCs specialization and contributes to further Vilnius specialization in this sector. This is important aspect due to the fact that when more GBSCs choose Vilnius as location, the competition within GBSCs sector in Vilnius increases, it helps to attract other GBSCs and stimulate such changes as changes in salaries, working conditions, offered benefits to employees, employment restructuring and other. Lithuanian location quotient shows the strongest GBSCs concentration in capital. However, previous analysis show that, for instance, in Poland the concentration is higher in some non-capital cities. Therefore, author assumes that this indicator can show the potential of other regions to attract more GBSCs.

Moreover, despite the fact that GDP related indicators are usually numerical, they are assigned to non-numerical by author due to the reason that according to analysis performed in this dissertation and experts survey, previously discussed employment components, cross-sectorial growth indicators are better reflection of GBSCs impact on macroeconomic indicators in selected CEE countries. Therefore, analyzed employment indicators, spending/consumption indicators and cross-sectorial growth stimulated by SEB Global Services Vilnius are reflecting the macroeconomic outputs in a better way.

All in all, author of the dissertation concludes that according to available data disclosed by head of SEB Global Services Vilnius and head of Technopolis Vilnius, 1,200 employed in SEB Global Services Vilnius generate at least 36 working places in secondary services sectors, contribute to Lithuanian economy by at least 2,786,049.68

EUR monthly amount through jobs-related taxes and secondary services providers revenue. Additional gross disposable monthly income due to higher than average salary of 1,200 employed in SEB Global Services Vilnius would cover 4.87 % of total annual Lithuanian household expenditures. SEB Global Services Vilnius contributes to brain drain prevention and higher remigration since 5 % of employed here are reemigrants (Lithuanians, who returned from emigration). 1,200 employed here are also contributing to commercial real estate and other related sectors growth by occupying around 14,400,00 sq. m office space. Moreover, SEB Global Services Vilnius contributes to economy and life quality indicators through other intangible or difficult to evaluate gains such as additional benefits, contribute to GBSCs specialization in Vilnius. Author of this dissertation emphasizes that the actual multiplier effect contribution can be even higher since there are secondary services providers, which were identified as stimulated by SEB Global Services Vilnius, but there is no available numerical data about their employment and revenue stimulated by SEB Global Services Vilnius.

The main outcome of the research made on SEB Global Services Vilnius distinguished by author of this dissertation that this organization shows the good example of strong multiplier effect of GBSCs impact on macroeconomic indicators in Lithuania, especially indirect effect mainly due to cross-sectorial growth enhanced by SEB Global Services Vilnius. This research shows how wide economic effect is due to existence of such organization type and rebut the common view that GBSCs have standard effect on economic as each average foreign direct investment organization.

Author of this dissertation by example of SEB Global Services Vilnius proves that the economic impact of GBSCs can be much higher than estimated and can include not only standard economic indicators such as microeconomic indicators or such macroeconomic indicator as GDP growth or other, but also more intangible macroeconomic indicators including labor market indicators, spending and consumption indicators, migration indicators, life quality indicators, cross-sectorial growth indicators and regional development indicators.

Taking into account that only one GBSCs from Lithuanian market, for which author of dissertation had possibility to collect the data, was analyzed, but there is 81 GBSCs employing 19.300 in Lithuania according to Invest Lithuania (data from 2019), author assumes that the similar effect can be seen in other GBSCs in Lithuania and the estimated multiplier effect revealed on SEB Global Services Vilnius example can be applied to other GBSCs in Lithuania. If we would apply the same employment and

EUR axpression (0.03 employment and 2,321.71 EUR monthly amount generated by 1 GBSCs employee) as well as non-numerical expressions for other GBSCs in Lithuania, then we could generalize that 19,300 employed in Lithuania could generate at least 579 working places in secondary services sectors, contribute to Lithuanian economy by at least 44,808,965.75 EUR monthly amount through jobs-related taxes and secondary services providers revenue. In such case other gains such as additional gross disposable income due to higher than average monthly salaries, higher remigration rates, additional benefits contributing to life quality indicators and other would be respectively higher.

Unfortunately, due to lack of reliable statistical and other accessible data for other GBSCs in all selected CEE countries, due to difference in size of these GBSCs, possible geographical differences, possible differences in multiplier effect on macroeconomic indicators for each GBSCs and other specific differences, author of this dissertation cannot make generalizations regarding other GBSCs in all selected CEE countries.

Fourthly, _CEE countries investment promotion agencies experts survey analysis_ complements the research.

Lack of available and comprehensive statistics on the GBSCs topic was the main purpose to choose the CEE countries investment promotion agencies experts survey. The main experts selection criteria was that they would have expertise both in GBSCs field and analysis of macroeconomic indicators. Therefore, author of this dissertation contacted the experts from Czech Republic (Czech Invest), Hungary (Hungarian Investment Promotion Agency HIPA), Lithuania (Invest Lithuania), Poland (Polish Investment and Trade Agency PAIH), Romania (Invest Romania) and Slovakia (Slovak Investment and Trade Development Agency SARIO advised to contact AmCham Slovakia – Chambers of Commerce or business communities and Business Service Center Forum) and asked to fill in the. However, the responses from the experts from Lithuania (Laisvis Makulis, Head of Business Services & ICT at Invest Lithuania at the moment of response, currently Vice President at Invest Lithuania), Poland (name and Agency name will not be disclosed according to the request from the expert) and Slovakia (Peter Rusiňák, American Chamber of Commerce in the Slovak Republic, policy officer and Business Service Center Forum (BSCF) coordinator) received. Experts from Hungary refused to fill in the questionnaire and no response received from the Czech Republic and Romania. During e-mail conversations with number of experts, author noticed that some bureaucratic procedures, fear to disclose sensitive information about

the country or comparatively new GBSCs analysis experience in selected CEE countries were main reasons why there is such response rate.

The survey's aims distinguished by the authors are the following: to find additional statistical data sources or verify if the sources used in the dissertation are relevant; to reveal the expert's observations on GBSCs market situation, it's development level, main tendencies in selected CEE countries and if there are GBSCs oriented organizations/business forums/initiatives/educational institutions, which promote GBSCs emergence, development and spread the knowledge about GBSCs; to introduce the expert's with the author's distinguished seven macroeconomic indicators groups, on which GBSCs in selected CEE countries can have economic impact and to ask the experts to rank them according to importance for the further analysis and to ascertain that all the distinguished macroeconomic groups are reasonable in GBSCs context; to ask country specific questions in order to receive additional information on the macroeconomic indicators groups, which raised the questions to the author of the dissertation or for which there is lack of information in other information sources used in the dissertation; to receive the experts opinion on the relevance of the research made by the author; to ask the experts if they are interested in receiving of final dissertation copy when it is finished in order to spread the knowledge about the field of study of the dissertation; to ask the experts about additional thoughts, recommendations or useful information/links, which were not considered by the author of this dissertation; to know which information about the expert can be disclosed in the dissertation due to the experts right for anonymity if preferred.

The main outcomes of the experts survey are presented in the dissertation and prove the relevance of the research also emphasized by the experts mainly due to the lack of official country level data and analysis of the macroeconomic impact of GBSCs industry.

Fifthly, _quantitative GBSCs impact on selected macroeconomic indicators expression was presented according to panel data analysis._ Available statistical data of selected macroeconomic indicators was included into the panel data analysis.

Finally, _based on the obtained research results, research conclusions and recommendations with the detailed explanation of their implementation are presented_.

Main dissertation research conclusions and recommendations.

In order to achieve the aim set in the dissertation and solve the formulated objectives, the results of the performed theoretical and empirical research allow to form

the following conclusions.

Scientific literature analysis shows that world economy structure shifts are directed towards servitization. Growing relative weight of service sector leads to such economic outcomes as service sector investment liberalization, promotion, facilitation, agglomeration and scale economies and reshaping economic geography. This determines constant emergence and development of global business forms, which can exploit the advantages of globalization and digital enablers to create value in complex hyper competition conditions. As a result of foreign investors reaction to the mentioned changes in service sector such service sector FDI segment as GBSCs is becoming more popular.

Conceptual framework of GBSCs analyzed in the dissertation shows the novelty of this economic phenomenon and fast, constant evolution of it. From one side, variety of changing definitions of GBSCs can be supportive tool to explore the economic nature of this phenomenon. From another side, the diversity of GBSCs definitions leads to some scientific discussions regarding the understanding of it's essence and misinterpretations seen as one of the GBSCs related researches limitation. Based on the insights from different views on GBSCs and the value it brings author formulates GBSCs definition as follows: global value agile organization, which meets the conditions of multi-function, multi-region, multi-location, multi-sourced and multi-business characteristics and which is using globalization, digital enablement as the core drivers to create value according to common service level agreement.

The analysis of increasing scope and economic value of GBSCs phenomenon reveals such aspects: constantly increasing service portfolio provided by GBSCs, centralization of more sophisticated business processes performed by GBSCs – transition from basic economies of scale through standardization and resource re-allocation to customer centric, innovative, continuously improving efficiency organizational model; increasing scope of GBSCs is paralleled with increased and multiplying macroeconomic value, which is mainly seen in the host country where GBSCs are located.

Scientific exploration level of GBSCs as segment of services sector FDI in context of economic science is quite narrow at the current GBSCs phenomenon evolution stage. Furthermore, concentration on more general service sector FDI researches without distinguishing service sector FDI and it's segment such as GBSCs prove the novelty of this phenomenon and the need for evaluation of it's exploration level in economic science context. However, there is a scarcity of researches, where GBSCs and macroeco-

nomic indicators phenomenon are being paralleled. Few such macro analysis researches, which were found by the author, cover some descriptive data, but empirical testing is limited or is not being done at all due to lack of statistical data of this comparatively new GBSCs phenomenon. Also, author found that existing GBSCs researches on macro level cover one or few separate macroeconomic indicators analysis, but there is very limited amount of analysis of different macroeconomic level with emphasis on multiplier effect, which author of this dissertation emphasizes throughout the dissertation.

Interconnectedness between GBSCs and macroeconomic indicators expressed by multiplier effect analyzed in this dissertation shows that variety of macroeconomic indicators have to be included into GBSCs multiplier effect analysis since close interconnectedness between them is seen and the analysis of the set of macroeconomic indicators distinguish the actual value in more accurate way. Analysis of positive economic spillover effect (direct, indirect, induced and dynamic economic effects) in different value chains based on the Economic Development Research Group methodology was used by the author in this dissertation. Also, SEB Global Services Vilnius business case analysis was performed to reveal GBSCs multiplier effect based on Lithuanian example.

The analysis of the research methods used by the researchers to measure the GBSCs macroeconomic outcomes shows that in the light of global servitization processes, from one side, scientists are paying more attention for services sector economic outcomes and their measurability, but from another side, the *GBSCs macroeconomic outcome measurability problem* arises. New business models are constantly arising and the speed of their evolution and real macroeconomic impact is higher than the speed of the scientific exploration level of such new phenomenon and its macoeconomic impact. Therefore, the novelty of GBSCs phenomenon, scarcity of statistical data and scientific researches with GBSCs and macroeconomic indicators parallels, existing researches limitation such as descriptive nature of them rather than using of empirical testing, encourage author of this dissertation to look for the adapted measurement solutions and perform mainly descriptive, cognitive exploring of the GBSCs phenomenon as well as to use the combination of qualitative and available quantitative research methods. These methods can be complemented with more comprehensive quantitative research methods as panel data analysis, regression analysis and other in the future as soon as more statistics on GBSCs topic is available.

Macroeconomic indicators and GBSCs phenomenon parralels revealed in the theoretical part of the dissertation as well as the author's working experience in one

of the biggest GBSCs in Lithuania encouraged the author of this dissertation to include the following macroeconomic indicators into the model for evaluation of GBSCs impact on macroeconomic indicators in CEE countries: labor market indicators, spending and consumption indicators, migration indicators, life quality indicators, cross-sectorial growth indicators, regional development indicators and GDP related indicators. However, the labor market indicators, spending and consumption indicators, life quality indicators and cross-sectorial growth indicators were ranked as the most important according to the experts survey and the same tendency is seen according to the dissertation research results.

Analysis performed in theoretical and methodological parts of this dissertation shows the following research limitations: fragmentation of GBSCs literature and lack of prior research studies on the topic, differences in definition of GBSCs phenomenon, lack of available and comprehensive statistics on the topic, lack of access to sensitive GBSCs data, predominance of secondary data analysis, lack of interest of experts to contribute to research, selection of the part of CEE countries as a context for research. It should be noted that the majority of research limitations are related with the novelty of GBSCs phenomenon, which from one side, raises many questions, complicates the research and encourages to use mainly qualitative research techniques due to statistical data scarcity, but from another side shows the evidence of the need of researches on GBSCs topic. Therefore, according to the author, this dissertation significantly contributes to the improvement of scientific exploration level of the GBSCs phenomenon together with it's parallels with macroeconomic indicators.

Main outcomes of the research, GBSCs impact on <u>labor market indicators</u>: average GBSCs employee can contribute to job related taxes and social contributions up to 5 times more than average employee in other CEE country company. Therefore, GBSCs play one of the most important roles as labor market indicators accelerators, they are not only gravitating towards a long-term sustainable employment growth rate in CEE countries, but also are encouraging such employment-related economic outcomes as employment restructuring (new way of working, demand for new skills, emergence of GBSCs talent communities etc.), employment opportunities for the youth and social science graduates, significantly higher salaries offered in GBSCs in comparison with average national salary, significant contribution to the job related social contributions on the country level and other. Panel data analysis also confirmed the positive GBSCs impact on all the available labor market indicators included into the research:

unemployment rate (percentage of total population), youth unemployment rate (15 to 24 years unemployed as percentage of total population), total receipts from taxes and social contributions (social security funds), million EUR. No GBSCs impact detected on annual net earnings (single person without children earning 100% of the average earning), which can be influenced by statistical data scarcity.

Main outcomes of the research, GBSCs impact on spending and consumption indicators: employment in GBSCs and higher than average national salaries in GBSCs are important change enablers in structure of disposable income for consumption, spending, investment or saving. These enablers lead to the restructured consumption in CEE countries – additional amounts are being spent or saved by GBSCs employees. This impacts increasing GBSCs employees and their family members purchasing power, youth purchasing power, secondary, tertiary and further value chains purchasing power (multiplier effect). In case of scenario „spend more" household consumption expenditure indicators, investment indicators and cross-sectorial growth indicators are being influenced. Operating with additional income leads to increased life quality of GBSCs employees and their family members (increased investment rate). Multiplier effect can be also noticed here: the employment and salaries increase in GBSCs generate additional income, which employees then spend, potentially generating additional employment and cross-sectorial growth. In case of scenario „save more", higher than country's average saving due to higher than average salary in GBSCs increases countries saving rate and capacity to cope with a cyclical downturn (short term impact) and economy's capacity to finance itself (long term impact). Also, according to the author's estimations, projected additional annual gross disposable income created due to higher than average salary in GBSCs in 2020 would cover from 0.44 % to 2.24 % of total annual household expenditures in CEE countries and from 2.51 % to 223.71 % of selected household expenditures in 2019 (food and non-alcoholic beverages expenditure, electricity, gas and other fuels expenditure, recreation and culture expenditure, education expenditure). Panel data analysis also confirmed the positive GBSCs impact on the available spending/consumption macroeconomic indicator included into the research: final consumption expenditure of households, current prices, million EUR.

Main outcomes of the research, GBSCs impact on migration indicators: migration indicators analysis with available data for selected CEE countries shows that from ~1 % to ~124 % of emigrated nationals re-emigrated to selected CEE countries during years 2012-2019. Also, one-on-one interview with the head of SEB Global Services Vil-

nius (Lithuania) shows that around 5 % of employed here in 2019 and 2020 are re-emigrants. Despite the fact that some high re-emigration rates in CEE and Lithuanian business case analysis results can lead to the assumptions that working places created by GBSCs in selected CEE countries could have impact on improving re-emigration rates, the lack of systemized statistics about migration indicators and brain drain complicates the research on evaluation of GBSCs impact on them. Surveyed experts from Lithuania, Poland and Slovakia also agree that it is difficult to parallel migration indicators and brain drain with GBSCs due to lack of researches/statistics on the employment of re-emigrated nationals. Panel data analysis confirms the insignificant negative GBSCs impact on the available migration indicator included into the research: reemigration rate (more nationals reemigrate due to working places created by GBSCs). However, these not too significant results can be affected by the limitation of scarcity of statistical data.

Main outcomes of the research, GBSCs impact on <u>life quality indicators</u>: GBSCs in CEE countries show the macroeconomic gain including, but not limited to the following life quality indicators: income and respectable working places/conditions in GBSCs, personal development and learning in international environment opportunities, attractive motivational packages, health/family/respect-oriented culture and values, respectable compensation for work, diversity and inclusion, sustainability emphasized in GBSCs. According to the author, usually life quality indicators are underestimated when analyzing macroeconomic GBSCs outcomes. Life quality improvement is an important gain, which is intangible and difficult to measure. Experts survey results show that life quality indicator is one of the most important in GBSCs context. Therefore, standard econometric models have to be complemented with the models explaining life quality indicators, especially taking into account the interconnectedness between life quality indicators and other macroeconomic indicators analyzed in this work. Author of this dissertation believes that GBSCs in CEE countries can be analyzed from life quality prospective and followed this believe in this scientific work. No accessible statistical data for panel data analysis was found.

Main outcomes of the research, GBSCs impact on <u>cross-sectorial growth indicators</u>: the scope of expansion of GBSCs and their way of running business let other secondary market players to expand their businesses, too, which is seen as cross-sectorial development. Lack of currently accessible information about all GBSCs in selected CEE countries complicates further research and enables partial cross-sectorial growth

evaluation researches according to general publicly accessible information or information revealed by the experts. For instance, the analysis of real estate market growth impacted by GBSCs shows that GBSCs are seen as one of the main drivers of the demand for the office space in CEE. Due to scarcity of GBSCs statistics, there is limited possibility to evaluate GBSCs impact on the transportation, tourism, accommodation and leisure time, education services and conferences, postal services, medical services, technical support and other secondary markets. However, interview with the head of SEB Global Services Vilnius and personal author's experience show that the number of business trips, team activities, sport events, entertainment for colleagues from other countries, personal development activities, learning, language courses etc. in GBSCs have positive impact on the mentioned secondary services markets. No accessible statistical data for panel data analysis was found.

Main outcomes of the research, GBSCs impact on <u>regional development indicators</u>: according to the GBSCs related researches and according to the opinion of the experts from Lithuania, Poland and Slovakia surveyed by the author of this dissertation, GBSCs impact on regional development is questioned. From one side, emergence and development of GBSCs in selected CEE countries have positive influence on regional development and provides opportunities to cities other than capital and enhances migration to less developed regions, but from another side, in some cases the disproportion between bigger and smaller cities is even growing due to GBSCs. Location quotient estimated in this dissertation also shows that for instance non-capital cities are GBSCs specialized (have the highest GBSCs concentration) in Poland, but Lithuanian example shows that only capital Vilnius can be named as GBSCs specialized city in the country. No accessible statistical data for panel data analysis was found.

Main outcomes of the research, GBSCs impact on <u>GDP related indicators</u>: there is a clear positive GBSCs impact on GDP related indicators, however, GDP components such as labor market indicators, spending/consumption indicators and cross-sectorial growth indicators are better reflection of GBSCs impact on macroeconomic indicators in selected CEE countries than GDP itself (all the research methods including panel data analysis has the same conclusion).

Evaluation of multiplier effect of GBSCs impact on macroeconomic indicators shows the following: the presented by author model for evaluation of GBSCs impact on macroeconomic indicators, the analysis of the direct, indirect, induced and dynamic GBSCs macroeconomic outcome multiplier effects and SEB Global Services Vilnius

multiplier effect manifestation business case analysis show that there is close interconnectedness between all the 7 macroeconomic indicators groups distinguished in this dissertation and paralleled with GBSCs. GBSCs macroeconomic outcomes multiplier effect aspects are seen as the distinctive feature of the dissertation research. Author of this dissertation would like to emphasize that the GBSCs macroeconomic outcomes multiplier effect analysis is better contributing to the improvement of exploration level of evaluation of GBSCs macroeconomic outcomes than it is done when each macroeconomic indicator is solely paralleled with GBSCs.

