

University of Latvia
Faculty of Economics and Management

Journal of Economics and Management Research

Founded in 2001
as Acta Universitatis Latviensis, series
“Economics. Business Administration”

Volume 4/5

Rīga 2016

Journal of Economics and Management Research, Volume 4/5.

Riga: University of Latvia, 2016, 176 pages.

The Journal of Economics and Management Research is an interdisciplinary scientific journal in the field of economics, business management, national economy, structural and social policies, innovation perspectives and institutional capability.

The Journal of Economics and Management Research, a Scientific Journal of the University of Latvia, is published once per year.

General Editor – Assoc. prof. Dr. **Viesturs Pauls Karnups**

EDITORIAL BOARD

Prof. Dr. Signe Bāliņa, University of Latvia

Prof. Dr. Jean David Avenel, Paris-Est Creteil (Val de Marne) University (France)

Assoc. Prof. Dr. Džineta Dimante, University of Latvia

Prof. Dr. Gundars Kaupins, Boise State University (USA)

Prof. Dr. Natalia Kuznetsova, St. Petersburg University (Russia)

Prof. Dr. Kristina Levišauskaitė, Vytautas Magnus University (Lithuania)

Prof. Dr. Barry Lesser, Dalhousie University (Canada)

Prof. Dr. Nikolay Nenovsky, University of Picardie Jules Verne (France)

Prof. Dr. Josef Neuert, University of Applied Sciences Kufstein (Austria)

Prof. Dr. Tiiu Paas, Tartu University (Estonia)

Prof. Dr. Gunnar Prause, TSEBA/Tallinn University of Technology (Estonia)

Prof. Dr. Arild Sæther, Agder Academy of Sciences and Letters (Norway)

Prof. Dr. Bruno Sergi, Messina University (Italy)

Prof. Dr. Biruta Sloka, University of Latvia

Prof. Dr. Baiba Šavriņa, University of Latvia

Prof. Dr. Ligita Šimanskienė, Klaipeda University (Lithuania)

Prof. Dr. Ērika Šumilo, University of Latvia

Assoc. Prof. Dr. Kamil Zajackowski, University of Warsaw (Poland)

Assoc. Prof. Gundars Bērziņš, University of Latvia

Prof. Dr. Margarita Dunska, University of Latvia

Journal is available:

[http://www.lu.lv/apgads/izdevumi/elektroniskie-izdevumi/
zurnali-un-periodiskie-izdevumi/journal-of-economics-and-management-research/](http://www.lu.lv/apgads/izdevumi/elektroniskie-izdevumi/zurnali-un-periodiskie-izdevumi/journal-of-economics-and-management-research/)

Layout: **Andra Liepiņa**

Cover design: **Agris Dzilna**

© University of Latvia, 2016

ISSN 2255-9000

TABLE OF CONTENTS

From the Editor	4
Ieva Braukša Political Aspects of Economic Development in Latvia	5
Aleksandrs Dahs Measuring the Impact of Spatial Factors in Regional Demographic Development of Latvia	15
Milda Damkuvienē, Sigitas Balčiūnas, Evandželina Petukienē Client Perceived Participation Value: Conjoint Analysis	29
Rasa Daugēlienē Nature of Trade Policy Between Lithuania and Russia: a Study on the Application of Trade Barriers in the Period of 2007–2014	41
Elena Dubra, Kristaps Soms Evaluation of Social and Economic Convergence of Latvia to the EU-28 Level	60
Edgars Rožāns The Impact of Economic Freedom on the Attraction of Foreign Direct Investment in the Baltics	74
Inga Jēkabsons, Biruta Sloka Methodology of Measurement of Objective Well-Being in Municipalities, the Case of Latvia	96
Baiba Zvirbule Analysis of Accounting Regulatory System in Latvia	112
Viesturs Brālis What's inside of Knowledge Management Effectiveness?	127
Juris Baldunčiks Diffusion of Innovations and its Forecast for E-Signature in Latvia	145
Diāna Arāja, Kārlis Krūzs Resources of Health Care Financing in Latvia: Historical Review and Eventual Changes	159
The Authors	172

FROM THE EDITOR

Dear Reader,

The Journal of Economics and Management Research is under new management with a new General Editor and Editorial Board.

This is a double issue to catch up the missing year, but we hope that beginning from next year we will be able to publish at least one issue per year.

Most of the authors are PhD students and we encourage articles both from established academics, as well as prospective academics.

We are looking forward to an exciting 2017 and hope for your support in making this Journal a leader in its field.

Best wishes

Viesturs Pauls Karnups

General Editor

POLITICAL ASPECTS OF ECONOMIC DEVELOPMENT IN LATVIA¹

IEVA BRAUKŠA

Abstract

This article explains political business cycle theory and political factors that could affect economic development. It introduces results of previous research for the case of Latvia and seeks for the explanation and insight on the action appropriate to the theory and possibility to apply it for the situation in Latvia.

This article uses European values Study data, which is a cross-national and longitudinal survey aimed at understanding human value system and beliefs all over Europe. In the study there is an ongoing discussion on how decisions and actions of the politicians have influenced people's trust and attitude towards them and how this can be partially explained by political business cycle theory.

Keywords: Latvia, political business cycles, public attitude, European Value Study, elections

JEL code: D72, D78, E32

INTRODUCTION

Economic development is considered as one of the key objectives for any country, and several factors exist which influence it. Firstly, options to increase national wealth must be mentioned, which are dependent on the current situation in the country. A lower starting point can become an obstacle for further development, but at the same time there are more options to increase national wealth without investing enormous resources. Latvia is defined as one of the former post-Soviet space countries. Although each of these former Soviet Union countries is different, they all have something in common – which to a greater or lesser extent is expressed as the Soviet legacy. It should be noted that society's lack of confidence in political forces and often negative attitude towards politics could be one of these characteristics – the author will take a closer look at this hypothesis in the case of Latvia, involving slightly also data about the other Baltic States.

Also recent results regarding the dissolution of the 10th parliament which took place on 23 July 2011 indicate people's frustration with the politicians. 94.3% voted in favour of dissolving the parliament (data by The Central

¹ This work has been supported by the European Social Fund within the project "Support for Doctoral Studies at University of Latvia".

Election Commission of Latvia). Further in the work political factors affecting the economic development will be discussed, as well as European Values data analysed (European Values Study, 3rd and 4th survey data phase). It will be done to get an overall impression of people's attitude towards policy makers, which could partially explain the current social and economic development problems. The data of this research provides a specific insight and allows better understanding of issues of people's attitude and will be used to evaluate the possible reasons behind the cyclical behaviour in the budgets of municipalities found in previous research.

The aim of this article is to summarise information regarding political business cycles and channels of political influence transmission to economic development, particularly analysing changes in voter trust in politicians over different time periods. In this research a literature review and analysis, as well as statistical analysis of European Value study data was used to discuss the electoral cycles and political factor influence on the real economy.

PREVIOUS RESEARCH AND POLITICAL BUSINESS CYCLE THEORY

Political, economic and social developments are closely related to each other. When in a country there is improvement in one of these areas most often improvements in remaining areas can be observed. Politics influence economic and social development in a number of ways, they can vary greatly. Some of the most important ways which need to be distinguished are as follows:

- 1) Development of organised justice system's structure;
- 2) Allocation of resources to various activities and areas; and
- 3) Setting targets for economic and social development.

As political decisions can affect not only laws and regulations, but also allocate funds for various purposes, therefore political aspects play an important role in social and economic development. Nevertheless several authors (Rose, 2006) believe that fiscal rules can limit politicians' options to make decisions that are favourable to them. In 2011 in Latvia general government expenditure accounted for 39.1% of GDP (Report on the Economic Development of Latvia 2011). This means that even during the economic recession public spending still played an important role even when it was reduced.

According to Inglehart's Modernisation and Post-modernisation approach (Inglehart, 1997), economic development, changes in culture and politics are closely related and to some extent predictable. Therefore the question arises – if politics plays such a major role in social and economic development, isn't it so that just a few people from the elite are resolving issues important to the whole society? Discussion on the elite issue theory was pioneered by such authors as G. Tosca, V. Pareto and R. Michel at the end of 19th and in the early 20th century. Of course, in case of democracies one can say that the elite represent the whole nation,

and therefore through the ballot box all voters can decide which political force they wish to see at the forefront of the country. Some evidence to substantiate political influence on economic development in different European countries has already been presented in other researches (Sapir et al., 2002; Sanders et al. 2011). And these effects are more pronounced in new democracies (Brender et al., 2005), but older EU countries are more inclined towards stabilisation policy (Andrikopoulos et al., 2004).

The theory of political business cycles points out that the elections can be seen as a factor which influences economic development. The basis for this theory is an observation that before elections the politicians are trying to make such decisions that will get popular among voters (Hibbs, 1977). The objective of these decisions is to increase the popularity of politicians, as well as to get a chance of being re-elected thus ensuring the opportunity to work and influence decisions for the benefit of the party or lobby group which one represents. Less popular decisions can be made after the elections which probably are necessary only due to the expansive fiscal policy that existed before the elections.

According to political business cycle theory, voters are more interested in decisions which are made shortly before the elections (Hibbs, 1977; Nordhaus, 1975; Truffle, (1978); Alesina & Sachs, 1988), but they may forget about older political activities as over time they may be seen as less important. Thereby one can assume that voters have a “short memory” and it can be supported by the thought that recent events are more discussed in media or among people during a cup of coffee. If politicians are brave enough to make unpopular decisions shortly before elections then they most likely will lose potential voters. Another opportunity would be distribution of resources among different regions depending on how many voters live there (Biswas & Marjit 2008). In parallel with these objective factors exist which could cause this cycle. For example, if the politician is elected for a term of four years he could wish to implement certain things and therefore try to finish them during his term.

If unpopular decisions are made in a relatively longer time prior to the elections there is a chance that rumours and debate on this topic might already have stopped, thus not lowering a politician’s chances to get the necessary votes in the next elections (Rogoff, 1990).

So before the elections politicians could increase spending in those areas which could increase their popularity (e.g. social benefits, medicine, and education). Less popular decisions, such as increasing taxes or budget cuts to different sectors, are made only after the elections. Therefore it can be mentioned that before the elections government expenditure increases, thereby increasing overall demand and GDP. The pre-election period has a positive impact on economic growth, although this increase is probably more rapid than in the case of optimal economic growth. It may have possible side effects such as increased inflation or decreased unemployment level.

Additional expenditure before the elections can, in fact, be one of the reasons why it must be decreased after the elections, searching for additional sources of funding (e.g. tax increase). Consequently the political decision related to fiscal or monetary politics can serve as a link between politics and economics in order to stabilise the current economic situation. For instance, if the economy is above its potential level, a restrictive policy can make it return to the optimal level. Of course, the simplified theory does not address the other aspects of fiscal policy-making such as influence of other countries or international organisations that facilitate preservation of fiscal policy or voluntary cost reduction during a crisis period.

The theory of political business cycles is based on the assumption that the economic development in a country is cyclic and these cycles are influenced by national political processes. Short-term cycles (3–5 years) could represent the frequency of elections being held in that country.

In this case the elections are the factor that affects cyclic economic development. Only popular decisions are being made before the elections, policies which increase the number of potential voters are pursued. There are changes possible both in the legislation and the budget structure which in the most cases are necessary for the implementation of new regulations. As a consequence, the GDP may exceed the optimal level, which can be reached with full employment or an optimal inflation level.

Economic growth after the elections can slow down or, in some cases, become even more negative. But this is just a theoretical example and if in the particular case there are more important factors contributing, in that case short-term business cycles can differ from political cycles.