Based on the research of the dissertation, the following recommendations are provided:

1. *Statistical data gathering legitimation recommendation*. Since the main dissertation research limitation, which limited the possibility to reveal quantitative expression of macroeconomic outcomes stimulated by GBSCs, is the scarcity of the statistical data and the inhomogeneity of the existing statistical data, author of this dissertation would firstly reccomend to ensure this data legitimation on the national level. Currently, different CEE countries use different methods to gather and publish GBSCs related statistical data and such statistical data is difficult to compare or include into quantitative research methods. Czech Republic, Poland and Romania use the services of experts – ABSL agency – for annual GBSCs sector reports mainly based on the surveys of the GBSCs, which agreed to participate in the surveys. These reports are more or less homogeneous, are of the similar structure and evaluate the similar economic indicators. Poland is additionally collecting GBSCs related data with the help of such organizations as Polish Investment and Trade Agency and Pro Progressio foundation, which mainly focuses on different regions/cities business support services market. Hungary's GBSCs sector statistics and other data reflect in the annual publications of Hungarian investment promotion agency (HIPA), which aim is more to promote the country as the destination for establishment of new GBSCs rather than to concentrate on the evaluation of macroeconomic outcomes of the existing GBSCs. Lithuania's GBSCs sector statistics and other data reflect in the annual GBSCs reports prepared by Lithuanian investment promotion agency Invest Lithuania. The data for Lithuanian GBSCs reports is collected annually via GBSCs survey. Slovakia has established AmCham Business Service Center Forum (BSCF), which is the umbrella sectoral association representing over 90 % of all working places in the sector in Slovakia and presenting the annual reports on GBSCs related topics. BSCF has own statistical database, which is reviewed annually, which is

the primary source of all data in the GBSCs sector. Different organizations have different methodologies to represent GBSCs data and usually the gathering of these data is not legitimated in the CEE countries, which means that the quality of data gathering is mainly depend on these organizations efforts to collect them by including as much GBSCs to surveys/database as possible. In author's opinion, current GBSCs data inhomogeneity and incomparability problem could be solved by implementing such legitimate measures:

- CEE countries could use national statistics offices to collect GBSCs statistical data. First of all, it would let to categorize GBSCs as separate sector. Secondly, such compulsory data as number of GBSCs in the country and in each city, number of employees in GBSCs, average slaries in GBSCs, number of re-emigrated nationals employed in GBSCs and other would facilitate the evaluation of GBSCs macroeconomic outcomes and GBSCs sector comparative weight in the economy.

- CEE countries could agree on the main economic indicators, the data on which should be gathered and published in a homogenous way. There is a need of public and GBSCs partnership or even legitimation efforts to collect the data important for the countries economies and further GBSCs investment promotion strategies.

2. ***GBSCs and educational institutions partnership recommendation***. Dissertation research revealed the employment restructuring as one of the important macroeconomic outcomes stimulated by GBSCs. Since GBSCs sector in CEE countries is maturing and gravitating towards a long-term sustainable employment growth rate, there is a need in GBSCs partnership with educational institutions. GBSCs could communicate the demand for current and future competencies needs in the GBSCs and educational institutions could adapt new education programs according to these needs. Also, different students internships, career days and other initiatives could be supported by the GBSCs and educational institutions partnership. These are important aspects for the smooth running of countries labor market, integration of youth with the appropriate education into the constantly changing labor market.

3. ***Creation of the national GBSCs liaison body recommendation***. Current CEE countries practice show that some of the countries tend to commit GBSCs sector analysis functions to institutions, organisations, associations, business forums or other forms (Czech Republic, Poland, Romania, Slovakia). Other CEE countries are performing GBSCs sector analysis through national investment promotion agencies (Hungary, Lithuania). In the author's view, the combination of both expertial work and

cooperation with national promotion investment agencies is the most effective. According to the author of this dissertation, Slovakia shows the good example of how GBSCs liaison body could work in other CEE countries. BSCF, which is GBSCs umbrella organization closely cooperating with national investment promotion agency SARIO, shows the advantages of GBSCs liaison body idea. The similar liaison body in other CEE countries could carry out the activities with the aim to promote the development of GBSCs in CEE countries on national level. Author of this dissertation believes that such GBSCs liaison body could improve the scientific level exporation level of GBSCs (macro)economic outcomes, align country's investment promotion strategy according to these outcomes and look for opportunities how GBSCs can contribute to the fostering of CEE countries economic growth.

Future research guidelines. The results of the dissertation research show that at the current stage of GBSCs phenomenon cognition and accessible statistical data the model of evaluation of the GBSCs impact on macroeconomic indicators in CEE countries presented by author is suitable for the research of this phenomenon. However, the model could be complemented with more quantitative research methods when more statistical data is available for the single researcher.

GBSCs statistical data gathering legitimation, GBSCs and educational institutions partnership and creation of the national GBSCs liaison body in CEE recommendations presented by the author of this dissertation based on the dissertation research and some CEE countries practical examples would enable to involve more quantitative research methods into research and enhance deeper cognition of GBSCs impact on macroeconomic indicators in CEE countries.

Scientific publications on the subject matter of the dissertation.

1. Tamošiūnienė, R., Kislovska, A., Kazlauskienė, E., Gankova, T. (2016). *Economic Aspects of Increasing Value and Scope of Shared Services Centres*. 9th International Scientific Conference "Business and Management 2016". Vilnius Gediminas Technical University, May 12-13, 2016, Vilnius, Lithuania. eISSN 2029-929X. eISBN 978-609-457-921-9. Article ID: bm.2016.75. http://dx.doi.org/10.3846/bm.2016.75

2. Kislovska, A., Tamošiūnienė, R. (2016). *Economic Multiplier Effect of Shared Service Centres*. Scientific journal Ekonomika a management 4/2016, Faculty of Business Administration, University of Economics, Prague.

3. Kislovska A., Tamošiūnienė R. (2017). *Employment Restructuring Enhanced by Shared Service Centres*. UNITECH 2017-Gabrovo, 17-18 November 2017, GABRO-

VO : international scientific conference, Vol. IV : proceedings. Gabrovo: University publishing house "V. APRILOV" – GABROVO, 2017. ISSN 1313-230X, p. 126-130. [M.kr.:S 003; S 004]

4. Kislovska A., Tamošiūnienė R. (2022). *Modelling Evaluation of Macroeconomic Outcomes Stimulated by Global Business Services Centers in Central and Eastern Europe Countries*. Transformation in Business & Economics (TIBE), Vol. 21, No 1 (55), pp. 149-168.

Presentations at scientific conferences on the subject matter of the dissertation.

1. Tamošiūnienė, R., Kislovska, A., Kazlauskienė, E., Gankova, T. (2016). *Economic Aspects of Increasing Value and Scope of Shared Services Centres*. 9th International Scientific Conference "Business and Management 2016". Vilnius Gediminas Technical University, May 12-13, 2016, Vilnius, Lithuania. eISSN 2029-929X. eISBN 978-609-457-921-9. Article ID: bm.2016.75. http://dx.doi.org/10.3846/bm.2016.75

2. Kislovska A., Tamošiūnienė R. (2017). *Employment Restructuring Enhanced by Shared Service Centres*. UNITECH 2017-Gabrovo, 17-18 November 2017, GABROVO : international scientific conference, Vol. IV : proceedings. Gabrovo: University publishing house "V. APRILOV" – GABROVO, 2017. ISSN 1313-230X, p. 126-130. [M.kr.:S 003; S 004

Other scientific activities.

1. Participation in Demola Mid Pitch Event "Thule Operations Center project Demola 2016 Spring group". Business Case Analysis of Thule Operations Center – students and business cooperation, which aim was to prototype the solution for corporate culture of this GBSCs. Winter 2015 – Spring 2016, Demola Premises, Mokslininkų str. 2A, Vilnius.

2. Participation in SEB Stockholm and SEB Global Services Vilnius knowledge transfer projects. 13-24 March (2016), Stockholm and January-April (2017), Stockholm.

CURRICULUM VITAE

Name, surname   Anna Kislovska

E-mail	annavgtu@yahoo.com
Education	2015-2021 Mykolas Romeris University
	Doctoral studies, Economics
	2011-2013 Vilnius Gediminas Technical Universitety (Vilnius Tech)
	Master degree, International business
	2007-2011 Vilniaus Gedimino technikos universitetas (Vilnius Tech)
	Bachelor degree, Business management and administration
Professional experience	2021-now Alter Domus Lithuania, UAB
	Structured Loan Administration Manager
	2021-2021 Swedbank Robur Fonder AB, Lithuanian branch
	Trading and Corporate Actions Specialist
	2016-2020 Skandinaviska Enskilda Banken AB, Vilnius branch
	Senior Bank Operations Specialist, Structured Loans Officer
	2013-2016 Skandinaviska Enskilda Banken AB, Vilnius branch
	Bank operations specialist, Lending Operations
	2011-2013 National Health Insurance Fund under the Ministry of Health
	Department of International Relations, Chief Specialist
Languages	Lithuanian – native
	Polish – native
	English – C1/C2
	Russian – C1/C2
	Swedish – B1

Mokslo daktaro disertacija rengta 2015–2021 metais Mykolo Romerio universitete pagal Vytauto Didžiojo universitetui su ISM Vadybos ir ekonomikos universitetu, Mykolo Romerio universitetu ir Vilniaus universitetu Lietuvos Respublikos

Anna Kislovska

GLOBALIŲ VERSLO PASLAUGŲ CENTRŲ POVEIKIO RYTŲ IR CENTRINĖS EUROPOS ŠALIŲ MAKROEKONOMINIAMS RODIKLIAMS VERTINIMAS

Daktaro disertacijos santrauka
Socialiniai mokslai, ekonomika (S 004)

Vilnius, 2022

švietimo, mokslo ir sporto ministro 2019 m. vasario 22 d. įsakymu Nr. V-160 suteiktą doktorantūros teisę.

Mokslinė vadovė:

prof. dr. Rima Tamošiūnienė (Mykolo Romerio universitetas, socialiniai mokslai, ekonomika S 004).

Mokslo daktaro disertacija ginama Vytauto Didžiojo universiteto, ISM Vadybos ir ekonomikos universiteto, Mykolo Romerio universiteto ir Vilniaus universiteto Šiaulių akademijos ekonomikos mokslo krypties taryboje:

Pirmininkė:

prof. dr. Violeta Pukelienė (Vytauto Didžiojo universitetas, socialiniai mokslai, ekonomika S 004).

Nariai:

doc. dr. Daiva Beržinskienė-Juozainienė (Vilniaus universiteto Šiaulių akademija, socialiniai mokslai, ekonomika S 004);

doc. dr. Žaneta Karazijienė (Mykolo Romerio universitetas, socialiniai mokslai, ekonomika S 004);

prof. dr. Ričardas Krikštolaitis (Vytauto Didžiojo universitetas, gamtos mokslai, matematika N 001);

prof. dr. Filippo Reganati (Romos La Sapienza universitetas, Italijos Respublika, socialiniai mokslai, ekonomika S 004).

Daktaro disertacija bus ginama viešame Ekonomikos mokslo krypties tarybos posėdyje 2022 m. birželio 21 d. 10 val. Mykolo Romerio universitete, II-230 auditorijoje.

Adresas: Ateities g. 20, 08303 Vilnius.

Daktaro disertacijos santrauka išsiųsta 2022 m. gegužės 20 d.

Su disertacija galima susipažinti Lietuvos nacionalinėje Martyno Mažvydo bibliotekoje, ISM Vadybos ir ekonomikos universiteto, Mykolo Romerio universiteto, Vilniaus universiteto Šiaulių akademijos ir Vytauto Didžiojo universiteto bibliotekose.

Anna Kislovska

GLOBALIŲ VERSLO PASLAUGŲ CENTRŲ POVEIKIO CENTRINĖS IR RYTŲ EUROPOS ŠALIŲ MAKROEKONOMINIAMS RODIKLIAMS VERTINIMAS

Santrauka

Temos aktualumas. Paslaugų sektoriaus tiesioginių užsienio investicijų (toliau – TUI) reiškinys tapo plačiai tyrėjų bendruomenėje nagrinėjamu diskusijų objektu dėl globalizacijos ir technologijų plėtros sąlygomis augančio paslaugų sektoriaus lyginamojo svorio pasaulio ekonomikoje. Nuolat kintanti ir sudėtinga tarptautinio verslo aplinka skatina naujų verslo formų atsiradimą ir plėtrą, kurios, viena vertus, yra kuriamos siekiant padidinti įmonės vertę, kita vertus, sąlygoja tarptautinės ekonomikos struktūros pokyčius.

Nepaisant to, kad netrūksta tyrimų, kurių tikslas – atskleisti paslaugų sektoriaus TUI problematiką ir pritaikyti metodus, kurie padėtų išmatuoti šio reiškinio ekonominį poveikį, trūksta tyrimų, kurie įvertina globalių verslo paslaugų centrų (toliau – GVPC) segmento ekonominį poveikį. Pagrindinė autorės įvardijama to priežastis – GVPC pastaruoju metu tapo sparčiai besivystančiu reiškiniu verslo bendruomenėje, tačiau pastebimas šio reiškinio naujumas mokslininkų bendruomenėje. Didėjantis GVPC skaičius sąlygoja verslo geografijos pokyčius ir neišvengiamai paveikia priimančios šalies ekonomikos struktūrą. Taigi svarbu įvertinti kaip šis poveikis pasireiškia, kuriuos priimančios šalies ekonominius rodiklius GVPC atsiradimas ir plėtra paveikia labiausiai. Mokslinėje literatūroje dažnai nagrinėjamos temos tokios kaip paslaugų sektoriaus TUI plėtra, turinys ir specifika. Rečiau nagrinėjamos temos – GVPC poveikis mikroekonominiams rodikliams, GVPC vadybiniai aspektai ir kitos susijusios temos. Disertacijos autorė pastebi, kad mokslinėje literatūroje aptinkami tyrimai neišsprendžia GVPC poveikio priimančios šalies makroekonominiams rodikliams vertinimo problemos.

Vis dėlto, GVPC poveikio šalies makroekonominiams rodikliams vertinimas yra svarbus formuojant priimančios šalies ekonominės politikos nuostatas investicijų pritraukimo srityje. GVPC poveikio makroekonominiams rodikliams vertinimas galėtų prisidėti prie priimančios šalies ekonominės politikos šio TUI segmento atžvil-

giu tobulinimo ir galėtų padėti numatyti ekonominės politikos kryptis, kurias įgyvendinus galimai padidėtų makroekonominė GVPC investicijų pritraukimo vertė.

Mokslinė problematika ir problemos ištyrimo lygis. Nepaisant to, kad GVPC pritraukimas tapo prerogatyva daugumoje Centrinės ir Rytų Europos (toliau – CRE) šalių, kuriose GVPC sektorius nacionalinių investicijų plėtros agentūrų įvardijamas prioritetiniu, vis dar trūksta holistinio požiūrio į GVPC paskatintų makroekonominių poveikių vertinimą ir šių poveikių pasireiškimo specifiką šiose šalyse. Atsitiktiniai veiksmai siekiant pritraukti GVPC, o ne tikslinga jų pritraukimo strategija, pagrįsta ištirtu poveikiu makroekonominiams rodikliams, nesuteikia tiek vertės šaliai, kiek jos faktiškai gali būti, ir tokiomis sąlygomis GVPC makroekonominės išdavos yra nepakankamai įvertintos.

Mokslinė literatūra taip pat ne iki galo atsako į GVPC makroekonominio poveikio matavimo klausimus. Atlikus mokslinės literatūros analizę nustatyta, kad dauguma mokslininkų siekia atskleisti paslaugų lyginamojo svorio pasaulio ekonomikoje augimo prielaidas ir pasekmes, tyrimuose neiškiriant GVPC segmento. The World Bank (2020), World Investment Report (2015-2017), European Commission (2014 a,b), Herbert, Paraskevas (2012), Plaisier et al (2012), Sauvant et al (2010) ir kiti mokslininkai analizuoja ekonomikos servitizacijos[20] aspektus ir išskiria pagrindines paslaugų sektoriaus ir paslaugų sektoriaus TUI tendencijas. Deloitte (2015 a, b), European Commission (2014 a, b) ir kiti tyrėjai pabrėžia kintantį ir sudėtingą verslo paslaugų kontekstą, taip pat naujų verslo formų atsiradimą. Sass et al (2018), Kalašinskaitė (2009), Bellak et al (2008), Gopinath, Echeverria (2004) ir kiti mokslininkai pabrėžia teigiamus ir neigiamus pokyčius, pasireiškiančius investuojančios ir investicijas priimančios šalių ekonomikos struktūrose.

Nagrinėjant mokslinę literatūrą ekonomikos servitizacijos tema pastebimos prieštaringos diskusijos dėl paslaugų ir gamybos sektorių tyrimų atkyrimo ir interpretavimo. Dunning, McQueen, (1982), Casson (1990) ir kitų fundamentinių ekonomikos teorijos atstovų nuomone, paslaugų ir gamybos sektorių lemiantys veiksniai yra panašūs, o fundamentinės gamybos TUI teorijos gali būti taikomos ir nagrinėjant paslaugų sektoriaus aspektus. Vis dėlto, šiuolaikinių tyrimų autoriai (Sass et al, 2018; Barkauskaitė, Naraškevičiūtė, 2016; Ruplienė, 2013; Kalašinskaitė, 2009 ir kiti) teigia, kad TUI poveikis šalies ekonomikai gali būti skirtingas priklausomai nuo sektoriaus, todėl tikslinga būtų analizuoti TUI aspektus atskiriant sektorius ar net ekonomines

---

20   Servitizacijos procesas suprantamas kaip pasaulio/šalies ekonomikos perėjimas prie paslaugų ekonomikos, kai paslaugų sektorius įgyja vis didesnį lyginamąjį svorį pasaulio/šalies ekonomikoje.

veiklas. Taigi, vadovaujantis šiuolaikinių tyrėjų požiūriu, nepaisant to, kad GVPC yra plačiai ištirtų paslaugų sektoriaus TUI segmentu, siekiant tiksliau įvertinti GVPC poveikį makroekonominiams rodikliams, reikėtų atlikti GVPC reiškiniui pritaikytus specifinius jo ypatumus apimančius tyrimus.

Atliekant mokslinės literatūros analizę pastebimas požiūris, kuriam pritaria ir disertacijos autorė: bendrasis vidaus produktas (toliau – BVP) – vienas pagrindinių mokslininkų nagrinėjamų makroekonominių rodiklių, kurį paveikia TUI (Čičak, Sorić, 2015; Kalašinskaitė, 2009; Ruplienė, Garšvienė, 2008 ir kiti) – negali pilnai atspindėti tikros ekonominės situacijos, todėl siekiant nustatyti TUI poveikį ekonomikai reikėtų į vertinimą įtraukti ir tokius makroekonominius rodiklius kaip gyvenimo kokybės rodikliai (Servetkienė, 2013; Pukelienė, Starkauskienė, 2011; Gruževskis et al, 2009; Stiglitz et al, 2009 ir kiti), išplėstiniai darbo rinkos, išlaidų ir vartojimo, migracijos, tarpsektorinės plėtros, regionų plėtros rodikliai ir kiti (Sass et al, 2018; Business Services in the Czech Republic, 2017; Business Sevices Sector in the Czech Republic by ABSL, 2016, 2017, 2019, 2020; Lithuania's Business Services Report, 2016-2020; Business Services Centers in Hungary, 2017-2020; Business Services Sector in Poland by ABSL, 2014-2020; Business Services Sector in Romania by ABSL, 2018-2020; Shared Service & Business Process Outsourcing Centers in Slovakia, 2017-2020; Kuzior, Sobotka, 2019; Ruzsa, 2018; Milewska, 2018; Ślusarczyk, 2017; Skowroński, 2017; Tamošiūnienė, Kislovska, 2015; Wirtz et al 2015; Zenasni, Benhabib, 2013; Mucuk, Demirsel, 2013; Laskienė, Pekarskienė, 2011 ir kiti).

Mokslinėje literatūroje pastebimos keturios pagrindinės paslaugų sektoriaus ir paslaugų sektoriaus TUI prielaidos bei pasekmės: paslaugų sektoriaus investicijų liberalizavimas, skatinimas ir lengvatos (World Investment Report, 2015-2017); aglomeracijos ekonomika ir masto ekonomija (World Development Report, 2009; Smith, 1776 edited by Soares, 2007); ekonominės geografijos pokyčiai (Ruzsa, 2018; Ślusarczyk, 2017; Tamošiūnienė, Kislovska, 2015; Cushman & Wakefield, 2015; Combes et al, 2012; Eichengreen, Gupta, 2012; Combes et al, 2011; Puga, 2010; Gospel, Sako, 2010; Jensen, 2009; World Development Report, 2009; Dunning, Lundan, 2008; Rosenthaland, Strange, 2004; Maskell, Malmberg, 1999; Dunning, 2000; Chandler, 1977; Hymer, 1960 ir kiti); į veiklos vertės didinimą orientuotų verslo internacionalizavimo formų tokių kaip GVPC evoliucija (Invest Lithuania, 2016-2018, 2019; OECD, 2015; Tamošiūnienė, Kislovska, 2015; Wirtz et al, 2015; European Commission, 2014 a, b; World Development Report, 2015 ir kiti).