In this research mostly factors affecting economic growth are addressed. Further in the article, when The European Values Study data is analysed, the type of possible effects is discussed, especially in the Latvian case. And with the help of this data the importance of people's attitude is attempted to be evaluated and the possible effects on the development of political business cycles described in the theory. In this research the European Value study data is used in order to determine the attitude of people towards political parties and the government. This helps to understand how political decisions have influenced and changed the trust in them, as well as to assess the politicians' options to continue their work and influence economic development. It will also help to understand how people in Latvia are affected by the ongoing political processes and how, as time goes, their values and attitude related to politics and politicians change.

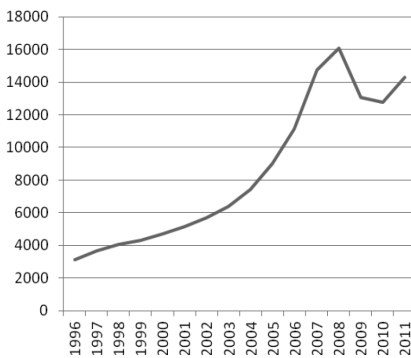
CHARACTERISTICS OF SITUATION IN LATVIA

During the course of the last decades Latvia has experienced political, social and economic changes. Being a post-Soviet country, Latvia has the characteristics which affect people values and opinions, although attempts have been made to pay

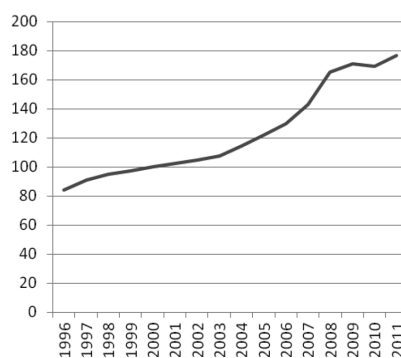
attention on other aims and values. Previous research (Braukša, 2011) indicates that during the years of municipality elections municipality budgetary spending increases, but after elections – decreases. This could indicate that in Latvia there are present political business cycles that influence economic development. As one of the main principles of this political business cycle theory is that politicians try to maximise the number of votes they receive during elections, an important area to look at is the trust in politicians and political parties. That will be done further in this article showing the levels and changes of this trust to evaluate how this condition is met.

Latvia simultaneously had to develop new political, economic and social systems, and now there is an opportunity to look back at it and see the results of these changes. To illustrate economic development in Latvia Figure 1 is included showing how Gross domestic product (GDP) at current prices and consumer prices have changed over time. GDP grew steadily; starting to rise even faster after Latvia joined European Union. During economic boom period in 2007 and the beginning of 2008 it reached the peak, but consumer prices also increased rapidly as high internal demand was supported by crediting and high purchasing power. The situation changed during the economic crisis period. Strict economic policy and budget consolidation, as well as both internal and external demand decline resulted in a GDP decrease and the lowering of consumer prices. Recently Latvia has shown signs of a strong recovery.

Gross domestic product at current prices,
millions of lats



Consumer price changes,
index 2000=100



Source: Central Statistical Bureau of Latvia

Figure 1 **Macroeconomic indicators of Latvia – GDP and consumer price changes**

By setting and consequently reaching the goal to join the European Union Latvia has pointed out which are the national priorities. Therefore it is interesting to analyse not only the level achieved by the state, but also important values provided to the citizens. The European Values study is valuable source of information; therefore its data can be used for this purpose.

For example, there was the 10th Parliamentary elections held, and one observed that very soon after them several discussions were held and decisions were made about government spending cuts in various sectors. Also the tax increase which, surprisingly or not, was not what was promised before the elections. The situation resulted in the dissolution of the 10th parliament which took place on July 2011 (94.3% voted in favour of dissolving the parliament) which indicated people's frustration with the politicians.

There is an interesting situation in Latvia, since the attitude towards politicians at national and regional level may differ. With a little exaggeration one could say that regardless of who is in the Latvian government and of what politicians or political groups the government consists of, the public still would not like it. There are negative beliefs and distrust expressed towards the government in the society; thereby it is very difficult for politicians to have the support from voters. Later the author will take a look at statistical data related by European Values Study to this issue.

If one looks at peoples' attitude and trust towards politicians at the regional level then the situation is a bit different. There have been fewer changes in leading parties and politicians observed in regional municipalities. Quite often the elections are won by the parties which have been represented in these institutions previously. It could be partially explained by the fact that on the regional government level there are rarely new and strong political groups formed, but it does not explain why people continue to support previous leaders.

If the actual results of the activities of politicians are difficult to see at the national level then in municipalities the situation is different. People are informed that municipality has allocated financial resources to the local school, helped to clean the local park, provided funding to repair roads or, for example, have supported local people with low incomes. Evaluating such work of politicians it can be seen that the probability of the same politicians being re-elected in the next elections increases.

ANALYSIS OF PEOPLE'S ATTITUDE

In order to analyse people's attitude towards various issues related to political aspects of social and economic development, the author will look at the European Values study. This is a longitudinal study aimed at understanding human value systems and beliefs all over Europe. The research provides an insight into topics which are related to beliefs, preferences, as well as assessment of various political, social and economic issues. It has been carried out at different time periods; in this article the analysis data from 1999 and 2008 is used. Data from this study is freely available to the public. This study is built on multi-stage or stratified random sample and for Latvia about 2008 there is a data available on 1506 respondents, but in 1999 – data on 1013 respondents.

People were interviewed about their attitude towards different values. One of the questions that is the most related to this research is the extent to which people have confidence in the parliament. In 2008 one third of the Latvian respondents have no confidence in the parliament. Only 2% of respondents revealed that they fully trust the parliament and 19% responded that they are confident in the capabilities of the parliament. Compared to 1999 confidence of the people has decreased. In 1999 4% of respondents had a complete confidence in the parliament, 24% more do not trust than trust, but only 27% fully do not trust the parliament.

The comparison period is quite long – ten years. During those years many political parties were restructured, government and leading parties are different. One of the most important political events of this decade undoubtedly was the joining the European Union thus setting the key development strategy and direction. Already in 1999 people experienced the advantages and disadvantages of liberalisation policy, as well as the Russian financial crisis in 1998 which also has influenced the Latvian economy as exports to this country played a very important role. 2008 also marked the beginning of the global and local Latvian financial crisis; the confidence in government has decreased in 2008.

If one takes the elections aspect into account in this research, it is possible to evaluate how long was the time period between time of asking the question and the next elections. Close to these events were the parliamentary elections in 1998, 2002, 2006, and 2010, as well as municipal elections in 1997, 2001, 2005, and 2009 (although, for example, European Values Study conducted before these last elections, according to the political business cycle theory, the actions of politicians while preparing for the approaching elections could have influenced the attitude of voters). So when the European Values Study was conducted in 1999 it was a year after the parliament elections and two years after municipal elections. 2008 was a year before to the forthcoming municipal elections which took place later (two years after Latvia's *Saeima* (parliament) elections).

Based on the development of the political business cycle theory is the fact that politicians make popular decisions shortly before the elections, but less popular – after the elections. This means that in 1999, when study is being conducted one year after the elections, the country is in the unpopular decision-making period. But also the second phase of the study is being carried out between the elections and its influence cannot be observed yet or people still remember some restrictions which politicians have made after the previous elections.

Compared with the other Baltic States in Latvia there is the most negative attitude towards the parliament. People in Lithuania are more positive – 24% fully have a complete confidence in the parliament or believe in its capabilities, but in Estonia their number is even as high as 37%.

One more question that is related to the confidence of people in political system is to what extent they trust political parties. The question was formulated as follows: "How much confidence do you have in political parties?" In 2008 44% of respondents revealed that they do not trust political parties at all. This question

was included only in the second stage of the study therefore it is not possible to compare results with the previous period.

It can be concluded that there are more of those people who have no confidence in political parties, but have in the government. Although this confidence level is not high and does not even reaches 50% (which would be a level that could be considered as the necessary share of voters needed for re-election of politicians). The fact that people have more confidence in government than political parties suggests that perhaps during the time when the survey was carried out more people were satisfied with government's activities than with the parties. One possibility, of course, is that people like at least one or a few parties, but when asked about confidence in them people deny this fact because there is at least one party in which they are not confident in.

Interesting is the fact that according to European Value Study that in Lithuania and Estonia confidence in political parties is even lower (however, it should be taken into account that people were more positive to question about having confidence in government). Though these results should be taken with caution as other trust barometers shows quite the reverse situation in the Baltic States with the lowest trust level in Latvia. According to European Value Study data, in Lithuania only 9% said that they have a complete confidence in political parties and there were fewer of those who do not trust political parties – only 27%. In Estonia confidence in political parties is slightly higher than in Lithuania, but it is still lower than in Latvia – 12% of all people surveyed have a full confidence in political parties, but 40% of respondents said that they do not have any confidence in them.

From the above it can be concluded that the Latvian people are not confident either in political parties, or their government. In order to implement the political business cycle theory the opportunities for politicians to get a stronger confidence from the people needs to be examined.

Further research could look into the factors which influence peoples' attitude towards politicians based on any decision made by the politicians depending on the type of decision.

CONCLUSIONS, PROPOSALS, RECOMMENDATIONS

The political business cycle theory introduces a hypothesis that politicians shortly before elections make popular decisions because they want to be re-elected and continue their work. In the research using the results of European Values study in 2008 and 1999 one of the indicators for developing of political business cycles was analysed – the confidence in government and political parties.

Based on this analysis of European Values study data it can be concluded that comparing 2008 with 1999 the confidence in government has declined. There can be several reasons for such a tendency, including the deteriorating economic situation. Also one of these reasons is the cyclic nature of the elections, because

the survey in 1999 was carried out a year after the parliament elections, but the survey of 2008 – two years after the elections. This in relation to the political business cycle theory is a phase during which the government is ready to make more unpopular decisions and hence it can at least in part explain the loss of confidence in public during this period.

Nevertheless, confidence in the Latvian government is stronger than overall confidence in political parties. Also people in other Baltic States are more confident in government than in political parties. From that it can be concluded that although political parties in these countries do not have lot of trust from the people the government that, of course is changing but also has more options to implement own ideas and reach aims, still manages to get at least a bit more support from the citizens. These results do not exclude the possibility that actions of the politicians could be oriented towards getting more support from voters.

Although the ideas and results discussed in the article cannot be interpreted unambiguously, nevertheless, at least in the context of the Baltic States, the results suggest that the hypothesis on possible influence of political factors of economic and social development cannot be fully rejected. Further research using information about budgetary expenditure amount and structure will be necessary and are planned to analyse these issues.

REFERENCES

- Alesina, A., & Sachs, J., 1988. Political Parties and the Business Cycle in the United States, 1948-1984. *Journal of Money, Credit and Banking*, 20, pp. 63-88.
- Andrikopoulos, A., Loizides, I., & Prodromidis, K., 2004. Fiscal policy and political business cycles in EU. *European Journal of Political Economy*, 20, pp. 125-152.
- Biswas, R., & Marjit, S., 2008. Distributive manipulations and political stability: A theoretical analysis. *International Review of Economics and Finance*, 17, pp. 618-628.
- Braukša, I. Political Business Cycles: Influence on Regional Development in Latvia. Conference proceedings. *New Socio-economic Challenges of Development in Europe – 2010*. Riga, Latvia 2010. pp. 240-246.
- Brender, A., & Drazen, A., 2005. Political budget cycles in new versus established democracies. *Journal of Monetary Economics*, 52, 1271-1295.
- Central Election Commission of Latvia, Referendum on Dissolution of the 10th Saeima (23rd of July, 2011) Results. [online] Available on: <http://www.tn2011.cvk.lv/results.html>
- European Value Study, Results from round 3 and 4 [online]. Available at: <http://zacat.gesis.org>
- Hersch, Ph., Netter, J. M., & Pope, C., 2008. Do Campaign Contributions and Lobbying Expenditures by Firms Create “Political” Capital? *Atlantic Economic Journal*, 36, pp. 385-405.
- Hibbs, D., 1977. Political Parties and Macroeconomic Policy. *American Political Science Review*, 71, pp. 1467-1487.
- Inglehart, R., 1997. *Modernization and Postmodernization: Cultural, Economic, and Political Change in 43 Societies*. Princeton: Princeton University Press.

- Ministry of Economics. Report on the Economic Development of Latvia, Riga, 2012. g. June.
- Nordhaus, W., 1975. The political business cycles. *Review of Economic Studies*, 42, pp. 169-190.
- Rogoff, K., 1990. Equilibrium Political Business cycles. *American Economic Review*, 80, pp. 21-36.
- Rose, S., 2006. Do fiscal rules dampen the political business cycle? *Public choice*, 126, pp. 407-431.
- Sanders, D., Clarke, H. D., Steward, M. C., & Whiteley, P., 2011. Downs, Stokes and the Dynamics of Electoral Choice. *British Journal of Political Science*, 41, pp. 287-314.
- Sapir, A., & Sekkat, K., 2002. Political cycles, fiscal deficits, and output spillovers in Europe. *Public choice*, 111, pp. 197-202.
- Tufte, E. R., 1978. *Political Control of the Economy*. Princeton: Princeton University Press.

MEASURING THE IMPACT OF SPATIAL FACTORS IN REGIONAL DEMOGRAPHIC DEVELOPMENT OF LATVIA

ALEKSANDRS DAHS

Abstract

Over the past few decades, there has been a growing interest in research concerning the spatial aspects of complex regional socio-economic and demographic processes. Spatial econometric analysis of these processes, utilising specialised methods and models, may facilitate deeper understanding of the spatial distribution of the indicators under study, and allows discovering previously unperceived dimensions of regional development problems. This article proposes an econometric approach to the analysis of spatial interdependencies of regional demographic indicators suggested in the empirical literature. The author describes and tests possible methodology for measuring spatial spillover levels of the selected types of socio-economic factors and policy instruments in the context of demographic development of Latvian local municipalities. Relying on the results of spatial autocorrelation tests, and later, the estimation of a proposed Spatial Durbin Model, the author makes several practical conclusions concerning spatial distribution of key demographic indicators, and inter-regional spillover levels of selected impact factors.

Keywords: Latvia, spatial econometric analysis, spatial demography, spatial regression models, spatial autocorrelation

JEL code: C21, J11, R12

INTRODUCTION

The majority of earlier sociological and demographic studies concerning Latvia's regional development treat individual geographical units, such as parishes, local municipalities (*Novadi*), cities or whole statistical regions as independent isolated entities rather than as a system of interconnected geographic units which may and do interact (e.g., through every-day commuting, family members residing across the border, provision of services etc.). However, in the international scientific literature, and particularly in studies on population dynamics, such spatial effects have long been theorised and applied via several disciplines of social sciences such as geography and regional science, including, but not limited to spatial diffusion theory, growth pole theory, central place theory, and new economic geography theory (e.g. see Chi G. & Zhu J., 2008).

From the basic exploratory and statistical analysis of the local municipality-level data (SRDA, 2012), an interesting observation can be made, namely, that the actual returns of public investments, regional and social policy instruments, or aid measures, in most local municipalities, are not perfectly proportional to the inputs. For instance, in some territories, positive demographic effects of social policy spending or improvement of economic situation do not result in a proportional improvement of migration flows or fertility indicators and vice versa.

Apparently, geographical disaggregation of data may result in different (usually lower) results of policy instruments or positive economic stimuli. Similar finding has been attributed in the literature to the existence of spatial spillovers from one region into neighbouring territories. These spatial spillovers are explained as the result of the network effects, that is, since most basic elements of demographic development have network characteristics (e.g., everyday commuting, family members residing across the border etc.) the application of specific policy measures or improvement of socio-economic situation in one region are expected to positively affect demographic development in other regions.

On the other hand, it has also been argued that a form of negative spillovers may also exist between territories. The argument is that stimulating policy or general improvement of social and economic conditions in one location can draw resources (e.g. population) away from other locations as “it enhances the comparative advantage of that location relative to other places” (Boarnet, 1998).

The general issue of spatial spillovers has also been widely approached in other areas of social and economic research. In the literature devoted to economic growth, for instance, it is theorised that fast-growing countries and regions tend to cluster together, implying that both location and neighbourhood structure is important for economic growth (e.g. Moreno and Trehan, 1997). Usually, in economics, researchers are trying to evaluate the degree to which government spending of some countries is influenced by the similar spending of neighbouring states (e.g. Case et al., 1993). Some other scientific papers try to test the Core-Periphery hypothesis and/or Growth Pole theory which both imply that the development of some regions may have a positive influence on nearby regions. Finally, in regional development studies, many spatial studies conclude that regional convergence capabilities are highly related to spatial factors in the given territory (e.g. Vaya et al., 2004).

With that in mind, this study aims to analyse the spatial inter-dependency aspects of several key demographic indicators of Latvia's local municipalities covered by the most recent population census of 2011, while attempting to identify the associated socio-economic factors and estimate their impact. By the later comparison of the results of the traditional analysis methods with the results derived from the corresponding spatially adjusted models, the author attempts to measure the levels of spatial spillover of the particular types of socio-economic factors, distinguishing those having the direct local application, and those, which may later demonstrate a spatial dispersal effect.

RESEARCH RESULTS AND DISCUSSION

First, before going any further with the econometric analysis, it is necessary to identify the available demographic and socio-economic indicators of Latvian municipalities, selecting the most relevant data for further analysis in light of the current demographic problems.

Specialised literature, as well as policy documents (e.g. see Zvidrins, 2012 and Eglite, 2008) point out that the key problems of current demographic development in Latvia are:

- emigration (both long and short-term);
- low birth rates; and
- population ageing.

Furthermore, a closer review of the available statistical data and recent reports (SRDA, 2012) shows that the abovementioned issues are particularly critical in the rural areas and/or borderland local municipalities.

With this in mind, in this study, the author primarily focuses on the available migration (domestic and foreign), fertility and population age structure indicators, which are obtained from the most recent (2011) population and housing census results, as well as publications and reports developed by State Regional Development Agency and Office of Citizenship and Migration Affairs. On the other hand, the ethnic composition, marital status, net average wages of population, municipal spending on social support per capita, unemployment rates, and other social and economic indicators have been selected to play the role of explanatory variables.

Regrettably, there is a limited amount of data generally available for the municipal level, which significantly limits the available choice of indicators and factors for the study. Significant problems are posed by the short-term unregistered migration and fertility measures. The first one is addressed by comparing the population data of the 2011 census (*CP*) with the number of registered population in the municipality (*RP*). The resulting ratio of the missing registered population (*MRP*) may be accepted as a crude estimation of the number of short and mid-term migrants currently located in various regions or other countries.

$$MRP = \frac{RP - CP}{RP} \quad (1)$$

As regards fertility, the issue is solved by calculating an estimated general fertility rates from the available population data and information on live births provided by the Central Statistics Bureau of Latvia. The ratio of live newborns (data for 2012) per woman in the 15–49 age group (data for 2011) in each municipality is multiplied by 1000, thus producing a sufficiently effective indicator for the general fertility rate (GFR).

Other indicators under study, e.g. the share of population below working age (0-14 years) or registered net migration are either obtained from the available datasets or recalculated to make them comparable between municipalities (i.e. share of total, share per capita etc.).

Limitations of classical regression models for policy impact assessment

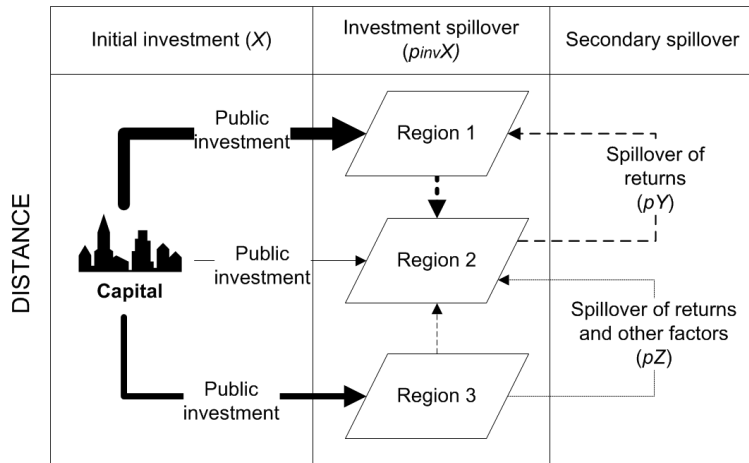
A conventional approach to examine the impact of the particular policy instrument or socio-economic factor is to estimate a simple econometric model, such as the one shown below:

$$Y = \alpha + \beta X + \gamma Z + \varepsilon \tag{2}$$

where vector Y denotes an indicator under study, vector X stands for the instrument/investment/factor being assessed and matrix Z – for other factors and characteristics instrumental in explaining the variance of Y . The significance of estimated coefficient β is then assumed to be the impact of the factor under study.

This approach can be easily exposed to criticism from both logical and spatial perspective for not considering the effect arising from the interactions with the neighbouring territorial units and the spillover effects of the factor X from/to them. Even the spatial distribution of the indicator Y itself is capable of creating additional positive or negative effect through agglomeration of resources as well the unexpected externalities caused by other forms of interaction (Parr, 2002).

Figure 1 below has been developed in order to illustrate the shortcomings of a classical regression model in the context of measuring effects of some particular factor/investment in the real-world regions.



Source: author's elaboration

Figure 1 **Schematic representation of the spatial spillover effects of public investment between regions**

Figure 1 shows some form of public investments (vector X) into three regions, where Region one is getting the biggest share, Region 2 – the smallest and Region 3 – medium amount. First of all, a classical model (2) would ignore the neighbourhood structure of the regions, as well as geographical/economic distances between them. The proximity of the units under study should be captured in a model as these are not fully-independent and isolated territories, but rather just parts of a single social and economic system or network.

Second, the classical regression approach only estimates the direct impact of the investment (1st column of Figure 1), ignoring the effects of later interactions (dashed lines). For example, on the first level (2nd column), the received investment itself will have some rate of dispersion into the neighbouring regions through every-day economic interactions like wages, procurements etc. and, therefore, besides the local impact parameter (β) should have some associated spatial dependency parameter (p_{inv}) often also denoted as theta (θ). On the second level (3rd column), the returns from the local investment and its spatial spillovers, as well as other production factors will not necessarily remain only in their respective regions, but rather tend to agglomerate around the strongest region, as suggested by contemporary theories of economic development like the Growth Pole theory or the New Economic Geography theory.

This secondary spillover (commonly known in literature as the spatial lag (Ward M. D. & Gleditsch K. S., 2008)) can be captured as the regression parameter (ρ) of the spatially weighted mean of the same endogenous parameter in the surrounding regions (ρWY), and, if needed – of all other factors (ρWZ). In both cases, W denotes a spatial weights matrix capturing the geographical / geometrical / economical neighbourhood structures of the units under study.

In other terms, in the abovementioned example, each of the three regions receives a noticeable positive or negative additional effect on the indicator under study through the spatial interactions with other two regions. The resulting improvement of the local indicator Y_i in the particular region has the further effects on the returns of the investments X in the other two. Ignoring such secondary effects, classical methods, obviously, omit an important impact determinant.