Teorinis GVPC kaip ekonominio reiškinio pagrindimas pastebėtas šių mokslininkų tyrimuose: GVPC reiškinio koncepcija (ABSL, 2019; Kuzior, Sobotka 2019;

Deloitte, 2016 a, b; Keith et al, 2016; Accenture, 2015; Cushman & Wakefield, 2015; PwC, 2015; Wang, 2015; Wirtz et al 2015; Bondarouk, 2014; Marciniak 2014; Rudzioniene, Sakalauskiene, 2014; Strikwerda, 2014; Marciniak, 2013b; Huber, Danino, 2012; Deloitte, 2011; Miles, 2011; Oshri et al, 2011; Gereffi, Fernandez-Stark, 2010; Bedell, 2010; Kroll, 2005; Schulman et al, 1999 ir kiti), didėjanti GVPC paslaugų apimtis/taikymo sritis ir vertė (ABSL, 2019; Deloitte, 2015 a, b; BearingPoint, 2011 ir kiti), GVPC mokslinis ištyrimo lygis vadybos ir mikroekonominėje literatūroje (ABSL, 2019; Deloitte, 2015-2016 a, b; Cushman & Wakefield, 2015; Kienast, Rudy, 2015; SSON, 2015; UNCTD, 2015; Fersht, Brown, 2014; KPMG, 2015; Knol et al, 2014; PwC, 2014; Marciniak, 2013a; Wenderoth, 2013; Accenture, 2011; BearingPoint, 2011; Fersht et al, 2011; IBM, 2011; Pérez, 2008; CIPFA, 2006; Ulbrich, 2006; Seddon, 2003; Kagelmann, 2001; Aguirre et al, 1998 ir kiti), GVPC mokslinio ištyrimo lygis makroekonominėje literatūroje (Kuzior, Sobotka, 2019; Ruzsa, 2018; CEE Investment Report, 2018; Ruzsa, 2018; Milewska, 2018; Ślusarczyk, 2017; Skowroński, 2017; Biernat-Stawecka, 2016; Tamošiūnienė, Kislovska, 2015; Wirtz et al, 2015; Marciniak, 2014 ir kiti), GVPC ir makroekonominių rodiklių tarpusavio ryšys, išreikštas multiplikatyviniu efektu (Skowroński, 2017; Invest Lithuania, 2015; ABSL, 2011; Micek et al, 2011 ir kiti).

Mokslinės literatūros analizė parodė, kad dauguma tyrėjų pabrėžia vadybinius ar mikroekonominius GVPC aspektus. Be to, nereikšmingas tyrimų skaičius apima GVPC poveikio makroekonominiams rodikliams analizę, o tyrimai paprastai yra aprašomojo pobūdžio arba jų empiriniai tyrimai yra riboti dėl statistinių duomenų trūkumo. Be to, autorės aptikti ir išanalizuoti tyrimai dažniausiai neatsižvelgia į multiplikatyvinį efektą, kadangi GVPC makroekonominiai tyrimai apima vieno ar kelių atskirų makroekonominių rodiklių analizę.

Tyrėjai gretindami vieną ar kelis makroekonominius rodiklius su GVPC prieina išvadą, kad būtina atlikti išsamesnius tyrimus. Vis dėlto, toks tyrimo apribojimas, kaip sąlyginai naujo GVPC reiškinio statistinių duomenų trūkumas, apsunkina tyrimą ir dėl šios priežasties paprastai vietoje kiekybinių tyrimo metodų yra naudojami kokybiniai tyrimo metodai.

Tyrėjų nuomonė, kad tradiciniai makroekonominiai rodikliai ne visada atspindi tikrąjį poveikio mastą šalies ekonomikai, ir multiplikatyvinio efekto vertinimo trūkumas esamuose GVPC reiškinį nagrinėjančiuose tyrimuose taip pat parodo disertacijos temos aktualumą ir naujumą. Šia disertacija siekiama įgyti platesnį GVPC reiškinio pažinimą, įvertinti galimą šio reiškinio multiplikatyvinį efektą ir tokiu būdu atsakyti į klausimą kaip GVPC paveikia makroekonominius rodiklius CRE šalyse.

Mokslinė problema: kokį poveikį makroekonominiams rodikliams turi glo-

balių verslo paslaugų centrai ir kaip šį poveikį įvertinti.

Tyrimo objektas: globalių verslo paslaugų centrų poveikis makroekonominiams rodikliams.

Tyrimo tikslas: išnagrinėjus globalių verslo paslaugų centrų reiškinį ir jo poveikį makroekonominiams rodikliams, sukurti ir empiriškai patikrinti globalių verslo paslaugų centrų Centrinės ir Rytų Europos šalyse poveikio makroekonominiams rodikliams vertinimo modelį.

Tyrimo tikslui pasiekti keliami šie **tyrimo uždaviniai**:

1. Išanalizuoti globalių verslo paslaugų centrų turinį ir specifiką bei globalių verslo paslaugų centrų reiškinio ištirtumo lygį ekonomikos mokslo kontekste.

2. Atskleisti globalių verslo paslaugų centrų poveikio makroekonominiams rodikliams matavimo kriterijų ypatumus ir išryškinti globalių verslo paslaugų centrų bei makroekonominių rodiklių tarpusavio ryšį, išreikštą multiplikatyviniu efektu.

3. Remiantis makroekonominių rodiklių analize ir multiplikatyvinio efekto pasireiškimo specifika, suformuoti ir pagrįsti modelį, kuris įvertintų globalių verslo paslaugų centrų poveikį makroekonominiams rodikliams Centrinės ir Rytų Europos šalyse.

4. Išskirti ir pagrįsti pagrindines globalių verslo paslaugų centrų poveikio makroekonominiams rodikliams pasirinktose Centrinės ir Rytų Europos šalyse modeliavimo struktūros komponentes.

5. Empiriškai patikrinti sukurtą modelį įvertinant globalių verslo paslaugų centrų poveikį makroekonominiams rodikliams pasirinktose Centrinės ir Rytų Europos šalyse, išskirti tyrimo apribojimus bei pateikti tyrimo išvadas ir rekomendacijas.

Tyrimo metodai. Siekiant atskleisti paslaugų sektoriaus TUI turinį ir specifiką bei GVPC segmento kaip ekonominio reiškinio reikšmę, taip pat išskirti makroekonominius rodiklius, kurių dinamika veikiama GVPC, buvo naudojami mokslinės literatūros analizės ir sintezės, kokybinės lyginamosios analizės, grupavimo, apibendrinimo ir ekspertų apklausos metodai.

Siekiant sukurti modelį, kuris įvertintų GVPC poveikį makroekonominiams rodikliams CRE šalyse buvo naudojami kokybinės lyginamosios analizės, apibendrinimo, paveikiamų makroekonominių rodiklių grupavimo, multiplikatyvinio efekto vertinimo ir modeliavimo metodai.

Siekiant įvertinti GVPC poveikį makroekonominiams rodikliams CRE šalyse buvo naudojami šie tyrimo metodai: nacionalinių investicijų plėtros agentūrų ir tarptautinių GVPC ekspertų atliktų tyrimų antrinė duomenų analizė, išsami kiekvienos iš autorių išskirtų makroekonominių rodiklių grupės rodiklių CRE šalyse kokybinė ly-

461

ginamoji analizė; kokybinės lyginamosios analizės ir aprašomosios statistikos metodų kombinacijos detalizavimas: 1. *Darbo rinkos rodikliai*: įdarbintųjų skaičius GVPC, metinis įdarbintųjų GVPC augimas, GVPC/bendrojo šalies užimtumo santykis, GVPC rinkos augimas ir jo sąsajos su nedarbo, jaunimo nedarbo rodikliais, vidutinis GVPC darbo užmokestis ir vidutinis darbo užmokestis šalies mastu, darbdavių ir darbuotojų mokami su darbo santykiais susiję mokesčiai (GVPC/socialinio draudimo fondų surinktų įmokų santykis), kiti darbo rinkos rodikliai tokie kaip darbo rinkos paklausos pokyčiai, darbo vietų restruktūrizavimas (naujas darbo pobūdis, naujų verslui reikalingų kompetencijų ugdymas, naujų profesijų ir įgūdžių paklausos formavimas ir kita). 2. *Išlaidų ir vartojimo rodikliai*: prognozuojamos papildomos metinės disponuojamos pajamos dėl 2020 m. didesnio nei vidutinio šalies darbo užmokesčio GVPC, prognozuojamų papildomų metinių disponuojamų pajamų dėl didesnio nei vidutinio šalies darbo užmokesčio GVPC 2020 m. (pagal realistinį užimtumo scenarijų)/pasirinktų namų ūkių išlaidų santykis, GVPC užimtumo paveikiamų namų ūkių bendroji taupymo norma. 3. *Migracijos rodikliai*: emigracijos ir reemigracijos rodikliai, kuriuos gali paveikti didėjantis patrauklių darbo vietų skaičius esamuose ir naujuose GVPC. 4. *Gyvenimo kokybės rodikliai*: GVPC darbuotojams siūlomų finansinių ir nefinansinių naudų, kurios daro poveikį GVPC darbuotojų ir jų šeimos narių gyvenimo kokybei, palyginimas. 5. *Tarpsektorinės plėtros rodikliai:* nekilnojamojo turto rinkos augimas paveiktas naujų biuro patalpų statybų paskatintų besiplečiančių ir naujų GVPC, įskaitant biuro patalpų rinkos lyginamąją analizę ir GVPC darbuotojų užimamų visų naujų biuro patalpų plotų dalies vertinimą, taip pat GVPC stimuliuojamos patalpų valymo rinkos pajamos ir kitų antrinių paslaugų tiekėjų galimai padidėjusios pajamos dėl GVPC. 6. *Regionų plėtros rodikliai*: GVPC išsidėstymas sostinės ir ne sostinės miestuose, galimų naujų miestų įtraukimo į GVPC plėtrą esama situacija ir ateities perspektyvos, vietovės specializacijos įvertis CRE šalyse – GVPC pasiskirstymas nagrinėjamose vietovėse. 7. *Su BVP susiję rodikliai*: GVPC užimtumas ir jo komponentės kaip svarbiausia BVP sudedamoji dalis, išlaidos/vartojimas ir tarpsektorinė plėtra kaip paskesnės, užimtumo GVPC paskatintos, BVP sudedamosios dalys; prognozavimas: prognozuojamas vidutinis mėnesio atlyginimas GVPC, GVPC paskatinto užimtumo prognozavimas, prognozuojamos papildomos bendrosios disponuojamos pajamos cirkuliuojančios ekonomikoje **dėl didesnio nei** CRE šalių vidutinio darbo užmokesčio GVPC; GVPC stimuliuojamo multiplikatyvinio efekto vertinimas vadovaujantis Ekonominės plėtros tyrimo grupės sukurta metodologija (tiesioginis, netiesioginis, paskatintas ir dinaminis multiplikatoriaus efektas) ir autorės siūlomu vertinimo modeliu (kiekybinės, kokybinės ir kitos muliplikatyvinio efekto išraiškos); SEB Global Services Vilnius vadovės ir Technopolis

paslaugų vadovės apklausa bei SEB Global Services Vilnius verslo atvejo analizė siekiant įvertinti GVPC poveikio makroekonominiams rodikliams multiplikatyvinį efektą Lietuvos pavyzdžiu; Lietuvos, Lenkijos ir Slovakijos ekspertų iš nacionalinių investicijų plėtros agentūrų apklausa; asmeniniai autorės stebėjimai pagal patirtį, įgytą dirbant viename reikšmingiausių (tiek pagal dydį, tiek pagal paslaugų apimtį) GVPC Lietuvoje, Vilniuje; panelinių duomenų analizė (sutelktas MKM regresijos, fiksuotų ir atsitiktinių efektų modeliai) siekiant įvertinti GVPC poveikį pasirinktiems makroekonominiams rodikliams, atsižvelgiant į statistinių duomenų prieinamumą.

Tyrimo apribojimai. Mokslinės literatūros analizės metu autorės pastebėtas didėjantis investuotojų suinteresuotumas CRE šalimis kaip GVPC lokacija Europoje paskatino autorę atlikti tyrimą CRE šalių kontekste. Čekija, Vengrija, Lietuva, Lenkija, Rumunija ir Slovakija – pasirinktos CRE šalys įtrauktos į tyrimą vadovaujantis šių šalių statistinių duomenų prieinamumu. Atsižvelgiant į duomenų prieinamumą, tyrimo laikotarpis apima nuo 4 iki 13 metų (2007-2019), priklausomai nuo šalies ir analizuojamo makroekonominio rodiklio. Kiti disertacijos autorės išskiriami tyrimo apribojimai: ribotas GVPC tyrimų skaičius, literatūros šaltinių fragmentacija, GVPC sąvokų įvairovė nulemta šio reiškinio evoliucijos tąsos, prieinamos ir išsamios statistikos šia tema trūkumas, prieigos prie neskelbtinų GVPC duomenų trūkumas, antrinių duomenų analizės dominavimas, vangus ekspertų įsitraukimas į tyrimo atlikimą.

Ginamieji disertacijos teiginiai.

1. Išimtinai kiekybinių tyrimo metodų naudojimas yra ribotas dėl riboto GVPC reiškinio ištyrimo ir statistinių duomenų trūkumo bei nehomogeniškumo, todėl aprašomojo pobūdžio, kognityvinių, kokybinių ir **šiuo metu prieinamų** kiekybinių tyrimo metodų kombinacija yra geriausias galimas pasirinkimas siekiant atskleisti GVPC poveikį makroekonominiams rodikliams dabartiniame šio reiškinio raidos etape.

2. GVPC sąlygoja skirtingas makroekonomines išdavas priklausomai nuo analizuojamos makroekonominių rodiklių grupės (darbo rinkos rodikliai, išlaidų ir vartojimo rodikliai, migracijos rodikliai, gyvenimo kokybės rodikliai, tarpsektorinės plėtros rodikliai, regioninės plėtros rodikliai, su BVP susiję rodikliai), tačiau šie makroekonominiai rodikliai yra glaudžiai susiję.

3. GVPC poveikio atskiriems makroekonominiams rodikliams vertinimas neatspindi tikrojo poveikio masto, todėl GVPC poveikio makroekonominiams rodikliams vertinimas turėtų būti išsamus, daugialypis procesas, apimantis tarpusavyje susijusių makroekonominių rodiklių įvairovę ir jų multiplikatyvinio efekto vertinimą.

Mokslinė disertacijos vertė ir mokslinis naujumas.

1. Ši disertacija sustiprina GVPC kaip ekonominio reiškinio mokslinį pažinimą. Platesnis santykinai naujo GVPC reiškinio pažinimas atliekamas šioje disertacijoje, šio reiškinio pozicionavimas investicijų grandinėje ir pateikiamas apibendrintas autorės siūlomas šio reiškinio apibrėžimas galėtų paskatinti kitų tyrėjų susidomėjimą disertacijos tema ir įtraukti GVPC į jų tyrimų lauką, kas galėtų padidinti tyrimų, gretinančių GVPC ir makroekonominius rodiklius, skaičių.

2. Disertacijos autorės atlikta mokslinės literatūros analizė parod**ė**, kad yra nemažai tyrėjų, kurių tyrimo laukas – paslaugų sektoriaus TUI ir šio reiškinio ekonominio poveikio išmatavimo problematika. Taip pat pastebimas vidutinis tyrėjų skaičius, kurie į savo tyrimo lauką įtraukia mikroekonominius ir vadybinius GVPC aspektus. Tuo tarpu šios disertacijos autorei pavyko aptikti ribotą tyrimų skaičių, kuriuose GVPC būtų gretinami su makroekonominiais rodikliais. **Ši disertacija** pagilina GVPC poveikio makroekonominiams rodikliams ištirtumo lygį.

3. *Šioje disertacijoje atliktas GVPC reiškinio ištirtumo lygio* ekonomikos mokslo kontekste vertinimas atskleidė disertacijos temos tarpdiscipliniškumą. Atlikus mokslinių tyrimų analizę buvo nustatyta, kad GVPC reiškinys yra plačiau ištirtas vadybos moksle nei ekonomikos moksle. Taip pat disertacijos autorė pastebėjo, kad mokslininkų nagrinėjami GVPC mikroekonominiai aspektai yra glaudžiai susiję su GVPC problematika analizuojama vadybos mokslo literatūroje. Šios disertacijos autorės įžvalgos leidžia teigti, kad šioje disertacijoje atliekamas GVPC gretinimas su makroekonominiais rodikliais ne tik pateikia platesnį požiūrį į GVPC ekonominės vertės pasireiškimo supratimą, bet ir prisideda prie nagrinėjamo reiškinio pažinimo tarpdiscipliniu požiūriu. Atsižvelgiant į tai, kad GVPC yra santykinai naujas ekonominis reiškinys ir esami su šiuo reiškiniu susiję tyrimai dažniausiai apima tik kai kuriuos aprašomuosius duomenis, o empiriniai tyrimai yra apribojami statistinių duomenų trūkumu, kokybinių ir kiekybinių tyrimo metodų kombinacija įgalina tyrėją įvertinti (makro)ekonomines išdavas sąlygojamas GVPC. Tokių tarpdisciplininių tyrimo metodų naudojimo vertė – galimybė pagilinti santykinai naujo ekonominio reiškinio ištyrimo lygį.

4. Remiantis šioje disertacijoje atlikta mokslinės literatūros analize, trūksta GVPC poveikio makroekonominiams rodikliams vertinimo daugialypiškumo, kadangi esami tyrimai paprastai su GVPC gretina vieną ar kelis atskirus makroekonominius rodiklius. Be to, dažniausiai neįvertinamas multiplikatyvinis GVPC poveikio makroekonominiams rodikliams efektas. **Šioje disertacijoje iš**skiriamos septynios makroekonominių rodiklių grupės ir pateikiami pokyčių juose pavyzdžiai siejami su GVPC.

Disertacijoje pristatomas GVPC poveikio makroekonominiams rodikliams vertinimo modelis, kuris yra papildomas multiplikatyvinio efekto išraiška. Pristatomas modelis gali tapti naudingu instrumentu siekiant įvertinti ne tik GVPC, bet ir kitų naujai atsirandančių verslo modelių makroekonominį poveikį.

Praktinė (taikomoji) disertacinio tyrimo reikšmė.

1. Disertacija galėtų būti naudinga ne tik mokslininkų bendruomenėje didinant disertacijos temos mokslinio ištirtumo lygį, bet taip pat galėtų būti reikšminga akademiniame lygmenyje siekiant atspindėti GVPC diktuojamus rinkos pokyčius studijų programose.

2. Disertacija galėtų būti naudinga ir praktikams iš GVPC srities, kurie susipažinę su disertacija praplėstų teorines žinias ir galėtų pateikti daugiau idėjų bei išreikšti praktinius GVPC poreikius, kuriuos disertacijos autorė ir kiti mokslininkai ateityje galėtų ištirti moksliškai.

3. Daugėjant tyrimų, susijusių su disertacijos tema, galimai padidėtų poreikis spręsti problemą dėl statistinių duomenų apie GVPC rinkimą šalių mastu. Tai galėtų paskatinti organizacijų, forumų ar kitų iniciatyvų, didinančių ekonominio GVPC poveikio vertinimo ištyrimo lygmenį, atsiradimą. Apklausti ekspertai iš Lietuvos, Lenkijos ir Slovakijos investicijų plėtros agentūrų vieningai pritarė, kad šiuo metu trūksta analizių vertinančių GVPC poveikį makroekonominiams rodikliams ir vertinimui atlikti reikalingų statistinių duomenų, renkamų ir skelbiamų šalies mastu (ekspertas iš Slovakijos), kad disertacijos tema yra aktuali dėl panašaus pobūdžio tyrimų trūkumo (ekspertas iš Lenkijos) ir dėl to, kad kuo daugiau bus atlikta tyrimų GVPC poveikio šalies ekonomikai tema, tuo efektyviau investicijų plėtros agentūros galėtų dirbti ir šviesti vyriausybę ir visuomenę kaip GVPC prisideda prie gyvenimo kokybės rodiklių gerinimo (ekspertas iš Lietuvos).

4. GVPC poveikio makroekonominiams rodikliams vertinimo ištirtumo lygio didinimas ir disertacijoje pateikiami empirinio tyrimo rezultatai bei kiti galimi susiję tyrimai, paskatinti šios disertacijos, galėtų būti naudingi įstatymų leidėjams, kurie galėtų priimti argumentuotus sprendimus dėl šalies ekonominės politikos krypčių tolesnio GVPC investicijų pritraukimo klausimais.