Exploratory analysis – testing key indicators for spatial autocorrelation

Before proceeding with the modelling of spatial spillovers, it is both necessary and useful to conduct a simple, but effective exploratory analysis of the available regional data using the global and local spatial autocorrelation testing tools, which will allow to either accept or discard the hypothesis that municipalities with similar indicator values are more spatially clustered than would normally be expected.

Here, the analogy may be drawn with the temporal autocorrelation in the time-series analysis. Similar previous studies suggest that typically, when most social and/or demographic phenomena are mapped, locational proximity usually results in some level of value similarity. High values tend to be located near other high values, while low values tend to be located near other low values, thus exhibiting positive spatial autocorrelation (e.g. see Voss P. R., et al., 2006).

The most commonly used statistical test for estimating the levels of global spatial autocorrelation is the Moran's I test.

The Global Moran's I test in its generalised form can be defined as follows:

$$I = \frac{n \sum_i \sum_j w_{ij} (x_i - \mu)(x_j - \mu)}{S \sum_i (x_i - \mu)^2} \quad (3)$$

where n is the number of observations (in this case, $n=119$ municipalities and cities) indexed in the matrix notations by rows i and columns j , while x stands for any variable of interest (with mean μ), and w_{ij} is a corresponding element of a matrix of spatial weights W . S is a scaling constant produced by the sum of all weights:

$$S = \sum_i \sum_j w_{ij} \quad (4)$$

For testing the hypothesis on present spatial autocorrelation of the particular indicator, the test statistic is compared with its theoretical (expected) mean, which would appear under conditions of fully random spatial pattern of values.

In order to capture the general spatial relations of the observed territorial units, a simple square ($n = 119$) spatial weights matrix (W) capturing the spatial structure was created, containing the inverse values of geometric distances between the geographical coordinates of the centres of the 119 Latvia's local municipalities and Republican cities. Similar matrices representing other forms of geographical or economic distances (e.g. driving times or flows of trade intensity etc.), or the connectivity matrixes representing the neighbourhood structure of the units with common borders may also be created in order to better represent the relations between territories under study (Matthews S. A., Parker D. M., 2013).

Using the available spatial weights matrix, it is now possible to perform a series of Global Moran's I spatial autocorrelation tests for any of the observed indicators. For the purpose of this study, this test is applied to several demographic indicators of Latvian municipalities described in the previous sections (see Table 1 below).

Table 1 Results of the Global Moran's I test for selected demographic indicators of Latvian municipalities in 2011

Variable	I statistic	Expectation
Missing registered population (<i>MRP_2011</i>)	0.26194	-0.00847
Share of economically active population (15-64) (<i>empl_active_pop_2011</i>)	0.22045	
Share of females in reproductive age (<i>pop_2011_fem_15-49</i>)	0.20557	
Share of population below working age (<i>pop_2011_0-14</i>)	0.19703	
General fertility rate (<i>GFR_2011</i>)	0.06890	
Registered net migration as % of population (<i>migration_2011_total_reg</i>)	-0.01136	

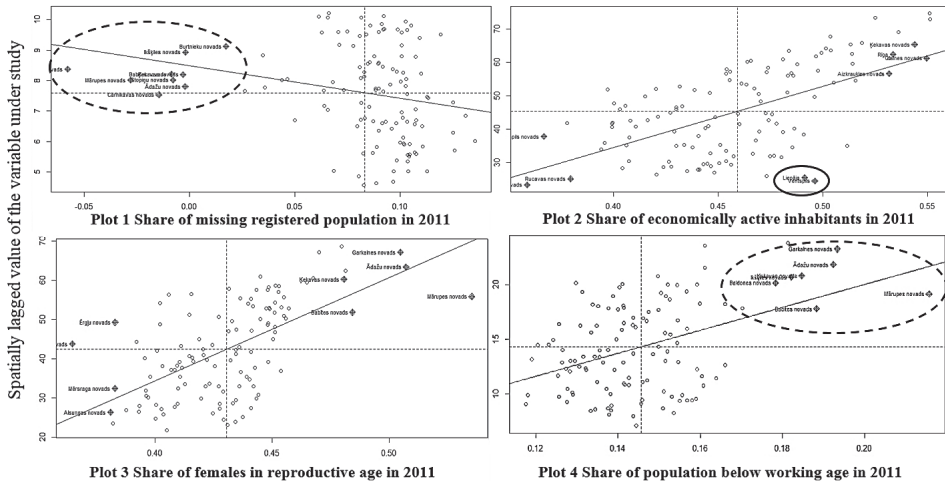
Source: author's calculations based on the Central Statistics Bureau data

From the test results it is possible to see that the Moran's I values are positive for all of the observed indicators except the registered net migration. Significance of the values however is a different issue. It is obvious that Moran's I values are significant for the first four indicators: missing registered population, share of population below working age, share of females in reproductive age and share of economically active population. While the General fertility rate and registered net migration both show very insignificant differences from the expected mean.

This suggests that the last two indicators can be analysed using classical models, with no risk of missing the spatial spillover component. From the practical point of view, this also means that the uneven distribution of natural population increase in the entire country, so often mentioned in the literature and official publications (SRDA 2013), is not caused by spatial variance in the fertility rates, but rather by the significant difference in the current female population structure in the regions (i.e. share of females in their reproductive age). Parallel conclusion may be drawn for the migration numbers, where registered migration shows zero spatial autocorrelation, while the unregistered migration (in our case – share of missing registered population) shows an evident spatial clustering.

When looking for the more precise and less generalised spatial autocorrelation analysis tools, the local Moran's I testing, and particularly – Moran Plots are the first things that come to mind. Luc Anselin (1999) explains, that Moran's I statistic for spatial autocorrelation can be defined as a regression coefficient in a bivariate spatial lag scatter plot. That is – in a scatter plot with the spatial lag on the vertical axis and the value at each location on the horizontal axis. In this case Global Moran's I calculated value corresponds to the slope of the regression line through the points. The further evaluation of these local associations is done by the decomposition of scatter area into four quadrants, each representing different type of spatial association.

With the help of Moran Scatterplots that show the individual Moran's I values for each municipality included in the global Moran's I test, it is possible to continue spatial analysis in search of local spatial dependencies and anomalies (Anselin L., 1995). Figure 2 below combines Moran Scatterplots for four of the previously mentioned indicators, which have shown a significant positive spatial autocorrelation, highlighting outlying observations, hot/cold spots and trend-setters in the local spatial structure.



Source: author's elaboration based on the Central Statistics Bureau data

Figure 2 **Moran's scatter plots of the selected indicators in Latvian municipalities**

Local Moran's I evaluation for these indicators reveal, that for two of them (Share of missing registered population and Share of population below working age – Plots 1 and 4) spatial autocorrelation pattern is not as strong as expected from the global test results. In both these cases the slope of the trend line (global Moran's I) is mostly defined by the uncharacteristic values shown by the municipalities located in the direct area of influence of the Riga city (dashed circles), while all other observations are distributed quite randomly through all four quadrants of the plot. It is needed to note, that the Moran Scatterplot for the Share of missing registered population appears inverted (negative trend slope) due to the nature of the indicator (i.e. less missing population – better result).

The other two indicators (Share of economically active inhabitants and Share of females in reproductive age – plots 2 and 3 respectively), demonstrate a classic case of agglomerative spatial structure (see Krisjane, 2005) with extremely high values tending closer to each other (and generally concentrate around Riga) and extremely low values being pushed to periphery. All other observations are distributed more or less gradually along the trend lines. The similarity of these two indicators is not surprising as they both are partially dependant on the overall

population age structure. Two interesting irregular points with high indicator values and extremely low spatial dependency can be found in Plot 2 (solid circle). These represent the cities of Ventspils and Liepāja, which unlike Riga city; apparently have very little spatial population spillover effect on the surrounding municipality. In other terms, unlike in case of Riga, active population of these coastal cities prefer to settle within the city limits and do not tend to reside in the suburban areas at all.

To conclude the findings so far, the global tests indicate spatial autocorrelation of the parameters associated with the population age structure and economic activity, while such indicators as Long Term Registered Migration and General Fertility Rate appear to be distributed evenly throughout the country. Local tests show that the spatial clustering of indicators representing the share of population below working age and short-term emigration is not as common in the whole country as first expected, and is largely caused by the socio-economic impact of the Riga city. Some hot and cold spots were found for all indicators with significant spatial autocorrelation. The municipalities in comparatively worse situation are mostly located on the periphery – close to the borderland, as expected, while high values tend to concentrate within close proximity to Riga. Surprisingly, other big and economically developed cities have shown little to none spatial autocorrelation of some key indicators with their neighbouring municipalities. All this suggests the possibility that different forms of socio-economic factors, policy instruments and/or aid measures in Latvian municipalities may indeed have different tendencies towards spatial spillover.

Capturing spatial spillovers

The spatially adjusted empirical model may be constructed on the basis of the classical model in combination with the framework of spatial econometrics concepts as discussed in the previous sections. In addition, for the construction of the model it is useful to review the available studies applying the spatial econometric models for the analysis of social or economic processes. Considering the multi-level structure of the expected spatial interactions (Figure 1), the Spatial Durbin Model (SDM) has been chosen. Good examples of the potential applications for such type of spatial models may be found in various fields of study, for example, Tran and Pham (2013) use the SDM method to estimate the spatial spillovers of foreign direct investment, while Autant-Bernard and LeSage (2009) discuss the potential spatial knowledge spillover model from a non-spatial model, arriving at a conclusion that SDM is the most relevant model for examining spatial spillovers.

In general, SDM incorporates the properties of both the Spatial Lag and Spatial Error Models (SLM and SEM), which are widely discussed in literature (Ward M. D., Gleditsch K. S., 2008), and therefore, captures the spatial lag parameter of the dependent and independent variables alike on the right hand side of the equation.

The simple linear SDM model elaborated from the classical model (2) can be described as follows:

$$Y = \rho WY + \beta X + \theta WX + \varepsilon \quad (5)$$

where Y is the vector denoting the indicator under study in the regions, W is weighting matrix (discussed above), and ρ is a spatial lag parameter capturing the secondary spillover of the outcome variable (Y) from/to the neighbouring regions. Further, X is a matrix of explanatory variables, β stands for a regression parameter measuring primary effects of the explanatory variables within the target region, and ε stands for error.

These are all the standard notations found in a basic SLM model. The θ component, however, is introduced in the SDM in order to expand the equation and accommodate the spatially lagged explanatory variables. It is the spatial lag parameter describing the effect of the explanatory variables of the surrounding regions on the indicator in the observed region (e.g. primary spillover).

Table 2 below shows examples of the SDM modelling results for such indicators as share of economically active inhabitants (*empl_active_pop_2011*), share of population below working age (*pop_2011_0-15*) and GFR in 2011. For the purpose of this study, socio-economic factors like ethnic composition of population (share of ethnic Latvians per other nationalities), rate of registered marriages per total number of families, unemployment levels, average net wages, as well as municipal budgetary spending on social protection per capita are used as the explanatory variables. In addition, in order to demonstrate the advantages of the spatial modelling approach, results produced by the classical linear model (LM) for the same variables are shown in the table and compared with the SDM outputs using the Logarithmic Likelihood values as suggested in literature (e.g. Ward M. D., Gleditsch K. S., 2008).

The results presented in the table above only confirm the previous assumption on the random distribution and equally low levels of the GFR throughout the entire territory of Latvia: the SDM did not show any significant impact factors for this indicator, while the linear model only marginally highlighted the municipal social protection expenditure.