Moksliniame darbe naudoti informacijos šaltiniai.

1. CRE šalių investicijų plėtros agentūrų atliekamų tyrimų/analizių duomenys: Čekijos verslo ir investicijų plėtros agentūra (CzechInvest), Vengrijos investicijų plėtros agentūra (HIPA), Lietuvos investicijų plėtros agentūra „Investuok Lietuvoje" (angl. Invest Lithuania), Lenkijos investicijų ir prekybos agentūra (PAIH), Rumunijos vyriausybinė organizacija FDI plėtros ir paramos klausimais (InvestRomania), Slovaki-

jos investicijų ir prekybos plėtros agentūra (SARIO).

2. GVPC ir kitų verslo paslaugų ekspertų atliekamų tyrimų/analizių duomenys: verslo paslaugų lyderių asociacija (angl. *Association of Business Service Leader) – ABSL*, kuri yra atsakinga už kasmetinius GVPC tyrimus Čekijoje, Lenkijoje ir Rumunijoje; jungtinių paslaugų ir užsakomųjų paslaugų tinklas (angl. *Shared Services & Outsourcing Network) SSON*, kuris vienija tarptautinę bendruomenę ir daugiau kaip 100 000 narių; verslo patarėjų, audito bendrovė, vienijanti dešimtis tūkstančių profesionalų, dirbančių visame pasaulyje, teikiančių audito, mokesčių ir teisės, finansų konsultacijų, verslo konsultacijų ir rizikos valdymo paslaugas *Deloitte*; globalus nepriklausomų narių-įmonių tinklas, teikiantis audito, mokesčių ir konsultacijų paslaugas *KPMG*; didžiausia pasaulyje privačiai valdoma komercinio nekilnojamojo turto paslaugų bendrovė *Cushman & Wakefield*; globalus draudimo, mokesčių ir konsultacijų profesionalų tinklas *PwC*; Jungtinių Tautų prekybos ir plėtros konferencijos investicijų ir verslo skyrius (angl. *Division on Investment and Enterprise of United Nations Conference on Trade and Development – UNCTD*); Slovakijos prekybos ir verslo bendruomenė (angl. *Chamber of Commerce or business community* (AmCham); Slovakijos verslo paslaugų centrų forumas (angl. *Business Service Center Forum*) – BSCF, įsteigtas siekiant šviesti visuomenę apie GVPC sektoriaus reikšmę Slovakijos ekonomikai ir skatinti šio sektoriaus tolesnę plėtrą; kt.

3. Mokslininkų publikacijos, straipsniai, kiti moksliniai tiriamieji darbai pagal pasirinktą bei nagrinėjamą disertacinio tyrimo kryptį. **Šių duomenų paieškai naudojamos Lietuvos ir užsienio mokslinių darbų visatekstės duomenų bazės** (pavyzdžiui, visatekstė universali duomenų bazė anglų kalba „*Academic Search Complete*", prieiga per internetą: http://search.ebscohot.com/ ir kt.).

4. Statistinės duomenų bazės tokios kaip *Eurostat*, *Pasaulio bankas (*angl. *World Bank)*, Ekonominio bendradarbiavimo ir plėtros organizacija (angl. *Organization for Economic Cooperation and Development – OECD),* Prekybos ekonomika *(*angl. *Trading Economics)* ir kt.

5. Nacionalinės analizuojamų CRE šalių (Čekija, Vengrija, Lietuva, Lenkija, Rumunija ir Slovakija) statistikos tarnybos ir institucijos (pavyzdžiui, *Lietuvos Respublikos socialinės apsaugos ir darbo ministerija, Migracijos informacijos centras* ir kt.).

Disertacijos loginė struktūra.

Disertaciją sudaro įvadas, trys skyriai, išvados ir pasiūlymai, literatūros sąrašas, priedai ir santraukos anglų ir lietuvių kalbomis. Disertacijos apimtis 285 psl. (492 psl. su literatūros sąrašu, priedais ir santraukomis). Disertacijos loginė struktūra pateikta 1 pav.

Pirmoje disertacijos dalyje analizuojami teoriniai GVPC, kaip paslaugų sektoriaus TUI segmento, aspektai.

Pirma, *išskiriamos didėjančio lyginamojo paslaugų svorio pasaulio ekonomikoje prielaidos ir pasekmės.* Aptiktuose moksliniuose šaltiniuose pasaulio ekonomikos struktūros pokyčių tema aiškiai matomas ekonomikos servitizacijos reiškinys. Pasaulinio paslaugų sektoriaus plėtra yra laikoma pagrindiniu, nuolat besikeičiančios ekonominių subjektų elgsenos nukreiptos į paslaugų sektorių, varikliu. Paslaugų sektoriaus veiklos matomos kaip geografiškai beribės, lengvai prieinamos ir vykdomos pasauliniu mastu dėl savo specifikos – daugiausiai neapčiuopiamus, žiniomis pagrįstus išteklius, žmogiškojo kapitalo išteklius, kuriuos perkelti ir valdyti per atstumą yra paprasčiau. Perėjimas nuo gamybos prie paslaugų ekonomikos reikalauja kitokio, lankstesnio požiūrio į besikeičiančią ekonominę aplinką ir išsamesnės su paslaugomis susijusių ekonominių sprendimų prielaidų ir pasekmių analizės. Atsižvelgdama į pasaulio ekonomikos servitizacijos procesus, disertacijos autorė išskiria ir apibendrina šias paslaugų sektoriaus ir paslaugų sektoriaus TUI plėtros prielaidas ir pasekmes: paslaugų sektoriaus investicijų liberalizavimas, skatinimas ir lengvatos; aglomeracijos ekonomika ir masto ekonomija – sklaida pakeičiama koncentracija, o į efektyvumą orientuoto masto ekonomikos verslo sprendimai įgyja lemiamą įtaką paslaugų sektoriaus TUI; ekonominės geografijos pokyčiai, kurie yra glaudžiai susiję su didėjančia aglomeracijos ir masto ekonomikos svarba, taip pat su verslo paslaugų internacionalizavimu ir didesnės vertės kūrimo siekiu, dėl ko verslas linkęs perkelti savo veiklas į kitas šalis (angl. *offshore*) arba perduoti paslaugas atlikti kitiems ekonominiams subjektams (angl. *outsource*); į veiklos vertės didinimą orientuotų verslo internacionalizavimo formų tokių kaip GVPC evoliucija ir reikšmė.
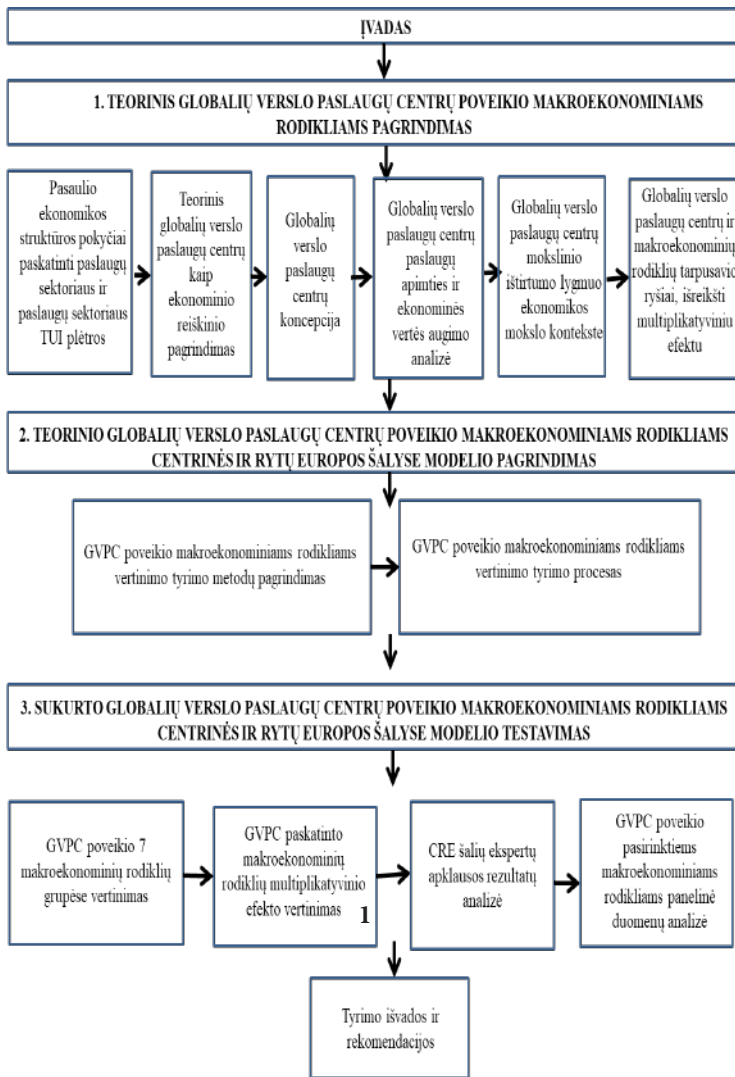
pav. *Disertacijos loginė struktūra*

Šaltinis: *sudaryta autorės*

Antra, *analizuojami paslaugų sektoriaus TUI plėtros sąlygojami pasaulio ekonomikos struktūros pokyčiai.* TUI struktūros, srautų ir dinamikos pokyčiai laikomi viena iš paslaugų sektoriaus plėtros pasekmių. TUI plėtra, kuriai įtakos turėjo paslaugų sektoriaus plėtra, nulemia didėjantį poreikį analizuoti TUI prielaidas, pasekmes ir poveikį

šalies ekonomikai. Dėl šių priežasčių toks paslaugų sektoriaus TUI segmentas, kaip GVPC, yra vis dažniau sutinkama verslo forma, įgaunanti vis didesnį svorį pasaulio ekonomikoje, keičianti pasaulinių mikroekonominių ir makroekonominių rodiklių struktūrą ir reikalaujanti didesnio ištyrimo lygmens.

Trečia, *analizuojami paslaugų sektoriaus ekonominės geografijos pokyčiai, sudėtingos paslaugų sektoriaus verslo modelių aplinkos ypatumai ir naujų verslo modelių, tokių kaip GVPC, atsiradimas.* Apibendrinant galima teigti, kad servitizacijos sąlygojami pasaulio ekonomikos struktūros pokyčiai ir tokios prielaidos ir pasekmės kaip paslaugų sektoriaus investicijų liberalizavimas, skatinimas ir lengvatos, aglomeracijos ekonomika ir masto ekonomija bei ekonomikos geografijos pokyčiai paskatino santykinai naujos GVPC, pridėtinę vertę kuriančios, verslo formos atsiradimą. Viena vertus, ši verslo forma buvo sukurta siekiant patenkinti įmonės pridėtinės vertės poreikius. Kita vertus, šalies mastu šią verslo formą galima vertinti kaip mikroekonominių ir makroekonominių pokyčių katalizatorių. GVPC atsiradimo ir plėtros paskatintų makroekonominių išdavų vertinimo mokslinio ištirtumo analizė atliekama šioje disertacijoje turėtų atsakyti į tokius klausimus: kurie makroekonominiai rodikliai turėtų būti gretinami su GVPC ir kaip įvertinti GVPC poveikį šiems makroekonominiams rodikliams.

Ketvirta, *pristatoma GVPC teorinė koncepcija ir mokslinės diskusijos, susijusios su GVPC reiškinio išaiškinimu.* Paaiškinama kokia yra GVPC vieta visoje investicijų grandinėje ir, kad GVPC galima įvardinti kaip paslaugų sektoriaus TUI segmentą. Pateikiami skirtingi mokslininkų požiūriai į mokslinėje bendruomenėje naujo GVPC reiškinio apibrėžimą, įskaitant ryšius su veiklos perkėlimu į kitas šalis (angl. *offshore*) ir paslaugų atlikimo perdavimu kitiems ekonominiams subjektams (angl. *outsource*). Aptariami GVPC reiškinio plėtros ir apibrėžimo aspektai bei pateikiami skirtingo šio reiškinio apibrėžimo argumentai. Išanalizavusi mokslininkų požiūrius į skirtingus GVPC apibrėžimus, disertacijos autorė siūlo apibendrintą globalių verslo paslaugų centrų apibrėžimą. Globalių verslo paslaugų centras – tai globali, vertę kurianti organizacija, kuri naudojasi globalizacijos, skaitmeniniais įgalinimais kaip pagrindiniais veiksniais kuriant vertę pagal bendrą paslaugų lygio susitarimą (angl. *Service Level Agreement*) ir kurios charakteristikos apima šias sąlygas: daugiafunkciškumas, keli regionai, kelios lokacijos, daugialypiškumas. Siekdama detaliau išaiškinti GVPC reiškinio specifiką, disertacijos autorė taip pat vizualizuoja savo siūlomą apibrėžimą.

Penkta, *analizuojama didėjanti GVPC paslaugų apimtis/taikymo sritis ir ekonominė vertė.* Disertacijos autorės ir kitų mokslininkų nuomone, didėjanti apimtis/taikymo sritis pasireiškia per nuolat augantį GVPC teikiamų paslaugų portfelį ir kompetenciją. Disertacijoje nagrinėjamas GVPC transformacijos į globalią vertės kūri-

mo organizaciją procesas, kurios varomoji jėga – judrumas ir skaitmeninis įgalinimas. Apibendrinant galima sakyti, kad GVPC apimties/taikymo srities augimas reiškia, kad šis verslo modelis evoliucionavo iš pasikartojančių funkcijų atlikimo organizacijų į kompetencijos centrus, kur atliekamos vis sudėtingesnės funkcijos. Didėjanti GVPC apimtis/taikymo sritis ir kiti pokyčiai šiame verslo modelyje padidina tos šalies, kurioje GVPC įsikūrė, konkurencinį pranašumą ir patrauklumą investicijoms, o tai galiausiai skatina ekonominės vertės didėjimą. Perėjimas nuo standartinių pasikartojančių procesų prie strateginės pridėtinės vertės procesų gali būti vertinamas kaip darbuotojų pajėgumų įvertinimas šalyse, kuriose yra įsikūrę GVPC. Tai savo ruožtu gali nulemti ir kitus makroekonominius rezultatus, tokius kaip didėjantis darbuotojų poreikis sektoriuje, tam tikrų kompetencijų poreikis, darbo rinkos restruktūrizavimo procesai, GVPC darbuotojų procesinių žinių lygio padidėjimas, GVPC darbuotojų mokančių užsienio kalbas padidėjimas, GVPC darbuotojų įgūdžių, reikalingų atlikti didelės pridėtinės vertės funkcijas stiprinimas, įvairių tarpusavio bendradarbiavimo veiklų padidėjimas GVPC, atlyginimų augimas dėl aukštesnės kvalifikacijos ir atsakomybės lygio darbų padidėjimo, padidėjusios išlaidos ir vartojimas, geresnė GVPC darbuotojų ir jų šeimos narių gyvenimo kokybė, tarpsektorinė plėtra, regionų plėtra ar tam tikrų vietovių specializacija GVPC srityje, BVP augimas ir kt. Disertacijos autorė taip pat apibendrina, kad pačių GVPC, viešojo sektoriaus įstaigų, švietimo įstaigų ir kitų rinkos dalyvių, dalyvaujančių šalies ekonominiame gyvenime, bendradarbiavimas prisideda prie GVPC paskatinto teigiamo makroekonominio efekto.

Šešta, *atskleidžiamas GVPC mokslinio ištirtumo lygis ekonomikos (mikro ir makro) bei vadybinėje literatūroje.* Analizuojami mikroekonominiai, vadybiniai ir makroekonominiai aspektai gretinami su GVPC reiškiniu. Atskleidžiamos tokios įžvalgos kaip GVPC temos tarpdiscipliniškumas, GVPC mokslinės literatūros fragmentacija ir trūkumas, mikroekonominių ir vadybinių tyrimų dominavimas, ypatingas tyrimų, gretinančių GVPS reiškinį su makroekonominiais rodikliais, trūkumas, makroekonominių tyrimų apribojimai daugiausiai dėl statistinių duomenų trūkumo ir GVPC makroekonominių poveikių išmatuojamumo problematikos ir kt. Be to, aptariami ryšiai tarp paslaugų sektoriaus TUI tyrimų makroekonominiu lygiu ir makroekonominės GVPC vertės. Taip pat akcentuojama sektorių atskyrimo problema, kadangi makroekonominiai rodikliai dažniausiai yra gretinami bendrai su TUI, neišskiriant tokio paslaugų sektoriaus TUI segmento kaip GVPC. Galiausiai, pateikiami apibendrinti makroekonominiai rodikliai, kuriems pagal išanalizuotus tyrimus GVPC daro poveikį ir pristatomi šių tyrimų poleminiai aspektai: daugumoje tyrimų GVPC gretinami su vienu ar keliais makroekonominiais aspektais; mažoji dalis tyrimų įvertina GVPC poveikio makroekonominiams rodikliams multiplikatyvinį efektą; kiekvienas iš disertacijoje aptiktų

tyrimų makroekonominiu lygiu gretina GVPC su darbo rinkos rodikliais, kurie laikomi vieni svarbiausių makroekonominių rodiklių, paveikiamų GVPC; CRE investicijų plėtros agentūrų atliekamuose tyrimuose ir analizėse bei GVPC ekspertų iš CRE šalių įžvalgose pateikiama išsamiausia GVPC poveikio įvairiems makroekonominiams rodikliams vertinimo analizė.

Galiausiai, *atskleidžiami GVPC ir makroekonominių rodiklių tarpusavio ryšiai, išreikšti multiplikatyviniu efektu*. Disertacijos autorė pabrėžia GVPC poveikio makroekonominiams rodikliams multiplikatyvinio efekto svarbą. Išryškinama retai aptinkamų multiplikatyvinio efekto vertinimo tyrimų trūkumo problema, kadangi didžioji dalis tyrėjų vertina GVPC poveikį atskiriems makroekonominiams rodikliams. Taip pat apžvelgiami įvairūs mokslininkų požiūriai į multiplikatyvinio efekto pasireiškimą, įskaitant ir GVPC tiesioginį, netiesioginį, paskatintą ir dinaminį multiplikatyvinius efektus, GVPC multiplikatyvinio efekto pasireiškimą antrinėse, tretinėse ir paskesnėse vertės grandinėse, GVPC multiplikatyvinio efekto skirstymą į finansinį, užimtumo ir kt.

Antroje disertacijos dalyje pagrindžiama GVPC poveikio makroekonominiams rodikliams CRE šalyse vertinimo modelio metodika, pagal kurią atliekamas empirinis tyrimas trečioje disertacijos dalyje.

Pirma, *analizuojami galimi GVPC makroekonominių išdavų matavimo metodai ir išskiriami metodai tinkami disertacijos tyrimui*. Analizuojami ir apibendrinami tyrimų pavyzdžiai ir įvertinamas jų taikomų metodų tinkamumas ar netinkamumas GVPC paskatinto makroekonominių rodiklių poveikio vertinimui.

Antra, *pateikiamas autorės sukurtas GVPC poveikio makroekonominiams rodikliams vertinimo modelis*, kuris yra papildomas makroekonominių rodiklių multiplikatyvinio efekto išraiška ir panelinių duomenų analize. Detaliai aprašomas siūlomas modelis ir pateikiama panelinių duomenų analizės metodologija.

Trečia, *pateikiamos ir aprašomos GVPC poveikio makroekonominiams rodikliams CRE šalyse vertinimo tyrimo struktūrinės dalys*. Aprašomos šios tyrimo struktūrinės dalys: tyrimo tikslas, empirinio tyrimo laikotarpis, imtis, pagrindiniai disertacijoje naudoti informacijos šaltiniai, loginė tyrimo struktūra ir kiekvienoje loginėje dalyje naudojami tyrimo metodai.

Ketvirta, *pagrindžiamas CRE šalių kontekstas GVPC poveikio makroekonominiams rodikliams vertinimo modeliui*. Tyrimo konteksto – tokių CRE šalių kaip Čekijos, Vengrijos, Lietuvos, Lenkijos Rumunijos ir Slovakijos – pagrindimas atliekamas remiantis pasaulinio masto GVPC tyrimų įžvalgomis, geografiniais šalių panašumais, įstojimo į ES sąlygų ir laiko panašumais, šių šalių makroekonominių rodiklių panašumais ir statistinių duomenų prieinamumu.

Penkta, *išskiriami ir aprašomi šie tyrimo apribojimai*: ribotas GVPC tyrimų skaičius, literatūros šaltinių fragmentacija, GVPC sąvokų įvairovė nulemta šio reiškinio evoliucijos tąsos, prieinamos ir išsamios statistikos šia tema trūkumas, prieigos prie neskelbtinų GVPC duomenų trūkumas, antrinių duomenų analizės dominavimas, vangus ekspertų įsitraukimas į tyrimo atlikimą, CRE šalys kaip tyrimo kontekstas. Pasirinktos CRE šalys į tyrimą įtraukiamos atsižvelgiant į šių šalių duomenų prieinamumą, o tyrimo laikotarpis apima nuo 4 iki 13 metų (2007-2019), priklausomai nuo šalies ir analizuojamo makroekonominio rodiklio.

Trečioje disertacijos dalyje atliekamas GVPC poveikio makroekonominiams rodikliams vertinimas, kuris susideda iš penkių pagrindinių tyrimo etapų bei pateikiamos tyrimo išvados ir disertacijos autorės rekomendacijos.

Pirma, *vertinamas GVPC poveikis makroekonominiams rodikliams išskiriant septynias makroekonominių rodiklių grupes*.

Tyrimo metodai naudojami *GVPC poveikiui darbo rinkos rodikliams* įvertinti: antrinių duomenų analizė, kokybinė lyginamoji analizė, aprašomoji statistika, prognozavimas, ekspertų apklausa. Pagrindinės GVPC poveikio darbo rinkos rodikliams vertinimo įžvalgos:

1. Remiantis disertacijos autorės atlikta ekspertų apklausa ir disertacijoje plačiai analizuojamais kiekvienos pasirinktos CRE šalies GVPC tyrimais, GVPC atlieka svarbų darbo rinkos rodiklių katalizatoriaus vaidmenį.

2. Svarbi GVPC ekonominė išdava – paskatinti darbo rinkos restruktūrizavimo procesai. Disertacijos autorės nuomone, besikeičiantis darbo pobūdis ir darbo kultūra puoselėjama GVPC galėtų įgalinti pokyčius taip pat ir kitose CRE šalių įmonėse. Dar vienas autorės pastebėtas darbo rinkos restruktūrizavimo aspektas, akcentuojamas GVCP tyrimuose – talentų bendruomenės. Tokių bendruomenių kūrimu didelį susidomėjimą išreiškia GVPC darbdaviai. Vis dėlto, iki šiol ieškoma būdų kaip tokią bendruomenę pradėti kurti ir palaikyti. Disertacijos autorė išreiškia nuomonę dėl tokių bendruomenių vertės ne tik CRE šalyse įsikūrusių GVPC atstovams, bet ir galimų naujų GVPC investicijų pritraukimui skatinti. Talentų bendruomenių kūrimu galėtų būti sudominti ir politikos formuotojams šalių mastu, kadangi jos galėtų prisidėti prie naujausių tendencijų darbo rinkoje analizių ir numatymo, skatinti atnaujinti švietimo strategijas, palengvinti investicijų pritraukimą ir kt. Tiek darbdaviai ir darbuotojai, tiek švietimo įstaigos turėtų būti pasiruošusios tokio pobūdžio darbo rinkos rodiklių restruktūrizavimui.

3. Dėl CRE šalių tyrimuose akcentuojamos vykstančių sparčių skaitmenizacijos procesų, GVPC įdarbina vis daugiau robotizacijos ekspertų, stimuliuoja paklausą naujoms kompetencijoms (pvz. užsienio kalbų įgūdžiams ir kt.) ir specialybėms. Šie

pokyčiai galėtų sužadinti poreikį švietimo programų vykdytojams peržiūrėti šias programas ir pritaikyti jas prie tolesnių darbo rinkos reikalavimų tendencijų.

4. GVPC rinka sparčiai auga CRE šalyse, o kai kuriose iš jų netgi užtikrina ilgalaikį užimtumo augimo tempą. GVPC rinkos dalis (GVPC/bendro užimtumo santykis) nuolat tendencingai didėja visose pasirinktose CRE šalyse ir šiuo metu sudaro nuo 1,45 % iki 2,17 % įdarbintųjų šalies mastu. CRE šalių tyrimų duomenimis, GVPC įdarbintųjų dalis bendrame CRE šalių užimtume nuo 2014 iki 2019 m. padvigubėjo.

5. Didėjantis GVPC skaičius pasirinktose CRE šalyse galėtų būti gretinamas su bendrojo ir ypatingai jaunimo bedarbių skaičiaus mažėjimu. Vis dėlto, autorės nuomone, turėtų būti atlikta išsamesnė šių priklausomybių analizė, kad galima būtų daryti pagrįstas išvadas šia tema. Atsiradus daugiau statistinių duomenų autorė galėtų įtraukti šių priklausomybių analizę į savo tyrimų lauką.

6. Daugumoje pasirinktų CRE šalių tyrimuose akcentuojamas socialinių mokslų absolventų potencialas GVPC rinkoje. Šis aspektas ypač svarbus įvertinus tai, kad didžiausią jaunimo bedarbių dalį šiose šalyse sudaro būtent socialinių mokslų absolventai, o GVPC suteikia didžiausias galimybes įsidarbinti būtent šiems darbo rinkos atstovams.

7. Didesni GVPC siūlomi atlyginimai, palyginus su vidutiniais nacionaliniais CRE šalių atlyginimais, kartu su plačiu spektru papildomų naudų siūlomų GVPC darbuotojams teigiamai veikia GVPC darbuotojų ir jų šeimos narių gyvenimo kokybės rodiklius bei jų ekonominius sprendimus, prisidedančius prie ekonominės gerovės didinimo CRE šalyse.

8. Nepaisant to, kad autorė apibendrina, kad dėl nuolat kintančios mokesčių struktūros ir didelių mokesčių apskaitos skirtumų CRE šalyse ir riboto GVPC darbuotojų atlyginimų atskleidimo, yra sudėtinga tiksliai apskaičiuoti ir prognozuoti su darbo santykiais susijusius mokesčius. Vis dėlto, siekiant įvertinti GVPC poveikį ekonomikai (vertinant sumokėtus su darbo santykiais susijusius mokesčius), disertacijoje pateikiami GVPC darbuotojų sumokamų gyventojo pajamų mokesčių ir darbuotojų bei darbdavių mokamų socialinių įmokų paskaičiavimai remiantis vidutiniais GVPC atlyginimais 2019-2020 m. ir GVPC darbuotojų skaičiumi 2019 m. Atlikusi tokius paskaičiavimus, autorė prieina išvadą: GVPC darbuotojų sumokėti gyventojo pajamų mokesčiai ir GVPC sumokėtos socialinės įmokos 2019 m. sudarė nuo vidutiniškai 1 % iki daugiau nei 10 % visų 2018 m. CRE šalyse sumokėtų tokių mokesčių. Pažymima, kad GVPC/bendro užimtumo santykis yra vidutiniškai mažesnis nei vidutiniškai sumokama tokių mokesčių, t. y. GVPC vertė per sumokamus mokesčius yra didesnė nei vidutinio šalies darbuotojo. GVPC įdarbindama nuo 1,45 % iki 2,17 % šalies gyventojų, bet sumokama nuo apytiksliai 1 % iki daugiau nei 10 % visoje šalyje su darbo

santykiais susijusių mokesčių.

Tyrimo metodai naudojami *GVPC poveikiui išlaidų ir vartojimo rodikliams* įvertinti: antrinių duomenų analizė, kokybinė lyginamoji analizė, aprašomoji statistika, prognozavimas, ekspertų apklausa. Pagrindinės GVPC poveikio išlaidų ir vartojimo rodikliams vertinimo įžvalgos:

1. GVPC atlyginimų ir mokamų socialinių įmokų statistiniai duomenys bei paskaičiavimai atlikti vertinant GVPC poveikį darbo rodikliams parodo ne tik šios verslo formos potencialą prisidėti prie šalies ekonomikos gerovės, bet ir išryškina GVPC įdarbintųjų reikšmę prisidedant prie disponuojamų pajamų, skirtų išlaidoms, vartojimui, investavimui ar taupymui, struktūros pokyčių.

2. GVPC paskatinto užimtumo didėjimas ir didesni nei šalies vidutiniai atlyginimai nulemia vartojimo struktūros pokyčius CRE šalyse – papildomos ekonomikoje cirkuliuojančios lėšos gali būti išleidžiamos (vartojimui, investicijoms) arba sutaupomos. Šios papildomos lėšos padidina ir GVPC darbuotojų (tuo pačiu ir jaunimo), jų šeimos narių perkamąją galią, taip pat perkamąją galią antrinėje, tretinėje ir paskesnėse vertės grandinėse.

3. Pagal scenarijų „daugiau išleidžiama" paveikiami namų ūkių vartojimo išlaidų rodikliai, investicijų rodikliai ir tarpsektorinės plėtros rodikliai. Tokiu atveju ekonomikoje cirkuliuojant papildomoms disponuojamoms pajamoms didėja ir GVPC darbuotojų bei jų šeimos narių gyvenimo kokybė. Tokiu atveju įsijungia ir multiplikatyvinio efekto mechanizmas – įdarbintųjų skaičiaus ir jų atlyginimų didėjimas generuoja papildomas pajamas dėl išleistų papildomų pajamų, skatina įdarbintųjų skaičiaus augimą kituose susijusiuose sektoriuose, tarpsektorinę plėtrą.

4. Pagal scenarijų „daugiau sutaupoma", didėjant santaupoms, atsiradusioms dėl GVPC mokamų didesnių nei vidutinių šalies atlyginimų, didėja **šalių taupymo norma ir pajėgumas geriau susidoroti su cikliniais ekonominiais nuosm**ukiais (trumpalaikis poveikis) bei ekonomikos savifinansavimo pajėgumas (ilgalaikis poveikis).

5. Išanalizavus namų ūkių vartojimo išlaidas pagal pasirinktą vartojimo tikslą (visos išlaidos, išlaidos maistui ir nealkoholiniams gėrimams, išlaidos elektros energijai, dujoms ir kitam kurui, poilsio ir kultūros išlaidos, švietimo išlaidos, 2019) ir prognozuojamas papildomas metines disponuojamas pajamas dėl 2020 m. didesnio nei vidutinio šalies darbo užmokesčio GVPC, paaiškėjo, kad šios papildomos pajamos galėtų padengti nuo 0,42 % iki 2,18 % visų 2019 m. namų ūkių metinių vartojimo išlaidų, nuo 2,42 % iki 13,25 % 2019 m. išlaidų maistui ir nealkoholiniams gėrimams, nuo 4,93 % iki 54,78 % 2019 m. išlaidų elektros energijai, dujoms ir kitam kurui, nuo 4,36 % iki 29,35 % 2019 m. poilsio ir kultūros išlaidų, ir nuo 28,30 % iki 217,15 % 2019 m. švietimo išlaidų.

Tyrimo metodai naudojami *GVPC poveikiui migracijos rodikliams* įvertinti: antrinių duomenų analizė, kokybinė lyginamoji analizė, aprašomoji statistika, ekspertų apklausa, SEB Global Services Vilnius vadovės ir Technopolis paslaugų vadovės apklausa. Pagrindinės GVPC poveikio migracijos rodikliams vertinimo įžvalgos:

1. Migracijos rodiklių analizė pagal prieinamus statistinius duomenis CRE šalyse parodo, kad 2012-2019 m. nuo ~1 % iki ~123 % emigravusių piliečių grįžo (reemigravo) į CRE šalis. Tokiose šalyse kaip Vengrija, Lietuva ir Slovakija reemigravusių piliečių skaičius yra ypatingai aukštas – pusė ar daugiau nei pusė emigravusių piliečių reemigravo į šias šalis. Taip pat Slovakijos pavyzdys rodo, kad 2016 ir 2017 m. reemigravusiųjų skaičius viršijo emigravusiųjų skaičių (atitinkamai 107,23 % ir 123,40 %). Šios disertacijos nuomone, GVPC sukurtos darbo vietos galėjo paveikti didėjančius reemigracijos rodiklius CRE šalyse.

2. Nepaisant disertacijos autorės prielaidų apie tai, kad GVPC sukurtos darbo vietos galėjo paveikti didėjančius reemigracijos rodiklius CRE šalyse, pagrįstų atlikta reemigracijos rodiklių analize ir informacija gauta apie SEB Global Services Vilnius įdarbintus reemigrantus (5 %), sistemingos informacijos ir statinių duomenų apie migracijos rodiklius ir protų nutekėjimą trūkumas apsunkina GVPC poveikio šiems rodikliams vertinimo tyrimus.

3. Apklaustieji ekspertai taip pat teigia, kad dėl tyrimų/statistinių duomenų apie reemigravusiųjų į CRE šalis piliečių įsidarbinimą trūkumo yra sudėtinga gretinti migracijos ir proto nutekėjimo rodiklius ir daryti su tuo susijusias išvadas.

4. Yra aišku, kad reikėtų mažinti protų nutekėjimo/emigracijos ir netinkamų valdžios sprendimų priklausomybės sąlygojamus neigiamus padarinius. Nepakankamas naudos, gaunamos iš patrauklių GVPC sukuriamų darbo vietų, įvertinimas ir vyriausybės paramos GVPC pritraukimui trūkumas – didelės kliūtys, kurios galimai prisideda piliečių protų nutekėjimo ir emigracijos. Todėl, autorės nuomone, vyriausybės parama skatinant GVPC pritraukimą ir jų įdarbinamų piliečių skaičiaus augimą yra vienas iš sprendimų proto nutekėjimo/emigracijos prevencijai. Vis dėlto, negalima daryti tikslių apibendrinimų, dėl šioje disertacijoje minėto statistinių duomenų šia tema trūkumo.

Tyrimo metodai naudojami *GVPC poveikiui gyvenimo kokybės rodikliams* įvertinti: antrinių duomenų analizė, kokybinė lyginamoji analizė, ekspertų apklausa, stebėjimas. Pagrindinės GVPC poveikio gyvenimo kokybės rodikliams vertinimo įžvalgos:

1. Autorės nuomone, gyvenimo kokybės rodiklių įtraukimas į ekonominių reiškinių vertinimo modelius yra būtinas siekiant tiksliau įvertinti ekonominį poveikį. Standartiniai ekonometriniai modeliai turi būti papildomi ar kai kuriais atvejais pa-

keičiami gyvenimo kokybės rodiklių vertinimo modeliais, kurie išaiškina neapčiuopiamą, sunkiai išmatuojamą, bet akivaizdžią naudą šalies gerovei. Dėl šios priežasties šios disertacijos autorės manymu, GVPC pasirinktose CRE šalyse gali būti analizuojami iš gyvenimo kokybės rodiklių gerėjimo perspektyvos ir šis autorės įsitikinimas atsispindi disertacijos tyrime.

2. GVPC į tyrimą įtrauktose CRE šalyse savo darbuotojams siūlo šias ir kitas gyvenimo kokybę gerinančias naudas: pajamos ir orias darbo bei gyvenimo sąlygas užtikrinantis darbas, asmeninis tobulėjimas ir mokymasis tarptautinėje aplinkoje, patrauklūs motyvaciniai paketai, į sveikatą/šeimą/pagarbą orientuota kultūra ir vertybės, orus darbo užmokestis, GVPC pabrėžiamas tvarumas, įvairovės nediskriminavimas, socialinė įtrauktis ir kt.

Tyrimo metodai naudojami *GVPC poveikiui tarpsektorinės plėtros rodikliams* įvertinti: antrinių duomenų analizė, kokybinė lyginamoji analizė, aprašomoji statistika, ekspertų apklausa, SEB Global Services Vilnius vadovės ir Technopolis paslaugų vadovės apklausa, stebėjimas. Pagrindinės GVPC poveikio tarpsektorinės plėtros rodikliams vertinimo įžvalgos:

1. GVPC į tyrimą įtrauktose CRE šalyse ženkliai paveikia tarpsektorinės plėtros rodiklius. GVPC plėtros mastai ir šių įmonių verslo valdymo modelis skatina kitų antrinių rinkos dalyvių verslo plėtrą.

2. Disertacijoje pateikiami skaičiavimai ir tyrimai tarpsektorinės plėtros klausimais: biuro patalpų rinkos lyginamojo analizė, GVPC darbuotojų užimamų visų naujų biuro patalpų plotų dalies vertinimas, GVPC stimuliuojamos patalpų valymo rinkos pajamos ir kitų antrinių paslaugų tiekėjų galimai padidėjusios pajamos, kt. Vis dėlto, GVPC statistinių duomenų trūkumas tiriamose CRE šalyse apriboja tyrimą ir galimi tik daliniai tyrimai pagrįsti viešai prieinama arba ekspertų apklausos metu atskleista informacija. Taigi ši problema ir galimi jos sprendimo būdai galėtų būti tolesnių disertacijos autorės tyrimų lauke.

Tyrimo metodai naudojami *GVPC poveikiui regionų plėtros rodikliams* įvertinti: antrinių duomenų analizė, kokybinė lyginamoji analizė, aprašomoji statistika, ekspertų apklausa. Pagrindinės GVPC poveikio regionų plėtros rodikliams vertinimo įžvalgos:

1. Remiantis išanalizuotais su GVPC aspektais susijusiais tyrimais, ir disertacijos autorės apklaustų ekspertų nuomone, abejojama GVPC poveikiu regionų plėtrai. Viena vertus, GVPC atsiradimas ir plėtra CRE šalyse teigiamai paveikia regiono plėtrą ir suteikia daugiau galimybių ne sostinės miestams, jaunimui iš regionų. Kita vertus, kai kuriais atvejais atotrūkis tarp mažesnių ir didesnių miestų net auga dėl GVPC poveikio.

2. Lenkija yra vienintelė iš į tyrimą įtrauktų šalių, kurios patirtis rodo, kad GVPC sektorius prisideda prie regionų plėtros. Lenkijos skelbiami regioniniai statis-

tiniai GVPC duomenys ir vietovės specializacijos įvertis (GVPC pasiskirstymas nagrinėjamose vietovėse) rodo, kad ne sostinės miestai aplenkia sostinę GVPC kiekio ir jų darbuotojų skaičiumi, taigi šių miestų vietovės specializacijos įvertis yra didesnis. Siekdamos pasiekti tokį regionų plėtros įvertinimo lygį kaip Lenkijoje, kitos CRE šalys turėtų koreguoti statistikos rinkimo strategiją nacionaliniu ir regionų mastu. Taip regionų plėtra galėtų būti išsamiau įvertinta.

Tyrimo metodai naudojami *GVPC poveikiui su BVP susijusiems rodikliams* įvertinti: antrinių duomenų analizė, ekspertų apklausa. Pagrindinė GVPC poveikio su BVP susijusiems rodikliams vertinimo įžvalga – GVPC neabejotinai prisideda prie su BVP susijusių rodiklių augimo. Vis dėlto, dėl statistinių duomenų trūkumo, taip pat patvirtinto disertacijos apklaustų ekspertų iš Lenkijos ir Slovakijos, galimybės atlikti su BVP susijusių rodiklių gretinamų su GVPC analizę yra ribotos. Taip pat, GVPC užimtumas ir jo komponentės įvardijamos svarbiausia BVP sudedamąja dalimi, o apklausti ekspertai pritaria, kad išlaidos/vartojimas ir tarpsektorinė plėtra kaip paskesnės, užimtumo GVPC paskatintos, BVP sudedamosios dalys, geriau atspindi makroekonominį GVPC poveikį. Apibendrinama, kad GVPC galimai santykinai stipriai paveikia su BVP susijusius rodiklius, o daugiausiai šis poveikis pasireiškia per užimtumą, išlaidas/vartojimą ir tarpsektorinę plėtrą.

Išvados dėl GVPC teigiamo poveikio atskleistos šioje darbo dalyje bus papildomai patikrintos ir pasitelkiant panelinių duomenų analizės metodą (tiems makroekonominiams rodikliams, kurių statistiniai duomenys bus prieinami).