For the share of active population, the SDM model has highlighted average net wages (both local and spatially lagged from the neighbouring regions) as the key explanatory variable, while spatially lagged unemployment has demonstrated a small, but a rather significant inverse spatial spillover effect. This can be explained by the fact that unemployment in neighbouring regions is driving economically active population towards the local development centres or simply the regions where there are more available jobs. The ethnic composition in this case should not be taken into account as it is just a representation of the differences in the age structure of the ethnic groups.

As regards the most important hypothesis on the spillover effects, comparing the impact of the net wages variable estimated by the SDM and LM models,

Table 2 Example of the SDM and classical Linear Model fitting results for the selected indicators of Latvian municipalities in 2011

Parameter	Spatial Durbin Model (SDM)			Linear Model (LM)		
	<i>empl_</i> <i>active_</i> <i>pop_2011</i>	<i>pop</i> <i>_2011</i> <i>_0-15</i>	<i>GFR</i> <i>_2011</i>	<i>empl_</i> <i>active_</i> <i>pop_2011</i>	<i>pop</i> <i>_2011</i> <i>_0-15</i>	<i>GFR</i> <i>_2011</i>
Rho (ρ)	-0.00486	-0.00890	-0.01303	-	-	-
Intercept	0.39405	0.13328	29.88052	0.44290	0.10520	31.13836
Spat. lagged intercept	-0.01431	0.00156	1.85715	-	-	-
Share of Latvians (β_1)	-0.06866**	0.01486	2.99226	-0.07065**	0.00621	5.21212
Spat. lagged share of Latvians (θ_1)	0.00574**	-0.00110	-0.11982	-	-	-
Rate of registered marriages (β_2)	0.07072	0.01798	10.23354	0.01510	0.04753	3.24496
Spat. lagged share of registered marriages (θ_2)	0.00585	-0.00063	-2.02353	-	-	-
Unemployment (β_3)	-0.11229	-0.05141	-1.83002	-0.18350*	-0.08762**	-26.55611
Spat. lagged unemployment (θ_3)	0.01532*	-0.00248	-0.96088	-	-	-
Net wages (β_4)	0.00025***	0.00006	0.02139	0.00039***	0.00012***	0.03432
Spat. lagged net wages (θ_4)	0.00002***	0.00001	0.00101	-	-	-
Social prot. (β_5)	-0.00011	0.00004*	-0.02037	-0.00011	-0.00006*	-0.01626*
Spat. lagged social prot. (θ_5)	-0.00000	0.00000	-0.00284	-	-	-
Logarithmic likelihood	264.9	355.9	-395.4	249.9	345.4	-400.4

Significance codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Source: author's calculations based on the Central Statistics Bureau data

one may observe that the $\beta_4 = 0.00039$ is actually spatially decomposed into a local effect of $\beta_4 = 0.00025$ and the average spillover effect of the neighbouring municipalities of $\theta_4 = 0.00002$.

For the population below working age, the results are similar to the average net wages of parents having the decisive effect on the indicator. Spatial spillover of the net wages is also present, which is not surprising, especially when analysing these results in the cross-section with the data on population employed outside of their respective municipalities. Social protection expenditure, as expected, shows zero spatial spillovers, as most social support measures are provided only to the population registered in the particular municipality, thereby preventing the network effects.

The difference in the log-likelihood values of the model pairs is proportional to the previously determined levels of spatial autocorrelation of the indicators under study; however, it may not be considered particularly significant in all three cases, as it is small enough to be caused by a difference in the number of the degrees of freedom for each given pair of models. This, in turn, means, that in the given cases, SDM models do not necessarily provide a better model fit, but rather should be used as means to analyse spatial spillovers of the explanatory factors.

CONCLUSIONS

The spatial econometric approach can be very useful in the exploratory socio-economic and demographic data analysis, as well as the empirical studies devoted to regional development and regional policy issues. With the help of the empirical example employing limited set of the demographic indicators and their potential explanatory variables, the Spatial Durbin Model has been proven as a feasible and reliable tool for measuring spatial spillovers of the exogenous factors in the basic regional demographic processes.

Several obvious empirical conclusions may also be drawn from the results of the analysis.

First, a positive global spatial autocorrelation was found for all of the observed indicators of Latvian municipalities except the registered net migration. Moran's I values were determined as significant for such indicators as missing registered population, share of population below working age, share of females in reproductive age and share of economically active population. General fertility rate and registered net migration, however, have shown very little deviation from the expected mean values. Therefore, the observed uneven distribution of natural population increase in the entire country is not caused by spatial variance in the fertility rates, but rather can be attributed to the significant differences in the current female population structure of the regions (i.e. share of females in their reproductive age). Analogous results have been obtained for the migration numbers – the registered migration shows zero spatial autocorrelation, while

the presumed unregistered migration indicator demonstrates an evident spatial clustering.

Second, local spatial autocorrelation analysis, employing graphical tools, has indicated that for some of the measured indicators (e.g. share of missing registered population) the spatial autocorrelation pattern is not as strong as expected from the global test results. In such cases the slope of the trend line (global Moran's I) has been primarily influenced by the anomalous values shown by the municipalities located in the direct area of influence of the Riga city. Other indicators (e.g. share of economically active inhabitants) have demonstrated a classic case of agglomerative spatial structure with high values tending closer to each other and extremely low values being located separate from each other on the periphery.

Third, from the modelling results, the overall influence of spatial dependences does not seem to be high with the exception of the economic explanatory factors like average net wages and unemployment levels. For example, the share of active population is significantly influenced by the average net wages (both local and spatially lagged from the neighbouring regions). Spatially lagged unemployment has demonstrated a small, but rather significant inverse spatial spillover effect, explained by the fact that unemployment is driving economically active population to the regions with more employment opportunities.

Finally, comparison of the impact levels of some explanatory variables of the economic nature (e.g. net wages), modelled by both SDM and LM models, allows to observe that the high regression parameter values (β) in the LM model may actually consist of both local (B) and spilled-over (θ) effects arising from the interactions with neighbouring municipalities.

In addition, this leads to the conclusion that from the methodological perspective, it would be highly useful to test the spatial autocorrelation of the indicators under study using several different types of the spatial weights matrixes, including row-standardised neighbourhood and actual travel time matrixes. Such an approach would allow one to determine not only the global/local autocorrelation levels, but also identify the spatial factors instrumental in the propagation of inter-regional spillover effects (e.g. geographical proximity versus economic interconnectivity etc.).

REFERENCES

- Anselin, L., 1995. *Local indicators of spatial association – LISA*. Geographical analysis, 27(2), 93-115.
- Anselin, L., 1999. *Interactive techniques and exploratory spatial data analysis*. Geographical Information Systems: principles, techniques, management and applications, 1, 251-264.
- Autant-Bernard, C., & LeSage, J. P., 2011. *Quantifying knowledge spillovers using spatial econometric models*. Journal of Regional Science, 51(3), 471-496.

- Boarnet, M. G., 1998. *Spillovers and the locational effects of public infrastructure*. Journal of Regional Science, 38(3), 381-400.
- Case, A. C., Rosen, H. S., & Hines Jr, J. R., 1993. *Budget spillovers and fiscal policy interdependence: Evidence from the states*. Journal of public economics, 52(3), 285-307.
- Central Statistics Bureau of Latvia [CSB] database. Available at: <http://dati.csb.gov.lv> [Accessed 05.11. 2013].
- Chi, G. & Zhu, J., 2008. *Spatial Regression Models for Demographic Analysis*. Population Research and Policy Review (Part II –Spatial Demography, February 2008), 1(27), 17-42.
- Eglite, P., 2008. *Nedeklarētās izceļošanas sekas un to rosinātā rīcība*. Darbaspējīgo skaita mazināšanās Latvijā un iespējamie risinājumi. Apcerējumi par Latvijas iedzīvotājiem, No. 13. Rīga: SIA LZA Ekonomikas institūts, 16-14.
- Krisjane, Z., 2005. *Latvia: a centre oriented country in transition*. Muller B., Finka M., Lintz G. (eds.). Rise and decline of industry in Central and Eastern Europa. Berlin, Heidelberg, New York: Springer, 131–153.
- Matthews, S. A. & Parker D. M., 2013. *Progress in Spatial Demography*. Demographic Research, 28(10), 271-312.
- Moreno, R., & Trehan, B., 1997. *Location and the Growth of Nations*. Journal of Economic Growth, 2(4), 399-418.
- Parr, J. B., 2002. *Agglomeration economies: ambiguities and confusions*. Environment and Planning. A, 34(4), 717-732.
- State Regional Development Agency [SRDA], 2013. *Report 'Attīstības centru ietekmes areālu noteikšana un analīze. Plānošanas reģionu, republikas pilsētu un novadu pašvaldību attīstības raksturojums'* (In Latvian). Available at: http://www.vraa.gov.lv/uploads/documents/petnieciba/petijumi/regionu_attist_final_2012.pdf [Accessed 25.02.2014]
- State Regional Development Agency [SRDA], 2012. *Report 'Development of Regions in Latvia in 2011'*. Available at: http://www.vraa.gov.lv/uploads/Development_of_Regions_in_Latvia_2010_web_ENG.pdf [Accessed 25.02.2014]
- Tran, T. T. & Pham, T. S. H., 2013. *Spatial Spillovers of Foreign Direct Investment: The Case of Vietnam*. Vietnam Development and Policies Research Center paper No. 12.
- Vaya, E., Lopez-Bazo, E., Moreno, R., & Surinach, J., 2004. *Growth and externalities across economies: an empirical analysis using spatial econometrics*. Springer: Berlin Heidelberg, pp. 433-455.
- Voss, P. R., White, K. J. C. & Hammer R. B., 2006. *Explorations in spatial demography*. In Population change and rural society. Netherlands: Springer. pp. 407-429.
- Ward, M. D. & Gleditsch, K. S., 2008. *Spatial Regression Models*. Thousand Oaks: Sage Publications.
- Zvidriņš, P., 2012. *Demographic development in the Baltic Sea Region*. Latvijas Zinātņu Akadēmijas Vēstis. A 66, (5/6), 49.

CLIENT PERCEIVED PARTICIPATION VALUE: CONJOINT ANALYSIS

MILDA DAMKUVIENĖ
SIGITAS BALČIŪNAS
EVANDŽELINA PETUKIENĖ

Abstract

This article reports the results of the application of *conjoint* analysis to derive the value of client-perceived participation. The article aims at answering the following questions: how clients evaluate their participation in value creation processes? What dimensions of client perceived participation value are of the most importance for clients in different services? Does the perception is different in various groups of clients? A conjoint analysis is employed to assess the trade-off decision between participation benefits and costs of each client and allow one to measure the willingness to give up something for gaining something in participation situations when the client has to make a choice considering several factors at one time, but not each single factor separately. The situations, representing two types of services (car repair services and cafe/restaurant services) were modelled. The client's participation in value creation processes was described in the terms of its attributes: *emotion (self-feeling)*, *social (doing good to others)*, *time*, *price* and *quality* and their levels (benefits and costs). Conjoint analysis showed that within the all participation benefits, as well as costs, *quality* and *emotions* dominate. The research revealed that the client perceived participation value depends upon the type of service (*quality* dimension dominates in car repair services while in café/restaurant services, *emotional* and *quality* components stand together at the same level of importance). *Younger clients* and clients who use car repair services *periodically* give higher importance to *emotional benefits* and *costs*, people who use the service rarely higher rated *quality* dimension.