Antra, *bendrojo GVPC stimuliuojamo tiesioginio, netiesioginio, paskatinto ir dinaminio multiplikatyvinio efekto makroekonominiams rodikliams vertinimas kiekvienam multiplikatyvinio efekto teoriniam teiginiui pateikiant mokslinį pagrindimą*. Disertacijoje analizuojamas GVPC poveikio makroekonominiams rodikliams tiriamose CRE šalyse bendrasis multiplikatyvinis efektas atsižvelgiant į disertacijos teorinėje dalyje aprašytą ekonominio poveikio multiplikatyvinį efektą ir ištirtų septynių makroekonominių rodiklių grupių poveikio pasireiškimą. Siekiant atskleisti GVPC multiplikatyvinį efektą CRE šalyse buvo vadovautasi mokslinės literatūros analizės metu aptiktais duomenimis, autorės asmenine patirtimi dirbant viename iš didžiausių GVPC Lietuvoje, Vilniuje, autorės disertacijoje atlikto tyrimo rezultatais ir ekspertų apklausos rezultatais. Reikėtų pabrėžti, kad disertacijoje išskirti ir aprašyti tyrimo apribojimai nulėmė, kad bendrasis multiplikatyvinis GVPC efektas makroekonominiams rodikliams CRE šalyse vertinamas yra kokybinio pobūdžio. **Šie multiplikatyvinio efekto teoriniai teiginiai buvo pritaikyti praktikoje pateikiant jų mokslinį pagrindimą**:

1. Tiesioginis multiplikatyvinis efektas:

- GVPC verslo steigimas ir jo palaikymas paveikia tos vietovės, kurioje GVPC

įsikūrę, ekonominę aplinką dėl privataus verslo priimamų sprendimų ir viešosios politikos bei programų;

• GVPC investavimo ir išlaidų sprendimai tiesiogiai paveikia išlaidų, pajamų ir darbo vietų, susijusių su šia ekonomine veikla, srautus;

• išlaidų pokyčiai ir vietovės konkurencingumas – GVPC gali pakeisti gyvenimo ir (arba) verslo veiklos išlaidas tam tikroje vietovėje, turėti įtakos vietovės patrauklumui, populiacijos tvariam augimui, verslo investicijoms ir jų išlaikymui.

2. Netiesioginis multiplikatyvinis efektas:

• Verslo augimas/nuosmukis, atsiradęs dėl GVPC tiesiogiai paveiktų įmonių ir jų tiekėjų pajamų pokyčių.

3. Paskatintas multiplikatyvinis efektas:

• GVPC tolesni išlaidų maistui, aprangai, būstui, kitoms vartojimo prekėms ir paslaugoms, pokyčiai, sąlygojami tiesiogiai ir netiesiogiai paveiktų įmonių darbuotojų skaičiaus ir darbo užmokesčio pasikeitimo pasekmių.

4. Dinaminis multiplikatyvinis efektas:

• GVPC platesnio pobūdžio ilgalaikės perspektyvos pokyčių pasekmės, atsispindinčios gyventojų ir verslo lokacijos pasirinkimo elgesio modeliuose, žemės naudojime ir šio naudojimo sąlygojamuose žemės vertės pokyčiuose, kurie taip pat gali paveikti vyriausybės išlaidas ir pajamas. Tai paveikia tolimesnį verslo augimą/nuosmukį vietinėje ekonomikoje.

Disertacijos autorė apibendrina multiplikatyvinių GVPC efektų vertinimą vizualizuodama tiesioginių, netiesioginių, paskatintų ir dinaminių efektų pagrindinius teiginius. Pagrindiniai tiesioginiai GVPC multiplikatyviniai efektai CRE šalyse siejami su tuo, kad: GVPC sektorius investicijų politikos formuotojų įvardijamas kaip prioritetinis visose CRE šalyse, o investicijų plėtros agentūros savo veiksmais siekia pritraukti kuo daugiau tokių investicijų į CRE šalis; GVPC daro poveikį kitų ekonominių subjektų verslo sprendimams ir viešosios politikos kryptims; GVPC sukuriamos darbo vietos sukuria ir kitas ekonomines GVPC naudas; GVPC sąlygoja išlaidų pokyčius kitose vertės grandinėse ir taip paveikia bendrą vietovės konkurencingumą. Pagrindiniai netiesioginiai GVPC multiplikatyviniai efektai CRE šalyse susiję su tuo, kad GVPC paveikia kitus verslus, kurie yra kuriami ir išplečiami GVPC poreikių patenkinimui. Pagrindiniai paskatinti GVPC multiplikatyviniai efektai CRE šalyse yra susiję su tuo, kad GVPC išsaukia ilgalaikę verslo plėtrą paveikdami paskesnius vartojimo pokyčius, sąlygojamus tiesiogiai ir netiesiogiai paveikiamų verslų didėjančiu užimtumu ir pajamomis. Pagrindiniai dinaminiai GVPC multiplikatyviniai efektai CRE šalyse susiję su platesnio pobūdžio ilgalaikės perspektyvos pokyčių pasekmėmis.

Trečia, _atliekama SEB Global Services Vilnius verslo atvejo analizė siekiant_

Dėl jautrių, konfidencialių, neskelbtinų ir viešai neprieinamų ir nesistemintų GVPC statistinių duomenų apribojimo, šios disertacijos autorė pabrėžia, kad yra ribota galimybė atlikti išsamų visų ar bent reikšmingos dalies GVPC poveikio multiplikatyvinio efekto vertinimą pasirinktose CRE šalyse. Dėl šios priežasties, siekdama įvertinti GVPC multiplikatyvinį makroekonominių išdavų poveikį Lietuvos pavyzdžiu, disertacijos autorė, kuri taip pat turi darbo patirties viename iš didžiausių GVPC Lietuvoje, gretina prieš tai disertacijoje išanalizuotus bendrojo (tiesioginio, netiesioginio, paskatinto ir dinaminio) GVPC multiplikatyvinio efekto CRE šalyse duomenis su asmeninėmis žiniomis ir patirtimi, įgyta GVPC, viešai prieinamais GVPC duomenimis ir su SEB Global Services Vilnius vadovės bei Technopolis Vilnius paslaugų vadovės apklausomis. Kadangi Technopolis Ozas yra SEB Global Services Vilnius biuro nuomos (taip pat susitikimų salių, konferencijų salių ir kt.) paslaugų tiekėjas ir netiesioginis verslas, kuris tikėtina SEB Global Services Vilnius veiklos Lietuvoje yra daugiausiai paveikiamas, disertacijos autorė papildo tyrimą Technopolis Ozas atstovės – Technopolis Vilnius paslaugų vadovės – apklausa.

Lietuvos nacionalin**ė investicijų plėtros agentūra Investuok Lietuvoje** pozicionuoja paslaugų centrus kaip vieną iš prioritetinių sektorių Lietuvoje. **Šiame kontekste Investuok Lietuvoje** taip pat pateikia savo įžvalgas dėl SEB Global Services Vilnius atsiradimo ir plėtros Lietuvoje ir pabrėžia, kad ši įmonė prisidėjo prie sėkmės istorijų Lietuvos GVPC sektoriuje. Investuok Lietuvoje (2021) teigimu, SEB Global Services Vilnius – itin svarbus GVPC teikiant verslo palaikymo paslaugas (operacijų, IT, personalo ir finansų) SEB grupei – 20 šalių veikiantiems filialams ir padaliniams. 2008 m. įkurtas centras pradėjo veiklą turėdamas 67 darbuotojus. 2020 metais šiame GVPC dirbo 1.200 aukštos kvalifikacijos daugiakalbių motyvuotų darbuotojų komanda (Rūtos Jasiulionienės apklausa, 2020). Patogi geografinė padėtis, gabių specialistų gausa, išvystyta infrastruktūra ir galimybės toliau augti kartu su SEB Lietuvoje jau vykdoma veikla tapo pagrindinėmis priežastimis, kodėl SEB pasirinko Vilnių. SEB Global Services Vilnius centre dirba pradedantieji ir jau patyrę specialistai. Centras nuolat ieško didelių siekių turinčių komandos narių (Investuok Lietuvoje, 2021).

Disertacijos autorė atlieka SEB Global Services Vilnius verslo atvejo analizę kaip šio GVPC paveikiamų septynių makroekonominių rodiklių grupių (darbo rinkos, išlaidų ir vartojimo, migracijos, gyvenimo kokybės, tarpsektorinės plėtros, regionų plėtros ir su BVP susijusių rodiklių) tiesioginio, netiesioginio, paskatinto ir dinaminio multiplikatyvinio poveikio efekto pasireiškimo pavyzdį Lietuvoje. Šio verslo atvejo analizė remiasi SEB Global Services Vilnius sąlygojamų multiplikatyvini**ų efektų**

suskirstymu į dvi grupes: skaitinę ir ne skaitinę multiplikatyvinio efekto pasireiš**kimo išraiška**s.

Skaitinė SEB Global Services Vilnius sąlygojamo multiplikatyvinio efekto pasireiškimo išraiška apima procentinę/kitą išraišką, užimtumo išraišką ir piniginę (EUR) išraišką.

Procentin**ė/kita išraiška apima skaitinę** išraišką, kuri parodo procentinį/kitą bendrą poveikį makroekonominiams rodikliams, apskaičiuotą remiantis kiekybiniais metodais, bet neparodo tikslios šio poveikio užimtumo ar piniginės (EUR) **išraiškos. Tokia procentinė/kita išraiška parodo, kad**: SEB Global Services Vilnius įdarbina beveik 0,1 % visų Lietuvoje įdarbintų 15-64 metų piliečių; SEB Global Services Vilnius darbuotojų papildomos metinės disponuojamos pajamos, atsiradusios dėl didesnių nei vidutinių šalies atlyginimų, galėtų padengti 4,87 % visų metinių Lietuvos namų ūkio vartojimo išlaidų; 5 % įdarbintųjų SEB Global Services Vilnius – reemigravę Lietuvos pilie**čiai;** SEB Global Services Vilnius užima apytiksliai 14.440,00 kv. m biuro patalpų ir kiekvieno kv. m šių patalpų išlaikymas naudingas Lietuvos ekonomikai.

Užimtumo išraiška parodo kiek papildomų darbo vietų sukuriama dėl SEB Global Services Vilnius veiklos. Disertacijos autorė pabrėžia, kad faktinis papildomai sukuriamų darbo vietų skaičius turėtų būti didesnis nei autorės apskaičiuotas, nes disertacijoje pateikiamame vertinime atsižvelgiama tik į duomenis, kurie buvo prieinami šios disertacijos autorei ir trūksta informacijos apie visas darbo vietas, sukurtas dėl analizuojamų paslaugų teikėjų, kurie aptarnauja SEB Global Services Vilnius, plėtros. Taip pat pabrėžiama, kad 60 SEB Global Services Vilnius įdarbintų reemigravusių Lietuvos piliečių nebuvo įtraukti į bendrą užimtumo išraišką, bet atkreiptinas dėmesys, kad Lietuvoje tikėtina būtų 60 piliečių mažiau jeigu SEB Global Services Vilnius veiklos Lietuvoje nevykdytų.

Piniginė (EUR) išraiška parodo naudą Lietuvos ekonomikai, gaunamą dėl sumokamų gyventojų pajamų mokesčių, socialinių įmokų, antrinių paslaugų tiekėjų gaunamų pajamų. Su darbo santykiais susiję mokesčiai sumokėti 60 reemigravusiųjų Lietuvos piliečių įdarbintų SEB Global Services Vilnius nebuvo taip pat nebuvo įtraukti į bendrą piniginę (EUR) išraišką, bet norima pabrėžti, kad jeigu SEB Global Services Vilnius nevykdytų veiklos Lietuvoje, tikėtina per mėnesį ši šalis prarastų 133.963,92 EUR su darbo santykiais susijusių mokesčių ir papildomų disponuojamų pajamų.

Ne skaitinė SEB Global Services Vilnius sąlygojamo multiplikatyvinio efekto pasireiškimo išraiška parodo, kad svarbu **įvertinti ir** neapčiuopiamą, sunkiai išmatuojamą, bet pasireiškiantį makroekonominių rodiklių multiplikatyvinį efektą (gyvenimo kokybės rodikliai, vietovės specializacijos rodikliai **sąlygojantis regionų plėtrą** ir kt.)

Nepaisant to, kad trūksta kiekybinių duomenų apie papildomas SEB Global

Services Vilnius darbuotojų gaunamas naudas, autorė daro prielaidą, kad jos neišvengiamai turėtų būti gretinamos su finansinėmis naudomis, tokiomis kaip aukštesnis nei vidutinis šalies atlyginimas, **ženkliai prisidedančios prie SEB Global Services Vilnius** darbuotojų ir jų šeimos narių gyvenimo kokybės rodiklių gerinimo.

Dar vienas ne skaitinės išraiškos rodiklis, sąlygojantis regionų plėtros aspektus – vietovės specializacijos įvertis (GVPC pasiskirstymas nagrinėjamose vietovėse). Šis rodiklis, įvertinantis vienos analizuojamos vietovės GVPC užimtumo rodiklius ir visų analizuojamų vietovių užimtumo rodiklius (šiuo atveju Vilnius, Kaunas ir Klaipėda), parodo, kad SEB Global Services Vilnius yra įsikūręs aukštos GVPC specializacijos vietovėje ir prisideda prie Vilniaus miesto tolesnės specializacijos plėtros GVPC sektoriuje. Vietovės specializacijos įverčio svarba susijusi su tuo, kad didėjant GVPC skaičiui Vilniuje, konkurencija šio miesto GVPC sektoriuje didėja, tampa paprasčiau į Vilnių pritraukti daugiau kitų GVPC ir stimuliuojami atlyginimų, darbo sąlygų, darbuotojams siūlomų naudų, darbo rinkos restruktūrizavimo ir kiti ekonominiai šios vietovės pokyčiai. Didžiausias Lietuvos GVPC sektoriaus specializacijos įvertis šiuo metu yra sostinėje – Vilniuje. Vis dėl to, Lenkijos pavyzdys rodo, kad kai kurie kiti ne sostinės miestai aplenkia sostinę ir šiose vietovėje GVPC pasiskirstymas yra didesnis. Dėl šios priežasties, autorės nuomone, vietovės specializacijos įvertis parodo, kad kai kuriose šalyse regionų potencialas pritraukti daugiau GVPC yra didesnis nei sostinių.

Nepaisant to, kad su BVP susiję rodikliai dažniausiai yra skaitinės išraiškos, autorė priskyrė juos prie ne skaitinės išraiškos rodiklių dėl to, kad remiantis disertacijoje atlikta analize ir ekspertų apklausa, anksčiau disertacijoje minėtos svarbiausios BVP komponentės – GVPC užimtumas ir jo komponentės kaip svarbiausia BVP sudedamoji dalis, išlaidos/vartojimas ir tarpsektorinė plėtra kaip paskesnės, užimtumo GVPC paskatintos, BVP sudedamosios dalys – geriau atspindi GVPC poveikį makroekonominiams rodikliams CRE šalyse.

Apibendrindama tai, kas išdėstyta, disertacijos autorė prieina išvadą, kad pagal SEB Global Services Vilnius vadovės ir Technopolis Vilnius vadovės atskleistus duomenis, 1.200 SEB Global Services Vilnius įdarbintųjų ekonomikoje sukuria mažiausiai 36 papildomas darbo vietas antrinių paslaugų sektoriuose, prisideda prie Lietuvos ekonomikos mokamais mažiausiai 2.786.049,68 EUR mėnesiniais su darbo santykiais susijusiais mokesčiais ir antrinių paslaugų tiekėjų pajamomis. Taip pat, 1.200 SEB Global Services Vilnius darbuotojų papildomos metinės disponuojamos pajamos, atsiradusios dėl didesnių nei vidutinių šalies atlyginimų, galėtų padengti 4,87 % visų metinių Lietuvos namų ūkio vartojimo išlaidų. Be to, SEB Global Services Vilnius prisideda prie protų nutekėjimo prevencijos ir didesnių reemigracijos rodiklių, kadangi 5 % čia įdarbintųjų yra reemigravę Lietuvos piliečiai. Be to, 1.200 SEB Global Services

Vilnius įdarbintųjų prisideda prie komercinio nekilnojamojo turto ir kitų susijusių sektorių plėtros, užimdami apytiksliai 14.400 kv. m biuro patalpų. SEB Global Services Vilnius prisideda ir prie gyvenimo kokybės rodiklių gerinimo per neapčiuopiamas, sunkiai išmatuojamas nefinansines papildomas darbuotojų naudas. 1.200 SEB Global Services Vilnius įdarbintųjų prisideda ir prie Vilniaus miesto vietovės specializacijos įverčio gerinimo. Disertacijos autorė pabrėžia, kad faktinis multiplikatyvinio efekto poveikis turėtų būti didesnis nei autorės įvertintas dėl identifikuotų, bet dėl kiekybinių duomenų trūkumo neįvertintų antrinių paslaugų tiekėjų pajamų, atsiradusių dėl SEB Global Services Vilnius veiklos vykdymo Lietuvoje.

Pagrindinė SEB Global Services Vilnius atlikto tyrimo išvada – šis GVPC rodo stipraus poveikio makroekonominiams rodikliams multiplikatyvinio efekto pavyzdį Lietuvoje. Ypatingai pabrėžiamas netiesioginis multiplikatyvinis efektas dėl SEB Global Services Vilnius stimuliuojamos tarpsektorinės plėtros. Tyrimas atskleidė platų GVPC verslo modelio stimuliuojamo ekonominio poveikio pasireiškimo spektrą ir paneigia nuomonę, kad GVPC ekonominis poveikis gali būti prilygintas vidutiniam bet kurio tipo TUI poveikiui.

Atliktos GVPC verslo atvejo analizės SEB Global Services Vilnius pavyzdžiu rezultatai parodo, kad GVPC poveikis makroekonominiams rodikliams tikėtina yra dar didesnis nei autorės įvertintas, o šio poveikio vertinimas apima ne tik standartinius mikroekonominius ar makroekonominius rodiklius kaip BVP augimas ar kt., bet ir rečiau tiriamus, neapčiuopiamus, sunkiai išmatuojamus makroekonominius rodiklius – darbo rinkos, išlaidų ir vartojimo, migracijos, gyvenimo kokybės, tarpsektorinės plėtros, regionų plėtros rodiklius.

Atsižvelgiant į tai, kad buvo analizuojamas tik vienas Lietuvoje veikiantis GVPC, kurio duomenys disertacijos autorei buvo prieinami, o Investuok Lietuvoje 2019 m. duomenimis šalyje veikė 81 GVPC įdarbinantis 19.300 darbuotojų, preziumuojama, kad panašaus poveikio makroekonominiams rodikliams galima būtų tikėtis ir iš kitų Lietuvoje veikiančių GVPC. Dėl to, autorės taikomas SEB Global Services Vilnius multiplikatyvinio efekto vertinimo modelis galėtų būti taikomas ir kituose Lietuvoje veikiančiuose GVPC. Jeigu būtų taikoma analogiška užimtumo išraiška (1 GVPC darbuotojas sukuria 0,03 papildomų darbo vietų) ir piniginė (EUR) išraiška (1 GVPC darbuotojas generuoja 2.321,71 EUR), taip pat analogiška ne skaitinė išraiška kitiems Lietuvoje veikiantiems GVPC, galima būtų teigti, kad 19.300 GVPC sektoriuje įdarbintųjų Lietuvoje sukuria mažiausiai 579 papildomas darbo vietas antrinėje paslaugų rinkoje, prisideda prie Lietuvos ekonomikos mažiausiai 44.808.965,75 EUR mokamais mėnesiniais su darbo santykiais susijusiais mokesčiais ir generuojamomis antrinių paslaugų tiekėjų pajamomis. Tokiu atveju ir tokios ekonominės naudos kaip

papildomos disponuojamos pajamos dėl didesnių nei vidutinių šalies atlyginimų, pagerinti reemigracijos rodikliai, papildomos naudos, gerinančios gyvenimo kokybę ir kt. būtų atitinkamai didesnės.

Dėl patikimų statistinių ir kitų prieinamų duomenų apie kitus GVPC visose tiriamose CRE šalyse trūkumo, dėl šių GVPC dydžių skirtumų, galimų geografinių skirtumų, galimų kiekvieno GVPC makroekonominių rodiklių poveikio multiplikatyvinio efekto skirtumų ir kitų specifinių skirtumų, šios disertacijos autorė negali daryti analogiškų apibendrinimų apie kitus GVPC visose tiriamose CRE šalyse.

Ketvirta, tyrimas papildomas _CRE šalių investicijų plėtros agentūrų ekspertų apklausa._

Prieinamų, išsamių statistinių duomenų trūkumas GVPC tema CRE šalyse buvo paskatino disertacijos autorę atlikti CRE šalių investicijų plėtros agentūrų ekspertų apklausą. Pagrindinis autorės įvardijamas ekspertų atrankos kriterijus – patirtis GVPC srityje ir makroekonominių rodiklių analizėje. Disertacijos autorė susisiekė su ekspertais iš Čekijos (Czech Invest), Vengrijos (Vengrijos investicijų plėtros agentūra HIPA), Lietuvos (Investuok Lietuvoje), Lenkijos (Lenkijos investicijų ir prekybos agentūra PAIH), Rumunijos (Invest Romania) ir Slovakijos (Slovakijos investicijų ir prekybos plėtros agentūra SARIO, kuri peradresavo užklausą AmCham Slovakia – prekybos ir verslo bendruomenei ir verslo paslaugų centrų forumui) ir paprašė užpildyti ekspertų apklausos anketą. Vis dėlto, užpildytas ekspertų apklausos anketas pavyko gauti tik iš ekspertų iš Lietuvos (Laisvis Makulis, apklausos pildymo metu Investuok Lietuvoje paslaugų komandos vadovas, šiuo metu Investuok Lietuvoje viceprezidentas), Lenkijos (vardas nebus atskleistas respondentės prašymu) ir Slovakijos (Peter Rusiňák, AmCham, politikos pareigūnas ir verslo paslaugų centrų forumo (BSCF) koordinatorius). Ekspertai iš Vengrijos atsisakė prisidėti prie tyrimo, o iš Čekijos ir Rumunijos nepavyko gauti atsakymo. Bendravimo su CRE šalių ekspertais elektroniniais laiškais metu buvo pastebėta, kad prisidėti prie tyrimo ekspertams trukdė tam tikros biurokratinės procedūros, baimė atskleisti konfidencialią informaciją apie šalį arba patirties trūkumas santykinai naujo GVPC reiškinio ištirtume.

Disertacijos autorės išskirti ekspertų apklausos tikslai: sužinoti apie papildomus statistinių duomenų šaltinius ir patikrinti ar validūs yra disertacijoje naudojami šaltiniai; atskleisti ekspertų įžvalgas apie GVPC rinkos aktualijas, jos plėtros lygį, pagrindines tendencijas CRE šalyse ir identifikuoti su GVPC susijusias organizacijas, verslo forumus, iniciatyvas, švietimo įstaigas ir kt., kurios yra atsakingos už tokius klausimus kaip GVPC atsiradimas, pritraukimas į šalį, informacijos apie GVPC sklaida ir pan.; siekiant patvirtinti disertacijos autorės išskirtų septynių makroekonominių rodiklių grupių validumą ir pritaikomumą GVPC kontekste, pristatyti ekspertams šias makroekonominių

rodiklių grupes, kurioms poveikį galėtų daryti GVPC ir paprašyti ekspertų suranguoti juos pagal svarbą bei pakomentuoti savo pasirinkimus; atsakyti į specifinius konkrečių šalių klausimus, susijusius su abejotinu GVPC poveikiu makroekonominiams rodikliams arba, apie kuriuos autorei nepavyko gauti pakankamai duomenų disertacijoje naudojamuose literatūros šaltiniuose; siekiant patvirtinti disertacijos temos aktualumą ir praktinę reikšmę, išklausyti ekspertų nuomonę šiuo klausimu; siekiant populiarinti disertacijos tyrimo lauką, sužinoti ar ekspertai norėtų gauti informaciją apie disertaciją kai bus paruošta galutinė jos versija; paprašyti, kad ekspertai pateiktų papildomas įžvalgas, rekomendacijos ar naudingą informaciją/nuorodas, į kurias neatsižvelgė šios disertacijos autorė; sužinoti kokie ekspertų asmeniniai ir profesiniai duomenys nėra konfidencialūs ir gali būti atskleisti disertacijoje.

Disertacijoje pristatomi pagrindiniai ekspertų apklausos rezultatai. Apklausti ekspertai akcentuoja oficialių duomenų ir šalies mastu atliekamų analizių GVPC sektoriaus poveikio makroekonominiams rodikliams trūkumą bei patvirtina disertacijos tyrimo aktualumą.

Penkta, buvo atlikta _panelinių duomenų analizė_ siekiant įvertinti GVPC poveikį pasirinktiems makroekonominiams rodikliams, atsižvelgiant į šių rodiklių statistinių duomenų prieinamumą.

Galiausiai, _apibendrinami disertacijos tyrimo rezultatai ir pateikiamos tyrimo išvados bei rekomendacijos su detaliu jų įgyvendinimo paaiškinimu._

Pagrindinės disertacijos išvados ir pateikiamos rekomendacijos.

Siekiant disertacijoje iškelto tikslo ir sprendžiant suformuluotus uždavinius, gauti atliktų teorinių ir empirinių tyrimų rezultatai leidžia formuoti tokias išvadas.

**Mokslinės literatūros analizė** parodė, kad pasaulio ekonomikos struktūroje pastebimi pokyčiai yra nukreipti servitizacijos link. Augantis paslaugų sektoriaus lyginamasis svoris pasaulio ekonomikoje nulemia tokias ekonomines išdavas kaip paslaugų sektoriaus investicijų liberalizavimas, skatinimas ir lengvatos, aglomeracijos ekonomika ir masto ekonomija bei ekonominės geografijos pokyčiai. Dėl užsienio investuotojų reakcijos į minėtus paslaugų sektoriaus pokyčius toks paslaugų sektoriaus TUI segmentas kaip GVPC tampa vis aktualesnis.

Disertacijoje išanalizuota **GVPC teorinė koncepcija** patvirtina šio reiškinio naujumą bei nuolatinę ir greitą jo evoliuciją. Viena vertus, besikeičiančių GVPC sąvokų įvairovė gali būti naudinga tiriant šio reiškinio ekonominį pobūdį. Kita vertus, GVPC sąvokų nepastovumas iššaukia tam tikras mokslines diskusijas dėl šio reiškinio suvokimo, dėl ko gali atsirasti su GVPC susijusių tyrimų apribojimų. Remdamasi skirtingais požiūriais į GVPC reiškinį ir jo sukuriamą vertę, disertacijos autorė siūlo apibendrintą globalių verslo paslaugų centro apibrėžimą. Globalių verslo paslaugų cen-

tras – tai globali, vertę kurianti organizacija, kuri naudojasi globalizacijos, skaitmeniniais įgalinimais kaip pagrindiniais veiksniais kuriant vertę pagal bendrą paslaugų lygio susitarimą (angl. *Service Level Agreement*) ir kurios charakteristikos apima šias sąlygas: daugiafunkciškumas, keli regionai, kelios lokacijos, daugialypiškumas.

Didėjančios GVPC paslaugų apimties/taikymo srities ir ekonominės vertės analizė atskleidė tokius aspektus: nuolat augantis GVPC teikiamų paslaugų portfelis ir vis sudėtingesnių verslo procesų atlikimas. Taigi, aiškiai matomas GVPC perėjimas nuo paprastos masto ekonomijos per standartizavimą ir išteklių perskirstymą prie orientuoto į klientą, novatoriško, nuolat tobulėjančio, į efektyvumą orientuoto verslo modelio; didėjanti GVPC paslaugų apimtis/taikymo sritis yra gretinama su multiplikatyvine makroekonomine verte, kuri daugiausiai pasireiškia priimančioje šalyje, kurioje GVPC įsikūrę.

Šioje disertacijoje atliktas GVPC (kaip TUI segmento) ištirtumo lygio ekonomikos mokslo kontekste vertinimas atskleidė, kad GVPC reiškinys nėra plačiai ištirtas dabartiniame GVPC evoliucijos etape. Be to, autorė pastebi tyrėjų koncentravimąsi į bendresnius TUI tyrimus, neišskiriant paslaugų sektoriaus TUI ir jų segmentų tokių kaip GVPC. Taigi, paslaugų sektoriaus segmentas – GVPC – yra naujas reiškinys moksro bendruomenėje, iššaukiantis poreikį įvertinti jo ištirtumo lygį ekonomikos mokslo kontekste. Pastebimas tyrimų, gretinančių GVPC su makroekonominiais rodikliais, trūkumas. Retai aptinkami GVPC makroekonominės analizės tyrimai apima kai kuriuos aprašomuosius duomenis, tačiau empiriniai tyrimai yra riboti, o dažniausiai jie nėra atliekami dėl to, kad trūksta statistinių duomenų apie santykinai naują GVPC reiškinį. Taip pat autorė pastebi, kad esami GVPC lygmens tyrimai apima vieno ar kelių atskirų rodiklių analizę, o ypatingai retu atveju atliekamos išsamios įvairių makroekonominių rodiklių analizės, pabrėžiančios multiplikatyvinio efekto reikšmę. Pažymima, kad disertacijos autorė vertina GVPC poveikio makroekonominiams rodikliams multiplikatyvinį efektą kaip išskirtinai svarbų ir nuolat disertacijoje akcentuojamą aspektą.

Disertacijoje atlikta *GVPC ir makroekonominių rodiklių tarpusavio ryšio, išreikšto multiplikatyviniu efektu, vertinimo analizė* atskleidė, kad siekiant įvertinti GVPC multiplikatyvinį efektą, į vertinimą reikėtų įtraukti įvairius tarpusavio sąsajų turinčius makroekonominius rodiklius. Vadovaujantis Ekonominės plėtros tyrimo grupės sukurta ir disertacijoje naudojama metodologija ir siekiant išanalizuoti teigiamą ekonominį poveikį skirtingose vertės grandinėse, GVPC sąlygojamas makroekonominių išdavų multiplikatyvinis efektas gali būti tiesioginis, netiesioginis, paskatintas ir dinaminis. Disertacijoje buvo atliktas teigiamo ekonominio poveikio įvairiose vertės grandinėse vertinimas vadovaujantis aukščiau minėta metodologija ir multiplikatyvinio efekto pasirei**škimo SEB Global Services Vilnius pavyzdžiu Lietuvoje.**

Tyrimuose naudojamų GVPC makroekonominėms išdavoms išmatuoti tyrimo metodų analizė atskleidė, kad globalių servitizacijos procesų kontekste, matomas didesnis tyrėjų susidomėjimas paslaugų sektoriaus ekonominėmis išdavomis ir jų išmatuojamumu. Vis dėlto, pastebima *GVPC makroekonominių išdavų išmatuojamumo įgyvendinimo problema*. Nuolat atsirandantys nauji verslo modeliai, jų evoliucijos tempas ir faktinis makroekonominis poveikis yra didesni **už GVPC ekonominio reiškinio makroekonominio poveikio vertinimo ištirtumo lygio didėjimo tempą.** GVPC reiškinio naujumas, statistinių duomenų ir mokslinių tyrimų, gretinančių GVPC ir makroekonominius rodiklius, trūkumas, ir retai atliekamų tyrimų ribotumai tokie kaip jų aprašomasis pobūdis, nedažni empiriniai tyrimai, paskatino disertacijos autorę ieškoti **šioms sąlygoms pritaikytų matavimo sprendimų ir atlikti aprašomąjį, kognityvinį GVPC reiškinio tyrimą, taip pat tyrime naudoti įvairių** kokybinių bei prieinamų kiekybinių tyrimų metodų kombinaciją. **Šie tyrimo metodai gali būti papildomi kitais** išsamesniais kiekybiniais tyrimo metodais ateityje, kai bus prieinama daugiau statistinių duomenų GVPC tema.

Makroekonominių rodiklių ir GVPC reiškinio gretinimas atliktas disertacijos teorinėje dalyje ir disertacijos autorės profesinė patirtis viename iš didžiausių GVPC Lietuvoje paskatino į GVPC poveikio makroekonominiams rodikliams vertinimo modelį CRE šalyse įtraukti šiuos makroekonominius rodiklius: darbo rinkos rodiklius, išlaidų ir vartojimo rodiklius, migracijos rodiklius, gyvenimo kokybės rodiklius, tarpsektorinės plėtros rodiklius, regionų plėtros rodiklius ir su BVP susijusius rodiklius. Vis dėlto, ekspertų apklausos duomenimis, svarbiausios makroekonominių rodiklių grupės yra šios: darbo rinkos, išlaidų ir vartojimo, gyvenimo kokybės ir tarpsektorinės plėtros. **Šių makroekonominių rodiklių didžiausią svarbą patvirtinimo ir disertacijos tyrimo rezultatai.**

Analizė atlikta teorinėje ir metodologinėje disertacijos dalyse atskleidė šiuos tyrimo apribojimus: ribotas GVPC tyrimų skaičius, literatūros šaltinių fragmentacija, GVPC sąvokų įvairovė nulemta šio reiškinio evoliucijos tąsos, prieinamos ir išsamios statistikos šia tema trūkumas, prieigos prie neskelbtinų GVPC duomenų trūkumas, antrinių duomenų analizės dominavimas, vangus ekspertų įsitraukimas į tyrimo atlikimą, pasirinktų šešių CRE šalių įtraukimas į tyrimą. Pabrėžiama, kad didžioji dalis tyrimo apribojimų susijusi su GVPC reiškinio naujumu, kas, viena vertus, kelia daug klausimų, apsunkina tyrimo atlikimą ir priverčia rinktis daugiausiai kokybinius tyrimo metodus, kita vertus, patvirtina tyrimų GVPC tema poreikį. Dėl šių priežasčių, autorė apibendrina, kad ši disertacija **ženkliai prisideda** prie GVPC reiškinio ir jo makroekonominio poveikio mokslinio ištirtumo lygio gerinimo.

Pagrindiniai tyrimo rezultatai, GVPC poveikis darbo rinkos rodikliams:

tyrimo duomenimis, vidutinis GVPC darbuotojas prie su darbo santykiais susijusių mokesčių ir socialinių įmokų mokėjimo gali prisidėti net 5 kartus daugiau nei vidutinis kitoje įmonėje dirbantysis CRE šalyse. Dėl šios priežasties GVPC atlieka svarbų darbo rinkos rodiklių katalizatoriaus vaidmenį. GVPC analizuojamose CRE šalyse užtikrina ne tik stabilų ilgalaikį užimtumo augimo tempą, bet ir sąlygoja tokias su užimtumu susijusias ekonomines pasekmes kaip darbo rinkos restruktūrizavimas, jaunimo ir socialinių mokslų absolventų įsidarbinimo galimybės, ženkliai didesni GVPC siūlomi atlyginimai, palyginus su vidutiniu šalies atlyginimu, reikšmingas indėlis į socialinių ir kitų su darbu susijusių įmokų biudžetą šalies mastu ir kt. Pasitelkiant panelinių duomenų analizės metodą taip pat papildomai buvo įvertintas ir patvirtintas teigiamas GVPC poveikis šiems darbo rinkos rodikliams: nedarbo lygis (visos populiacijos procentinė išraiška), jaunimo nedarbo lygis (15-24 m. asmenų, visos populiacijos procentinė išraiška), socialinio draudimo fondams sumokėti mokesčiai ir socialinės įmokos, mln. EUR. GVPC poveikis metiniam grynajam uždarbiui (vienas asmuo be vaikų uždirbanti 100% vidutinio uždarbio) nebuvo patvirtintas.

Pagrindiniai tyrimo rezultatai, GVPC poveikis išlaidų ir vartojimo rodikliams: užimtumas GVPC ir juose mokami didesni nei vidutiniai šalies atlyginimai įgalina disponuojamų pajamų, skirtų išlaidoms, vartojimui, investavimui ar taupymui, struktūros pokyčius. Šie veiksniai lemia restruktūrizuotą vartojimą CRE šalyse – papildomos GVPC darbuotojų pajamos yra išleidžiamos ar sutaupomos. Taip pat didesnės nei vidutinės GVPC darbuotojų pajamos didina GVPC darbuotojų ir jų šeimos narių, jaunimo (kadangi GVPC darbuotojų amžiaus vidurkis CRE šalyse svyruoja nuo 30 iki 35 m.), antrinės, tretinėje ir paskesnių vertės grandinių perkamąją galią (multiplikatyvinis efektas). Pagal scenarijų „daugiau išleidžiama" paveikiami namų ūkių vartojimo išlaidų rodikliai, investicijų rodikliai ir tarpsektorinės plėtros rodikliai. Tokiu atveju ekonomikoje cirkuliuojant papildomoms disponuojamoms pajamoms didėja ir GVPC darbuotojų bei jų šeimos narių gyvenimo kokybė. Tokiu atveju įsijungia ir multiplikatyvinio efekto mechanizmas – įdarbintųjų skaičiaus ir jų atlyginimų didėjimas generuoja papildomas pajamas dėl išleistų papildomų pajamų, skatina įdarbintųjų skaičiaus augimą kituose susijusiuose sektoriuose, tarpsektorinę plėtrą. Pagal scenarijų „daugiau sutaupoma", didėjant santaupoms, atsiradusioms dėl GVPC mokamų didesnių nei vidutinių šalies atlyginimų, didėja šalių taupymo norma ir pajėgumas geriau susidoroti su cikliniais ekonominiais nuosmukiais (trumpalaikis poveikis) bei ekonomikos savifinansavimo pajėgumas (ilgalaikis poveikis). Taip pat, disertacijos autorės paskaičiavimais, prognozuojamos papildomos metinės disponuojamos pajamos dėl 2020 m. didesnio nei vidutinio šalies darbo užmokesčio GVPC galėtų padengti nuo 0,42 % iki 2,18 % visų 2019 m. namų ūkių metinių vartojimo išlaidų, ir nuo 4,36

% iki 217,15 % 2019 m. pasirinktų išlaidų (maisto ir nealkoholinių gėrimų, elektros energijos, dujų ir kito kuro, poilsio ir kultūros, **švietimo)**. Panelinių duomenų analizė taip pat patvirtino teigiamą GVPC poveikį šiam išlaidų/vartojimo rodikliui: namų ūkių galutinio vartojimo išlaidos, dabartinės kainos, mln. EUR.

Pagrindiniai tyrimo rezultatai, GVPC poveikis <u>migracijos rodikliams</u>: migracijos rodiklių analizė pagal prieinamus CRE šalių duomenis atskleidė, kad 2012-2019 m. nuo ~1 % iki ~124 % emigravusiųjų CRE šalių piliečių reemigravo. Taip pat, SEB Global Services Vilnius vadovės apklausos duomenimis, šiame GVPC 5 % įdarbintųjų – reemigravę Lietuvos piliečiai. Nepaisant to, kad remiantis aukštais reemigracijos rodikliais CRE šalyse ir Lietuvoje veikiančio SEB Global Services Vilnius verslo atvejo analize galima būtų daryti prielaidą, kad GVPC įsikūrusių CRE šalyse sukuriamos darbo vietos gali sąlygoti gerėjančius reemigracijos rodiklius, vis dėlto, susistemintos migracijos statistikos ir protų nutekėjimo statistikos trūkumas apsunkina tyrimą ir ši prielaida negali būti nei patvirtinta, nei paneigta. Apklaustų Lietuvos, Lenkijos ir Slovakijos ekspertų nuomone, sudėtinga gretinti migracijos, protų nutek**ė**jimo rodiklius ir GVPC dėl tyrimų/statistikos, apimančių informaciją apie reemigravusių piliečių įdarbinimą, trūkumo. GVPC poveikis reemigracijos rodikliui nebuvo patvirtintas, o panelinės duomenų analizės tyrimas parodė, kad GVPC reemigracijos rodiklį neženkliai, bet paveikia neigiamai. Tokios prieštaringos tyrimo išvados galėtų būti paaiškintos statistinių duomenų trūkumu.

Pagrindiniai tyrimo rezultatai, GVPC poveikis <u>gyvenimo kokybės rodikliams</u>: GVPC CRE šalyse išryškina makroekonomines naudas įskaitant, bet neapsiribojant, šiuos gyvenimo kokybės rodiklius: pajamos ir orios GVPC siūlomos darbo vietos/sąlygos, asmeninio tobulėjimo ir mokymosi tarptautinėje aplinkoje galimybės, patrauklūs motyvaciniai paketai, į sveikatą/šeimą/pagarbą orientuota kultūra ir vertybės, orus darbo užmokestis, įvairovės nediskriminavimas ir socialinė įtrauktis, GVPC pabrėžiamas tvarumas ir kt. Autorė pastebėjo, kad paprastai analizuodami makroekonomines GVPC išdavas, kiti mokslinių darbų autoriai gyvenimo kokybės rodiklių neįvertina. Ekspertų apklausos duomenimis ir asmenine šios disertacijos autorės nuomone, gyvenimo kokybės gerinimas – svarbi ekonominė nauda, kuri yra apčiuopiama, sunkiai išmatuojama, bet akivaizdi. Standartinių ekonominių išdavų matavimo metodų papildymo gyvenimo kokybės rodiklių vertinimu poreikis akcentuojamas šioje disertacijoje. Dėl prieinamų statistinių duomenų stokos gyvenimo kokybės rodikliai nebuvo įtraukti į panelinių duomenų analizę.