Keywords: Lithuania, client perceived participation value, client perceived participation benefits and costs, conjoint analysis

JEL code: M31 Marketing

INTRODUCTION

It is commonly agreed that creating superior value for clients represents the key element in ensuring an organisation's market success (Zeithaml, 1988; Abu Bakar et al., 2013). Offering better value than competitors helps to ensure company's market success, long term survival create a sustainable competitive advantage (Woodruff, 1997; Zeithaml, 1988; Abu Bakar et al., 2013). Client perceived value (i.e. value to the client) has become a central concept within

marketing and customer behaviour research (Woodruff and Gardial, 1996; Zeithaml, 1988, Holbrook, 2006). Researchers emphasise that the value is always individually perceived and determined by the client (Vargo and Lusch, 2004, 2008). The importance of the perceived value concept is recognised by the American Marketing Association, which has integrated “customer value” into the definition of marketing. According to the widely recognised Service Dominant Logic (S-D logic), value is created collaboratively in interactive configurations of mutual client – organisation exchanges (Vargo and Lusch, 2004, 2008, Vargo, Maglio and Akaka, 2008). A client as an active participant and collaborative partner co-creates value with the organisation through participation in the various value processes. A service-dominant logic emerges as a mind-set that has a revised logic focused on intangible resources, the co-creation of value, and relationships. Following S-D logic, the organisation cannot deliver value to the client, but only offer value propositions, and the client is always a co-creator of value and therefore a client’s value-creation processes and resources affect the success of an organisation’s value proposition. Given this orientation, the clients themselves have vital roles to play in creating service outcomes, (i.e. perform certain activities that transform their own end states). The client’s inputs can include information, effort or physical possessions.

Since the context of value creation is not only within the organisation’s control, business models for value co-creation present itself as a major challenge in designing and managing service systems. Marketing needs a richer base of knowledge exploring how customers perceive, think about and engage in value processes (Woodruff and Flint, 2006). It is important to determine what customers want, what job they need to get done, and what barriers they face. Understanding client perceived participation value is of high importance, as it helps to predict clients’ behaviours and intentions toward the organisation in future (Arvidsson, 2006; Cronin et al., 2000; Oh, 2003; Parasuraman and Grewal, 2000; Bolton et al., 2000). For the value co-creation processes to be meaningful and manageable, organisations need to know what it is they should manage. Based on client data, organisations should then refine their value creation strategy to provide value along the dimensions of value that clients identify as important to them (Shanker, 2012).

Despite the fact that value has become the central concept in scientific research, there are few studies that focus specifically on client perceived participation value. The majority of existing empirical research on customer value has been oriented toward the assessment of how customers perceive value of the service or consumption experiences of goods (Babin et al., 1994, Cronin et al., 2000; Sweeney and Soutar, 2001, Fontaine and Letaifa, 2012). The authors’ earlier research (Damkuvienė et al., 2012) was focused on revealing client perceived co-creation value dimensions found in the scientific literature. The authors adopted the framework of *tangible* and *intangible* co-creation value perspective (*tangible costs*: money, time, space, material marketplace objects; *intangible costs*: loss of freedom, energy loss, learning efforts, negative emotions, burden of

responsibility; *tangible benefits*: economic, individualisation, control over desired outcomes; *intangible benefits*: social, psychological-emotional (Damkuvienė et al., 2012). In the aforementioned article, the authors concluded that before making a decision about participating co-creation behaviour the client is taking into account all of the factors that are important to him, that is, making a trade-off between perceived participation costs and perceived benefits. The difference of this evaluation may be positive, resulting in customer perceived value, or negative, resulting in customer perceived worthlessness (Damkuvienė et al., 2012).

The second study (see Balciunas et al., 2013) was carried out on the basis of inductive approach (when moving from specific observations to broader generalisations) with the aim to reveal the model of client perceived participation value that reflects the dimensions of client perceived participation value. The model derived from the analysis of individual cases (focus group discussion). The aforementioned study supported the four-dimensional conceptualisation of client perceived participation value: Quality, Price, Knowledge, Emotions. The authors stated that a bundle of costs and benefits from these value dimensions are incorporated into the clients' overall participation value judgement suggesting that client perceived participation value is the overall individual perception which comes from the unique combination of various positive and negative perceptions (benefits, costs) of participation experiences (Balciunas et al., 2013).

The aim of this article is to reveal the expression of dimensions of the client perceived participation value in services by using conjoint analysis. A conjoint analysis is employed to assess the trade-off decision between participation benefits and costs of each client. Conjoint analysis will allow the authors to measure the willingness to give up something for gaining something in participation situations when the client has to make a choice considering several factors at one time, but not each single factor separately.

The objectives of the article:

1. To assess the relative importance of the dimensions of client perceived participation value.
2. To estimate if the relative importance of the dimensions of client perceived participation value differ in different services.
3. To assess client perceived participation benefits and costs in various services.
4. To reveal how the perception of participation benefits and costs varies among the client groups with different demographic features and different experience of using the service.

The article aims at answering the following questions: how clients evaluate their participation in value creation processes? What dimensions of client perceived participation value are of the most importance for clients in different services? Does the perception is different in various groups of clients?

The aim of the analysis lies in determining the suitable “features” of the client participation in value creation processes and eliciting the preferences of clients

that highlight the potential of client participation management. Conjoint analysis in marketing is used to analyse multidimensional factors with an aim to reveal clients' preferences. Conjoint analysis is the most popular individual-level value measurement method to determine relative impact of product or service attributes on preferences and other dependent variables (Heger, 1996).

Conjoint analysis is used in situations when there is a need to measure the willingness to give up something for gaining something else, and when the decision maker (the client) has to choose between the options with simultaneous variations of two or more attributes and this refers to several attributes (Green et al., 2004). The method is widely used in studying client preferences and attitudes towards objects when the effect of total preferences is represented by a linear combination of evaluative beliefs. From the application point of view conjoint analysis is the simulation of the customers' evaluation and selection processes.

Upon implementation of the conjoint analysis respondents were asked to assess the hypothetical situations by modelling them as the setup of experienced benefits and costs upon participation when the client has to make a choice considering several factors at one time. The research analyses the attributes that are taken into account by clients while estimating the participation in value creation processes as an option of their future participation behaviour.

The situations were modelled having in mind the highest client participation level when he/she indulges into the value creation activities therefore making an impact on overall organisation's performance as well as competitiveness.

The situations, representing two types of services (car repair services and cafe/restaurant services) were modelled. Car repair services represented possession processing (Lovelock and Yip, 1996) services when service is directed at client's physical possessions (a car), cafe/restaurant services fall into category of people processing services where services are directed at a client.

Respondents were given descriptions of situations and asked which of the given situations would encourage them to participate in the value creation processes – to initiate the discussion or conversation with an administrator or with service personnel, and to make suggestions for the overall value improvement.

The client's participation in value creation processes was described in the terms of its attributes. The authors described the client participation as the bundle of attributes: these are the characteristics which are perceived by the clients during the process of participation in value creation. Five different attributes or possible situations of client participation in value creation processes were chosen, each with two or three possible options (levels): *emotional (self-feeling)* (3 levels), *social (doing good to others)* (2 levels), *time* (3 levels), *price* (3 levels), and *quality* (3 levels). These attributes and their levels (benefits and costs) were determined according to the dimensions of client perceived participation value, found in the previous studies (see Damkuvienė et al., 2012; Balciunas et al., 2013). Client perceived participation benefits and costs indicated levels of different representations

(characteristics) of each attribute. In this study, the level a priori meant a “better situation” (benefit), a neutral position or a cost. This approach corresponds to the position of Heinonen (2004), Komulainen et al. (2005) who offer to conceptualise the value as the assessment of some appropriate features, linked with the analysed object where some appropriate feature may get values of benefit as well as cost.

The selected participation attributes and their levels defined 162 situations (combinations) that presented a fraction of all possible participation situations. With SPSS Conjoint by using Orthoplan the number of hypothetical situations was reduced to 16. Each situation was encoded in words and pictures with the aim of enhancing the clarity and printed in a separate card. The respondents were asked to sort the cards from one to sixteen selecting the most preferred combination of attributes (i.e., the situation that is most encouraging the participation) in the first place. This ranking is assumed to reveal the clients’ priorities and preferences of the participation situations.

RESEARCH RESULTS AND DISCUSSION

Table 1 describes demographic characteristics of the sample. In total, 226 respondents participated in the study; 58% of the sample was female and 42% was men. The survey was conducted during May–June, 2013.

Table 1 Description of the Sample

Characteristics		Type of the service		Total
		Cafe/restaurant services (N = 109)		
Car repair services (N = 117)				
Gender	Men	51.6%	69.1%	59.2%
	Women	48.4%	30.9%	40.8%
Age	18–25	57.3%	39.4%	49.5%
	26–35	17.7%	18.1%	17.9%
	36–45	17.7%	23.4%	20.2%
	46–55	4.8%	13.8%	8.7%
	Over 56	2.4%	5.3%	3.7%
Place of residence	City	67.7%	78.7%	72.5%
	Town	18.5%	11.7%	15.6%
	Village	13.7%	9.6%	11.9%

The part-worth of the abovementioned attributes were measured and clients’ preferences were modelled as trade-offs among multi-attributive alternatives. It is assumed that the total utility of a client is a function of part-worth utilities (Harrison et al., 1998).

To quantify the total impact an attribute has on the overall evaluation of participation, the attribute's relative importance was calculated by considering the attribute's utility ranges. An attribute's utility range is the difference between the highest and the lowest estimated part-worth utility of its levels. The utility ranges are summed across all attributes and the perceptual contribution of each attribute to this sum is calculated. Attribute importance specifies the relative importance of the attribute in client decision-making (in this study, client perceived participation value as the basis for willingness to participate in future value creation processes). The relative importance of attributes of client participation in value creation processes are provided in the table 2.

Table 2 **Relative importance of the attributes of client participation in value creation processes**

Participation attributes	Total relative attribute importance	Car repair services	Cafe/restaurant services
Emotion	23.8	21.2	27.2
Social	8.1	7.1	9.4
Price	17.9	16.7	19.6
Time	19.0	19.6	18.2
Quality	31.2	35.4	25.6
Model fit values			
<i>Pearson's R</i>	0.99*	0.99*	0.99*
<i>Kendall's tau</i>	0.92*	0.92*	0.92*

* $p < 0,001$

The model had a good fit based on the correlation coefficients and p value ($p < 0,001$). The statistics – Pearson's R (0.99) and Kendall's tau (0.92) that depicts the correlation concerning the observed and estimated preferences are deemed statistically significant.

The highest value, if compared to other attributes, was indicated in the *quality* component (31.2%), the lowest – the *social* component of participation value (8.1%). The research revealed relatively high importance of the *emotional* component of participation value (23.8%), almost 6 percent points more if compared to the *price* component.

The attribute preferences differ in the analysed service types. The most preferred attributes of participation in value creation processes for the clients of car repair services are *quality* (35%) and *emotions* (21%). *Price* and *time* attributes are in third place in the clients' priorities, and differences of their estimations are not statistically significant. When comparing preferences of attributes of participation in car repair and café/restaurant services, a reverse situation is observed: *price* is more important than *time* for clients of café/restaurant services.

In the case of car repair services, *time* factor is slightly more important than *price*. *Emotions* and *quality* have a similar importance for the clients of both services.

Within the attributes, the part-worth utilities of each attribute were also investigated. When assessing the utility of every level of every attribute the effects-coded model was applied, meaning that utilities have an average value of zero for each attribute. Because the zero point is the average, it can be claimed that any level above the zero line is preferred over the average, while those below the line are less preferred.

Table 3 presents the relative importance of each level of each attribute detailing differences between the perceived participation benefits and costs in services of different type.

Table 3 Client preferences for participation benefits and costs according to the service type (participation attribute levels), scale of intervals

Attribute	Level	Car repair services		Car / restaurant services		ANOVA test	
		Utility	Std. Error	Utility	Std. Error	F value	p
Time	Saved time	1.25	0.26	0.80	0.22	3.6	0.06
	No time saving or loss	-0.41	0.30	-0.16	0.26	1.3	0.26
	Lost time	-0.84	0.30	-0.64	0.26	1.2	0.28
Emotion	Positive emotions	1.21	0.26	1.87	0.22	8.7	0.00
	No effect on emotion	0.08	0.30	-0.01	0.26	0.2	0.68
	Negative emotions	-1.29	0.30	-1.86	0.26	4.6	0.03
Social	Doing good for others	0.29	0.19	0.63	0.17	7.7	0.01
	No change for others	-0.29	0.19	-0.63	0.17	7.7	0.01
Price	Lower price	0.99	0.26	1.09	0.22	0.3	0.58
	No price change	-0.10	0.30	-0.45	0.26	3.2	0.08
	Higher price	-0.89	0.30	-0.65	0.26	1.3	0.26
Quality	Higher quality	2.68	0.26	1.52	0.22	19.2	0.00
	No quality change	-0.01	0.30	0.27	0.26	1.8	0.18
	Lower quality	-2.68	0.30	-1.80	0.26	9.3	0.00

When participating in car repair services clients, if compared to cafe/restaurant services, prefer *saved time*, *improved quality* and are more concerned that the offered service may be of a *lower quality* because of participation. Meanwhile, as regards participation in cafe/restaurant services, the greater importance, if compared to the car repair services, is given to the *emotional* dimension (i.e., clients give high preference to positive emotions, and it is very important for them not to experience negative emotions). The category of *doing*

good for others, expressing the altruistic participation stimulus, is more important when participating in cafe/restaurant services.

Since the levels of each attribute were selected so that they could reveal benefit, cost and neutral position, the difference between utility scores, expressing benefits (saved time, positive emotions, lower price etc.) and neutral position (no time saving or loss, no emotion change etc.) indicates the benefit score when the difference between utility scores of costs (lost time, negative emotions, higher price etc.) and scores of neutral position (no time saving or loss, no price change) – the score of costs. Therefore, one can compare participation benefits and costs, measured not only in the scale of intervals, but also in the scale of ratios where the zero value takes a neutral position on each attribute level, meaning that the client, when participating in value creation processes, does not experience any benefits and costs.

Table 4 **Client preferences for participation benefits and costs according to the service type (participation attribute levels), ratio scale**

	Attribute level	Car repair services		Car/restaurant services		ANOVA test	
		Utility	Std. Error of Mean	Utility	Std. Error	F value	p
Benefits	Saved time	1.66	0.27	0.96	0.33	2.7	0.10
	Positive emotions	1.14	0.19	1.88	0.29	5.0	0.03
	Doing good for others	0.57	0.15	1.27	0.21	7.7	0.01
	Lower price	1.09	0.18	1.54	0.28	2.0	0.16
	Higher quality	2.69	0.27	1.25	0.25	14.3	0.00
Costs	Lost time	-0.42	0.20	-0.47	0.28	0.0	0.89
	Negative emotions	-1.36	0.25	-1.85	0.34	1.4	0.24
	Higher price	-0.78	0.23	-0.20	0.28	2.7	0.10
	Lower quality	-2.67	0.28	-2.07	0.33	2.0	0.16

This calculation of participation benefits and costs by comparing utilities enables to describe the client perceived participation value according to the perceived benefits and costs. The most desirable participation benefit, if compared to the neutral position, is *higher quality* followed by experienced *positive emotions*. The highest client perceived costs are *lower quality* and *negative emotions*. When comparing the difference of preferences in separate types of services some statistically significant differences were observed: on participation in cafe/restaurant services the *positive emotions* and *doing good for others* are more important if compared to car repair services, while the benefit of *higher quality* is more preferred by the clients of car repair services. The survey has not revealed any significant differences between assessments of participation costs in services of a different type.

PREFERENCES IN CLIENT PERCEIVED PARTICIPATION VALUE AMONG THE RESPONDENT GROUPS WITH DIFFERENT DEMOGRAPHIC CHARACTERISTICS

Client perceived participation value factors were identified in regard to the demographic variables. The survey revealed statistically significant differences in client perceived participation value preferences among the groups of clients with different demographic characteristics. Age was one of the factors behind different preferences. Middle-aged clients rated *social benefit* higher than other age groups, while *quality* was more important for younger respondents (see Table 5).

Table 5 Relationships between demographic variables and client perceived participation benefits and costs (the coefficient of non-linear correlation eta)

		Car repair services			Cafe / restaurant services		
		Place of residence	Gender	Age	Place of residence	Gender	Age
Benefits	Saved Time	0.10	0.11	0.14	0.07	0.14	0.13
	Positive Emotions	0.10	0.01	0.28*	0.06	0.09	0.17
	Doing good for others	0.03	0.01	0.23	0.11	0.11	0.16
	Lower Price	0.19	0.23*	0.17	0.20	0.12	0.32*
	Higher Quality	0.10	0.02	0.27*	0.27*	0.09	0.16
Costs	Lost Time	0.12	0.06	0.24*	0.08	0.02	0.25
	Negative Emotions	0.17	0.06	0.25*	0.06	0.13	0.29*
	Higher Price	0.12	0.13	0.18	0.14	0.04	0.35**
	Lower Quality	0.10	0.10	0.24*	0.12	0.10	0.25

ANOVA test, * $p < 0.05$; ** $p < 0.01$

When assessing participation value preferences in car repair services *lower price* is more important for women than to men. Younger respondents are more sensitive to the changes in *quality*. In the case of cafe/restaurant services *price* changes are the least important to middle-aged clients. Greater preference for *positive emotions*, avoidance of *negative emotions*, greater preference for *lower price* and *higher price* avoidance was demonstrated by the group of younger respondents.

Client perceived participation value depends upon the *frequency of the service use* (see Table 7). When assessing car repair services *time* and *quality* factors are more important for clients who *use the service periodically* while *emotions* are more important for those clients who *use the service rarely*. Statistically significant links between perceived components of participation value and experience of using the service were not revealed by the survey.

The hypothesis that client perceived participation benefits and costs may correlate with the client's abilities to communicate was also tested. It was considered that this personal feature may affect the perceived value of participation. The hypothesis was not confirmed; statistically significant links of perceived benefits and costs of participation were not revealed by the survey, except the weak link with perceived costs of *quality loss* ($r = -0.18, p < 0.01$): the higher the client values his or her own communicative skills, the lower rate is given to the importance of the *quality loss*. This tendency is more obvious as regards participation in cafe/restaurant services ($r = -0.25, p < 0.02$).

CONCLUSIONS

The research results on client perceived participation value revealed that:

1. *Quality* is the top ranked dimension of the client perceived participation value. Clients clearly preferred the *quality* attribute of participation. On the other hand, a possibility still exists that the quality of service may be reduced due to the active participation. *Emotions* are the second dimension of the participation value according to importance. *Emotions* for the client are more important if compared to the *price* or *time* issues when joining in value creation processes. These factors remain in the third place of the ranking. *Social* aspects (doing good to others) are the least important for clients when participating in value creation processes. This shows that in participation activities service quality remains the key priority. The findings support the presumption that participation experiences are highly subjective and involve customers not only cognitively and behaviourally but also emotionally. Conjoint analysis showed that *quality* and *emotions* dominate within the all participation benefits, as well as costs.
2. The research revealed that the client perceived participation value depends upon the type of service. The *quality* dimension dominates in case of the car repair services, while in café/restaurant services, *emotional and quality* components stand together at the same level of importance. The *emotional* dimension is especially important in people-owned services since clients are deeper involved in the service processes, where emphasis has to be put on marketing emotional experiences (Pine and Gilmore, 1999). This is also in line with the emerging trend of the experience economy, which acknowledges that intangible elements and emotions (enjoyment, emotions, surprises, experiences of new aspects of life) play a major role in competitive advantage (Oksanen et al., 2012).
3. When comparing the client perceived participation benefits in two types of services, statistically significant differences are observed. In the case of café/restaurant services *positive emotions* and *doing good for others* is more important if compared to the client perceived participation benefits in car repair services. *Quality improvements* are more important for clients in car repair services.

There were no statistically important differences observed when evaluating costs of participation in services of a different type.

4. The perceived participation benefits and costs are mainly affected by the age of the client: *younger clients* attach higher importance to *emotional benefits* and *costs*. The ranking of client perceived participation value dimensions depends upon the frequency of service use: the *emotional* dimension is more important for people who *use the service rarely* while the dimension of *quality* – for those who *use the service periodically* (this tendency is observed in the case of the car repair services).

REFERENCES

- Arvidsson, A., 2006. *Brands: Meaning and Value in Media Culture*. Taylor and Francis: USA.
- Babin, B. J., Darden, W., & Griffin, M., 1994. Work and/or Fun: Measuring Hedonic and Utilitarian Shopping Value. *Journal of Consumer Research*, 20, pp. 644–656.
- Abu Bakar, A. R., Al Ruwais, N. M. & Othman, A. R., 2013. Customer Net Value: a Service Gap Perspective from Saudi Arabia. *Global Journal of Business Research*, 7 (4), pp. 19-33.
- Balčiūnas, S., Damkuvienė, M., Petukienė, E., Valuckienė, J., 2013. The Dimensions of Client Perceived Participation Value. *Social Research*, 4(33), pp. 119-127.
- Bolton, R. N., Kannan, P. K. & Bramlett, M. D., 2000. Implications of Loyalty Program Membership and Service Experiences for Customer Retention and Value. *Journal of the Academy of Marketing Science*, 28 (1), pp. 95-108.
- Cronin, J. J., Brady, M. K. & Hult, G. T. M., 2000. Assessing the Effects of Quality, Value and Customer Satisfaction on Consumer Behavioural Intentions in Service Environments. *Journal of Retailing*, 76 (2), pp. 193-218.
- Damkuvienė, M., Tijūnaitienė, R., Petukienė, E., Bersėnaitė, J., 2012. Customer Perceived Co-creation Value: a Synthesis of the Extant Literature. *Social Research*, 4(29), pp. 59-68
- Fontaine, R. & Letaifa, S. B., 2012. *The reasons clients change audit firms and the client's perceived value of the audit service: a qualitative study in Canada* [Online] Available at: <http://www.cifo.uqam.ca/publications/pdf/2012-08.pdf> [Accessed 08 January 2014].
- Green, P., Krieger, A., & Wind, J., 2004. *Thirty Years of Conjoint Analysis: Reflection and Prospects*. In Y. Wind, & P. Green (Eds.), *Marketing Research and Modeling: Progress and Prospects*. (117-141). Berlin: Springer Verlag.
- Harrison, R.W., Ozayan, A., & Meyers, S.P., 1998. A Conjoint Analysis of New Food Products from Underutilized Small Crawfish. *Journal of Agricultural and Applied Economics*, 30(2), pp. 257-265.
- Heger, R. H., 1996. Value Measurement for new Product Category: a Conjoint Approach to eliciting Value Structure. *Dissertations and Theses*. Paper 1305. [Online] Available at: http://pdxscholar.library.pdx.edu/open_access_etds/1305 [Accessed 08 January 2014].
- Heinonen, K., 2004. Reconceptualizing Customer Perceived Value: The Value of Time and Place. *Managing Service Quality*, 14 (2/3), pp. 205-215.
- Holbrook, M. B., 2006. *ROSEPEKICECIVECI Vs. CCV – The Resource-Operant, Skills-Exchanging, Performance-Experiencing, Knowledge-Informed, Competence-Enacting,*