Pagrindiniai tyrimo rezultatai, GVPC poveikis <u>tarpsektorinės plėtros rodikliams</u>: GVPC plėtros mastas ir GVPC verslo modelio specifika sąlygoja kitų antrinės rinkos dalyvių verslo plėtrą, o tai vertinama kaip tarpsektorinė plėtra. Šiuo

metu prieinamos informacijos apie visus GVPC tiriamose CRE šalyse trūkumas apsunkina tolesnius tyrimus ir įgalina tik dalinius tarpsektorinius augimo vertinimo tyrimus pagal viešai prieinamą arba ekspertų atskleistą informaciją. Pavyzdžiui, GVPC paveikto komercinio nekilnojamojo turto rinkos plėtros analizė atskleidė, kad GVPC yra vienas iš pagrindinių biurų paklausos skatinamųjų veiksnių CRE šalyse. Dėl statistinių GVPC duomenų trūkumo apribojama galimybė išmatuoti GVPC poveikį transporto, turizmo, apgyvendinimo ir laisvalaikio, švietimo paslaugų ir konferencijų, pašto paslaugų, medicinos paslaugų, techninės priežiūros ir kitoms antrinėms rinkoms. Vis dėlto, SEB Global Services Vilnius vadovės apklausa ir disertacijos autorės profesinė patirtis viename didžiausių GVPC Lietuvoje parodė, kad verslo kelionių, komandinės veiklos, sporto renginių, pramogų kolegoms iš kitų šalių ženklus skaičius, asmeninio tobulėjimo veikla, mokymasis, kalbų kursai ir kitos su GVPC susijusios veiklos teigiamai veikia minėtas antrines paslaugų rinkas. Dėl prieinamų statistinių duomenų stokos tarpsektorinės plėtros rodikliai nebuvo įtraukti į panelinių duomenų analizę.

Pagrindiniai tyrimo rezultatai, GVPC poveikis regionų plėtros rodikliams: remiantis su GVPC susijusiais tyrimais ir disertacijos autorės atlikta Lietuvos, Lenkijos bei Slovakijos ekspertų apklausa, nereikėtų GVPC poveikio regionų plėtrai vertinti vienareikšmiškai. Viena vertus, GVPC atsiradimas ir plėtra CRE šalyse teigiamai paveikia regiono plėtrą ir suteikia daugiau galimybių ne sostinės miestams, skatina migraciją **į mažiau išsivysčiusius regionus. Kita vertus, kai kuriais atvejais atotrūkis tarp mažesnių ir didesnių miestų net auga dėl GVPC poveikio.** Vietovės specializacijos įverčio vertinimas atliktas šioje disertacijoje taip pat atskleidė nevienareikšmiškus GVPC poveikio regionų plėtrai rezultatus. Lenkijos pavyzdys rodo kai kurių ne sostinės miestų didesnę GVPC specializaciją (ten koncentruojasi daugiausiai GVPC) nei sostinės – Varšuvos. Tuo tarpu Lietuvos pavyzdys rodo, kad sostinė – Vilnius yra vienintelė vietovė, besispecializuojanti GVPC rinkoje, o kitų vietovių specializacijos įverčiai (Kauno, Klaipėdos) yra nepakankami, kad galima būtų teigti, jog šie miestai pasižymi specializacija GVPC rinkoje. Dėl prieinamų statistinių duomenų stokos regionų plėtros rodikliai nebuvo įtraukti į panelinių duomenų analizę.

Pagrindiniai tyrimo rezultatai, GVPC poveikis su BVP susijusiems rodikliams: GVPC neabejotinai prisideda prie su BVP susijusių rodiklių augimo. **Tą parodo ir panelinė duomenų analizė.** Vis dėlto, disertacijos tyrimo rezultatai atskleidė, kad tokios GVPC komponentės kaip užimtumas, išlaidos ir vartojimas bei tarpsektorinė plėtra geriau atspindi makroekonominį GVPC poveikį. Apibendrinama, kad GVPC galimai santykinai stipriai paveikia su BVP susijusius rodiklius, o daugiausiai šis poveikis pasireiškia per užimtumą, išlaidas/vartojimą ir tarpsektorinę plėtrą.

Atlikta GVPC poveikio makroekonominiams rodikliams multiplikatyvinio

efekto vertinimo analizė: disertacijoje pristatomas GVPC poveikio makroekonominiams rodikliams vertinimo modelis, tiesiogini**ų, netiesioginių, paskatintų ir** dinaminių multiplikatyvinių efektų analizė bei SEB Global Services Vilnius verslo atvejo analizė atskleidė, kad disertacijos autorės išskirtos ir su GVPC reiškiniu gretinamos 7 makroekonominių rodiklių grupės yra glaudžiai tarpusavyje persipynusios. **Šioje disertacijoje atskleisti** GVPC makroekonominių poveikių multiplikatyvinio efekto vertinimo aspektai yra laikomi išskirtiniu disertacijos tyrimo bruožu. Remdamasi išanalizuotais makroekonominių rodiklių tarpusavio ryšiais (išreikštais multiplikatyviniu efektu), disertacijos autorė prieina išvadą, kad atskirų makroekonominių rodiklių gretinimas su GVPC reiškiniu neatspindi faktinio multiplikatyvinio GVPC poveikio makroekonominiams rodikliams, todėl reikėtų vertinti multiplikatyvinį poveikį makroekonominiams rodikliams.

Atsižvelgdama į šios disertacijos tyrimo rezultatus, autorė pateikia tokias rekomendacijas:

1. *Statistinių duomenų rinkimo reglamentavimo rekomendacija.* Kadangi pagrindinis disertacijos tyrimo apribojimas, dėl kurio nepavyko naudojant kiekybines išraiškas tiksliai įvertinti GVPC paveikiamų makroekonominių išdavų, yra statistinių duomenų trūkumas ir esamų statistinių duomenų nehomogeniškumas, šios disertacijos autorė, visų pirma, rekomenduotų užtikrinti šių duomenų rinkimo reglamentavimą nacionaliniu lygiu. **Šiuo metu skirtingos CRE šalys naudoja skirtingus GVPC statistinių duomenų rinkimo ir paskelbimo metodus, dėl ko skirtingų šalių duomenis sudėtinga arba net neįmanoma lyginti** ir naudoti juos kiekybiniuose tyrimuose. **Čekija, Lenkija ir Rumunija naudojasi GVPC ekspertų (ABSL agentūros) paslaugomis** rengiant metinius GVPC sektoriaus leidinius, daugiausia pagrįstus GVPC, kurie sutiko dalyvauti tyrime, apklausomis. **Šie leidiniai** yra daugiau ar mažiau homogeniški, yra panašios struktūros ir vertina panašius ekonominius rodiklius. Lenkija papildomai renka su GVPC susijusius duomenis tokių nacionalinių organizacijų pagalba kaip Lenkijos investicijų ir prekybos agentūra (investicijų plėtros agentūra), Pro Progressio, kuri daugiausiai dėmesio skiria GVPC sektoriaus skirtinguose Lenkijos regionuose/miestuose duomenims. Vengrijos GVPC sektoriaus statistika ir kiti duomenys atsispindi metiniuose Vengrijos investicijų plėtros agentūros (HIPA) leidiniuose, kurių pagrindinis tikslas – pristatyti šalį kaip patrauklią lokaciją naujų GVPC steigimui, o ne sutelkti dėmesį į esamų GVPC makroekonominių išdavų vertinimą. Lietuvos GVPC sektoriaus statistika ir kiti duomenys atsispindi metiniuose GVPC leidiniuose, rengiamose Lietuvos investicijų plėtros agentūros – Investuok Lietuvoje. Duomenys Lietuvos GVPC leidiniams renkami kasmet vykdant GVPC apklausą. Slovakija įkūrė AmCham verslo paslaugų centrų forumą (BSCF), kuris yra GVPC sektori-

ui pritaikyta asociacija, atstovaujanti daugiau kaip 90 % užimtumo Slovakije kuriančius GVPC ir rengianti metinius su GVPC susijusius leidinius. BSCF turi nuosavą statistinių duomenų bazę, kuri yra kasmet peržiūrima ir tai yra pagrindinis visų Slovakijos GVPC sektoriaus duomenų šaltinis. Skirtingi aukščiau aptarti GVPC duomenų rinkimo subjektai naudoja skirtingas metodologijas šių duomenų rinkimui, apdorojimui, vertinimui ir publikavimui. Paprastai šių duomenų rinkimas CRE šalyse nėra įteisintas, dėl ko duomenų rinkimo kokybė priklauso nuo šių atsakingų subjektų pastangų surinkti kuo tikslesnius GVPC duomenis atliekant tyrimus ir atnaujinant savo duomenų bazes. Disertacijos autorės nuomone, esamą GVPC duomenų nehomogeniškumą ir nepalyginamumą galima būtų išspręsti įgyvendinant tokias reglamentavimo priemones:

• CRE šalys galėtų įtraukti nacionalines statistikos tarnybas į GVPC duomenų rinkimo procesą. Visų pirma, tai leistų klasifikuoti GVPC kaip atskirą sektorių. Antra, tokie privalomi duomenys kaip GVPC skaičius šalyje ir kiekviename mieste, darbuotojų skaičius GVPC, vidutinis darbo užmokestis GVPC, GVPC įdarbintų reemigravusių piliečių skaičius ir kt. palengvintų GVPC makroekonominių išdavų vertinimą ir GVPC sektoriaus lyginamojo svorio šalies ekonomikoje vertinimą.

• Duomenų homogeniškumui užtikrinti CRE šalys galėtų vieningai sutarti kurių makroekonominių rodiklių duomenis jos turėtų rinkti ir skelbti. Šiame kontekste atsiranda viešojo ir GVPC sektorių partnerystės poreikis arba reglamentuotos pastangos rinkti šalių ekonomiką paveikiančių rodiklių duomenis ir užtikrinti tolesnę GVPC investicijų pritraukimo strategiją.

2. *GVPC ir švietimo įstaigų partnerystės rekomendacija*. Disertacijoje atliktas tyrimas atskleidė, kad darbo vietų restruktūrizavimas – vienas iš svarbių darbo rinkos rodiklių, paveikiamų GVPC. Kadangi paaiškėjo, kad GVPC analizuojamose CRE šalyse užtikrina stabilų ilgalaikį užimtumo augimo tempą, atsiranda glaudesnio GVPC ir švietimo įstaigų bendradarbiavimo poreikis. GVPC komunikacija dėl dabartinių ir numatomų paklausių kompetencijų poreikio galėtų atsispindėti naujose ar atnaujintose studijų programose. Taip pat, įvairios bendros iniciatyvos tokios kaip studentų praktika, karjeros dienos ir kt. galėtų sustiprinti GVPC ir švietimo įstaigų partnerystę. Tai yra svarbūs sklandaus šalių darbo rinkos mechanizmo veikimo, atitinkamo išsilavinimo jaunimo integracijos į nuolat besikeičiančią darbo rinką aspektai.

3. *Nacionalinės kompetentingos GVPC* **įstaigos** *sukūrimo rekomendacija*. Dabartinė CRE šalių praktika rodo, kad kai kurios šalys patiki GVPC sektoriaus analizės funkcijas specialioms institucijoms, organizacijoms, asociacijoms, verslo forumams ir kitiems atsakingiems subjektams (Čekija, Lenkija, Rumunija ir Slovakija). Kitose šalyse GVPC sektoriaus analizę atlieka nacionalinės investicijų plėtros agentūros (Vengrija, Lietuva). Disertacijos autorės nuomone, atsakingų ekspertų ir nacionalinių in-

vesticijų plėtros agentūrų bendradarbiavimas šiuo klausimu galėtų būti efektyviausias, o Slovakijos pavyzdys rodo, kad kompetentingos, GVPC sektoriui pritaikytos institucijos (BSCF), bendradarbiaujančios su nacionaline plėtros agentūra (SARIO), geroji praktika galėtų būti pritaikyta ir kitose CRE šalyse. Panašaus principo GVPC kompetentingos institucijos kitose CRE šalyse galėtų prisidėti prie GVPC (makro)ekonominių išdavų vertinimo, šalies GVPC investicijų skatinimo strategijos atsižvelgiant į atliktų tyrimų rezultatus suderinimo ir atsakant į klausimą kaip GVPC gali prisidėti prie CRE šalių ekonomikos augimo, ieškoti atitinkamų galimybių.

Tolesnių tyrimų kryptys. Disertacijoje atlikto tyrimo rezultatai atskleidė, kad dabartiniame GVPC reiškinio pažinimo etape ir įvertinus turimus GVPC statistinius duomenis, disertacijoje taikomas GVPC poveikio makroekonominiams rodikliams vertinimo modelis CRE šalyse yra validus. Vis dėlto, ateityje, kai pavieniams tyrėjams bus pasiekiami ilgesnio laikotarpio statistiniai GVPC duomenys, galėtų būti papildytas kitais kiekybiniais tyrimo metodais.

Disertacijos autorės siūlomos GVPC statistinių duomenų rinkimo reglamentavimo, GVPC ir švietimo įstaigų partnerystės ir nacionalinės kompetentingos GVPC įstaigos sukūrimo rekomendacijos, pagrįstos disertacijos tyrimo rezultatais ir kai kuriais CRE šalių praktiniais pavyzdžiais, įgalintų ateityje į tyrimus įtraukti daugiau kiekybinių tyrimo metodų ir padėtų plačiau įvertinti GVPC poveikį makroekonominiams rodikliams CRE šalyse.

Mokslinių publikacijų disertacijos tema sąrašas.

1. Tamošiūnienė, R., Kislovska, A., Kazlauskienė, E., Gankova, T. (2016). *Economic Aspects of Increasing Value and Scope of Shared Services Centres.* 9th International Scientific Conference "Business and Management 2016". Vilnius Gediminas Technical University, May 12-13, 2016, Vilnius, Lithuania. eISSN 2029-929X. eISBN 978-609-457-921-9. Article ID: bm.2016.75. http://dx.doi.org/10.3846/bm.2016.75

2. Kislovska, A., Tamošiūnienė, R. (2016). *Economic Multiplier Effect of Shared Service Centres.* Scientific journal Ekonomika a management 4/2016, Faculty of Business Administration, University of Economics, Prague.

3. Kislovska A., Tamošiūnienė R. (2017). *Employment Restructuring Enhanced by Shared Service Centres.* UNITECH 2017-Gabrovo, 17-18 November 2017, GABROVO : international scientific conference, Vol. IV : proceedings. Gabrovo: University publishing house "V. APRILOV" – GABROVO, 2017. ISSN 1313-230X, p. 126-130. [M.kr.:S 003; S 004]

4. Kislovska A., Tamošiūnienė R. (2022). *Modelling Evaluation of Macroeconomic Outcomes Stimulated by Global Business Services Centers in Central and Eastern Europe Countries.* Transformation in Business & Economics (TIBE), Vol. 21, No 1 (55),

pp. 149-168.

Mokslinių pranešimų disertacijos tema sąrašas.

1. Tamošiūnienė, R., Kislovska, A., Kazlauskienė, E., Gankova, T. (2016). *Economic Aspects of Increasing Value and Scope of Shared Services Centres*. 9th International Scientific Conference "Business and Management 2016". Vilnius Gediminas Technical University, May 12-13, 2016, Vilnius, Lithuania. eISSN 2029-929X. eISBN 978-609-457-921-9. Article ID: bm.2016.75. http://dx.doi.org/10.3846/bm.2016.75

2. Kislovska A., Tamošiūnienė R. (2017). *Employment Restructuring Enhanced by Shared Service Centres*. UNITECH 2017-Gabrovo, 17-18 November 2017, GABROVO : international scientific conference, Vol. IV : proceedings. Gabrovo: University publishing house "V. APRILOV" – GABROVO, 2017. ISSN 1313-230X, p. 126-130. [M.kr.:S 003; S 004

Kita mokslinė veikla.

1. Dalyvavimas *Demola Mid Pitch* renginyje "*Thule Operacijų Centro projekto Demola 2016 pavasario grupė*". Thule operacijų centro verslo atvejo analizė – studentų ir verslo bendradarbiavimas, kurio tikslas buvo sukurti įmonės kultūros modelio prototipą šiam GVPC. Žiema, 2015 – Pavasaris, 2016, Demola patalpos, Mokslininkų g. 2A, Vilnius.

2. Dalyvavimas SEB centrinės būstinės ir SEB Global Services Vilnius GVPC žinių perdavimo projektuose. Kovo 13-24 (2016), Stokholmas ir sausis – balandis (2017), Stokholmas.

GYVENIMO APRAŠYMAS

Vardas, pavardė	Anna Kislovska
Elektroninis paštas	annavgtu@yahoo.com
Išsilavinimas	2015-2021 **Mykolo Romerio universitetas**
	Doktorantūros studijos, Ekonomika
	2011-2013 **Vilniaus Gedimino technikos universitetas (Vilnius Tech)**
	Magistro kvalifikacinis laipsnis, Tarptautinis verslas
	2007-2011 **Vilniaus Gedimino technikos universitetas (Vilnius Tech)**
	Bakalauro kvalifikacinis laipsnis, Verslo vadyba ir administravimas
Profesinė veikla	2021-dabar **Alter Domus Lithuania, UAB**
	Struktūrinių paskolų administravimo vadovė
	2021-2021 **Swedbank Robur Fonder AB, Lietuvos filialas**
	Sandorių ir akcinių įvykių specialistė
	2016-2020 **Skandinaviska Enskilda Banken AB, Vilniaus filialas**
	Vyriausioji banko operacijų specialistė, struktūrinių kreditų pareigūnė
	2013-2016 **Skandinaviska Enskilda Banken AB, Vilniaus filialas**
	Banko operacijų specialistė, kreditavimo operacijos
	2011-2013 **Valstybinė ligonių kasa prie Sveikatos apsaugos ministerijos**
	Tarptautinių ryšių skyriaus vyriausioji specialistė
	2010-2010 **Person Premier**
	Verslo plėtros praktikantė
Kalbos	Lietuvių kalba – gimtoji kalba
	Lenkų kalba – gimtoji kalba
	Anglų kalba – C1/C2
	Rusų kalba – C1/C2
	Švedų kalba – B1

Kislovska, Anna

EVALUATION OF GLOBAL BUSINESS SERVICES CENTERS IMPACT ON MACROECONOMIC INDICATORS IN CENTRAL AND EASTERN EUROPE COUNTRIES: daktaro disertacija. – Vilnius: Mykolo Romerio universitetas, 2022. P. 496.

Bibliogr. 269-285 p.

The scientific problem of the dissertation: what is the Global Business Services Centers (GBSCs) impact on macroeconomic indicators and how to evaluate this impact. The dissertation analyzes changes in the global economy structure driven by the development of foreign direct investment segment – GBSCs. In the light of the fact that GBSCs phenomenon is well known in business community, but is novel in scientific community, dissertation increases scientific exploration level of it. GBSCs as economic phenomenon theoretical reasoning is performed, conceptual framework of GBSCs is presented, increase in GBSCs value and scope is analyzed, interconnectedness between GBSCs and macroeconomic indicators multiplier effect is revealed in the dissertation. GBSCs macroeconomic outcomes evaluation model in Central and Eastern Europe countries incorporating multiplier effects and panel data analysis is presented as a solution for the GBSCs limited measurability and limitations related to it. The results of the dissertation show that labor market indicators are the mostly impacted macroeconomic indicators and multiplier effect evaluation together with panel data analysis enable to reveal more accurate GBSCs impact manifestation.

Keywords: Global Business Services Centers (GBSCs), GBSCs impact measurability, evaluation of multiplier effect of GBSCs macroeconomic impact.

Disertaciniu tyrimu siekiama išspręsti problemą: kokį poveikį makroekonominiams rodikliams turi globalių verslo paslaugų centrai (GVPC) ir kaip šį poveikį įvertinti. Disertacijoje nagrinėjami pasaulio ekonomikos struktūros pokyčiai paskatinti GVPC – paslaugų sektoriaus tiesioginių užsienio investicijų segmento – plėtros. Įvertinus tai, kad GVPC reiškinys yra plačiai žinomas verslo bendruomenėje, bet nėra plačiai ištirtas mokslo bendruomenėje, disertacija prisideda prie GVPC reiškinio ištyrimo lygmens ekonomikos mokslų kontekste didinimo. Disertacijoje atliekamas teorinis GVPC kaip ekonominio reiškinio pagrindimas, pristatoma GVPC koncepcija, atliekama GVPC apimties ir ekonominės vertės augimo analizė, identifikuojami GVPC paveikiamų makroekonominių rodiklių tarpusavio ryšiai, išreikšti multiplikatyviniu efektu. GVPC makroekonominių išdavų išmatuojamumo ir su juo susiję ribotumai išsprendžiami pateikiant GVPC poveikio makroekonominiams rodikliams Centrinės ir Rytų Europos šalyse vertinimo modelį, įvertinantį multiplikatyvinius efektus ir panelinių duomenų analizę. Disertacijos tyrimo rezultatai rodo, kad iš septynių išanalizuotų makroekonominių rodiklių grupių GVPC didžiausią poveikį daro darbo rinkos rodikliams, o multiplikatyvinis šių rodiklių vertinimas ir panelinė duomenų analizė leidžia tiksliau šį poveikį įvertinti.

Raktiniai žodžiai: globalių verslo paslaugų centrai (GVPC), GVPC poveikio išmatuojamumas, GVPC multiplikatyvinio makroekonominio poveikio vertinimas.