- Coproducer-involved, Value-Emerging, Customer-Interactive View of Marketing versus the Concept Of Customer Value: "I Can Get It For You Wholesale"*. In R. F. Lusch & S. L. Vargo (Eds.), *The Service Dominant Logic of Marketing: Dialog, Debate and Directions* (pp. 208-223). Armonk, NY: M.E. Sharpe.
- Komulainen, H., Mainela, T., Tähtinen, J., Parhi, P. (2005). Expected, Realized and Potential Value in a New Service Setting. *Proceedings of 21st Annual IMP Conference, Dealing with Dualities*, 1-3 September 2005, Rotterdam, Netherlands: 1-19 [Online] Available at: <http://www.impgroup.org/uploads/papers/4713.pdf> [Accessed 01 February 2014].
- Lovelock, C. H. & Yip, G. S., 1996. Developing Global Strategies for Service Business. *California Management Review*, 38 (Winter), pp. 64-86.
- Oh, H., 2003. Price Fairness and Its Asymmetric Effects on Overall Price, Quality, and Value Judgements: The Case of an Upscale Hotel. *Tourism Management*, 24, pp. 397-399.
- Oksanen, J., Lammi, M., Loikkanen, T., Rask, M., Repo, P., Timonen, P., 2012. Experience Innovation Co-creating Value with Users. [Online] Available at: <http://www.vtt.fi/inf/pdf/technology/2012/T38.pdf> [Accessed 06 January 2014].
- Parasuraman, A. & Grewal, D., 2000. The Impact of Technology on the Quality-Value-Loyalty Chain: a Research Agenda. *Journal of the Academy of Marketing Science*, 28 (1), pp. 168-174.
- Pine, J. & Gilmore, J., 1999. *The Experience Economy*, Harvard Business School Press, Boston.
- Shanker, A., 2012. A Customer Value Creation Framework for Businesses That Generate Revenue with Open Source Software. *Technology Innovation Management Review*, March, 2012, pp. 18-22 [Online] Available at: <http://timreview.ca/article/534#sthash.YZmwR77G.dpuf> [Accessed 06 January 2014].
- Sweeney, J. C. & Soutar, G. N., 2001. Consumer Perceived Value: The Development of a Multiple Item Scale. *Journal of Retailing*, 77(2), pp. 203-220.
- Vargo, S. L. & Lusch, R. F., 2004. The Fours Services Marketing Myths: Remnants from a Manufacturing Model. *Journal of Service Research*, 6(4), pp. 324-335.
- Vargo, S. L. & Lusch, R. F., 2008. From Goods to Service(s): Divergences and Convergences of Logics. *Industrial Marketing Management*, 37(3), pp. 254-259.
- Vargo, S. L., Maglio, P., & Akaka, M., 2008. On Value and Value Co-creation: A Service Systems and Service Logic Perspective. *European Management Journal*, 26(3), pp. 145-152.
- Zeithaml, V., 1988. Consumer Perceptions of Price, Quality and Value: A Means-End Model and Synthesis of Evidence. *Journal of Marketing*, 52(4), pp. 2-22.
- Woodruff, R. B. & Flint, D. J., 2006. *Marketing's Service Dominant Logic and Customer Value*. In R. F. Lusch & S. L. Vargo (Eds.), *The Service Dominant Logic of Marketing: Dialog, Debate and Directions* (pp. 183-196). Armonk, NY: M.E. Sharpe.
- Woodruff, R. B. & Gardial, S. F., 1996. *Know your customer. New Approaches to Understanding Customer Value and Satisfaction*. Cambridge, MA: Blackwell Publishers.

NATURE OF TRADE POLICY BETWEEN LITHUANIA AND RUSSIA: A STUDY ON THE APPLICATION OF TRADE BARRIERS IN THE PERIOD OF 2007–2014

RASA DAUGĖLIENĖ

Abstract

Lithuania being a member of the European Union maintains very close international trade relations (based on bilateral agreements) with its immediate neighbour – Russia. The recurrent trade tensions between Lithuania and Russia inspired theoretical and empirical investigation into an acute economic and political problem. In view of that, this article addresses a research problem: What tariff and non-tariff barriers are usually applied to Lithuanian exports to Russia? The aim of this article is to explore the character of trade policy between Lithuania and Russia from the standpoint of trade barriers, which were applied starting 1998. The object of the research is tariff and non-tariff trade barriers, which are applied for Lithuania's exports to Russia. It is of key importance to stress that Russia's trade protectionist policy concerning Lithuanian products has rather the character of prohibition and power demonstration than that of internal market protection. The study is based on a theoretical analysis of economic theory in order to provide arguments for the economic benefit of removing trade barriers, as well as to systemise the structure of existing tariff and non-tariff trade barriers. This structure could be used for further analyses of recognition of trade restrictions application in other countries. The European Commission's TARIC Consultation methodology of application of trade barriers for EU's export to Russia, as well as the methodology of the World Trade Organization for trade profiles was applied for systemisation of various trade restrictions. The empirical findings reflect international trade tendencies between Lithuania and Russia in the period of 2007–2014 and tariff and non-tariff barriers, which were practically applied on export from Lithuania to Russia. The results of the comparative empirical analysis could be used for devising of future measures concerning Lithuania–Russia international trade relations.

Keywords: tariff and non-tariff barriers, export restrictions, international trade, Russia–Lithuania trade relations

JEL codes: F13, F51, O57, P16

INTRODUCTION

International trade is a very important activity for such a small European Union (EU) country as Lithuania. The growth of GDP directly correlates with the volume of exports. The EU is the biggest trade partner; however, Russia

is the second most important economic partner for Lithuanian producers. The exports to Russia accounts for 19 percent of total export. Lithuania exports to Russia mostly mineral products (mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes), foodstuffs, alcohol and tobacco products, furniture and chemicals. The specificity of Lithuania's international trade depends on the common trade policy of the EU, as well as participation in the World Trade Organization (WTO). Despite this, the country's international trade relations, including those with Russia, are based on bilateral relations. It is important to stress that these trade relations have a very complex economic and political nature. This article addresses specifically the economic aspects of trade relations between Russia and Lithuania. In view of that, the article analyses the following *research problems*: What is the scope of Lithuanian–Russian trade relations? What restrictions usually are applied to Lithuanian export to Russia? These aspects represent the *novelty of the research*. The study is focused on trade barriers (tariff and non-tariff) applied by Russia to its imports from Lithuania. Detailed facts illustrate the actual nature of international trade between Lithuania and Russia. *The aim* of the article is to investigate the specific character of trade policy between Lithuania and Russia from the standpoint of trade barriers which were applied starting 1998.

The efficiency of international trade depends on many conditions and features. One of the most important is different trade barriers (tariff and non-tariff). Bilateral trade relations between Lithuania and Russia are indisputably related to various trade barriers, especially in the sphere of food products export. This presupposes *the first task* of this article, namely, to systemise theoretical arguments in favour of the benefit of removing trade barriers and to highlight overall economic benefits from reducing trade barriers. Theoretical analysis is based on (Anderson K. and Martin W., 2012; Anderson K. and Nelgen S., 2012; Anderson K. and Strutt A., 2012; Anderson K., 2004; Anderson K., 2012; Baldwin R. E., 2004; Baldwin R. E., 2009; Francois J., van Meijl H., and van Tongeren F., 2005; Frankel, 1999; Freeman R. B., 2003; Grossman G. M., Helpman E., 1991; Hitiris Th., 1998; Lee J. W., 1995; Lejour A. M., deMooj R. A., 2001; Li Y. and Beghin J. C., 2012; Molle W., 2006; Panagariya A., 2004; Philippidis G., Resano-Ezcaray H., Sanjuan-Lopez A. I., 2013; Sanjuan A. I., Philippidis G., 2007; Rivera-Batiz L., Romer P., 1991; Sachs J. D. and Warner A., 1995; Sanjuán A. I., Philippidis G. and Resano H., 2008; Taylor M. S., 1999; Tamini L. D., Gervais J. P., 2010; Wacziarg R., 2001; Wacziarg R. and Welch K. H., 2008; Winchester N., 2009) scientific works.

Research into the nature of Lithuania–Russia trade relations seeks to systemise and classify trade barriers, which are usually applied in order to protect domestic producers from their foreign competitors. The overview of economic literature and working papers showed that classification of possible trade barriers is missing. A theoretically constructed classification could be applied in further research, which will be oriented towards the study of trade barriers application in any bilateral trade relations. This is the *second task* of this article. The *third task* is to present the main features of evolution of Lithuania–Russia international

trade relations in the period of 2007–2014. *The fourth task* is to outline the system of tariff and non-tariff barriers practically applied on exports from Lithuania to Russia.

METHODS AND RESULTS

The investigation is based on an analysis of economic theory in order to provide arguments in favour of the economic benefit of removing trade barriers, as well as to systemise the structure of the existing tariff and non-tariff trade barriers. This structure (constructed by the author) could be used for further analyses of the application of trade restrictions in other countries. The European Commission's TARIC Consultation methodology of application of trade barriers to EU's export to Russia, as well as the methodology of the World Trade Organization for trade profiles (WTO) were applied for systemisation of various trade restrictions. The empirical findings reflect international trade tendencies between Lithuania and Russia in the period of 2007–2014, and tariff and non-tariff barriers which were practically applied on exports from Lithuania to Russia. The results of the comparative empirical analysis could be used for devising future measures concerning Lithuania–Russia international trade relations.

The article is organised as follows. The first part (theoretical discussion) briefly outlines the arguments for economic benefit of removing trade barriers. In the course of analysing scientific literature and working papers, the structure of tariff and non-tariff trade barriers was systemised in the first sub-part of the research results. The second sub-part is dedicated to research into the tendencies of international trade between Lithuania and Russia in the period from 2007 to 2014. Tariff and non-tariff barriers which were practically applied on export from Lithuania to Russia were systemised in the third sub-part. In order to respond to the impact of the Russia–Ukraine conflict on Lithuania's export to Russia, the fourth sub-part was dedicated to the analysis of specific tendencies in trade policy between Lithuania and Russia after 2013.

THEORETICAL FRAMEWORK: THE ARGUMENTS FOR ECONOMIC BENEFIT OF REDUCING TRADE BARRIERS

Almost all empirical studies provide an affirmative answer to the question whether the reduction or elimination of trade barriers (tariff and non-tariff) stimulates the growth of international trade. There are numerous scientific works (Panagariya A., 2004; Philippidis G., Resano-Ezcaray H., Sanjuán-López A. I., 2013; Philippidis G., Sanjuán A. I., 2007; Rivera-Batiz L. and Romer P., 1991; Sachs J. D., Warner A., 1995; Sanjuán A. I., Philippidis G., Resano H., 2008; Taylor M. S. 1999; Tamini L. D. and Gervais J. P. 2010; Wacziarg R. 2001; Wacziarg R. and Welch K. H., 2008; Winchester N., 2009), which are focused on welfare implications of the removal of non-tariff barriers. Baldwin R. E. (2009)

discussed WTO success in reducing non-tariff barriers. He made a conclusion that “the average U. S. tariff rate on dutiable import was 25.3% in 1946. With the tariff cuts proposed in the Doha Round the average tariff peaks was below 7–9%. For the developing countries applying the proposed tariff-cutting formula the majority of tariff rates was between 12% or 14% and only limited number of countries had average bound rates above 15%. Taking account of non-tariff barriers, particularly quantitative import restrictions, yields an even more impressive picture of the decline in protectionism.” Anderson K. (2004) stressed that the use of various trade liberalising opportunities in principle is beneficial in economic terms. Summing up, it could be stated that domestic reform yielded *static* and *dynamic economic gains*.

The *static effects* emerge in a short term period. According to comparative advantage theory, all countries receive economic benefits from specialisation and exchange of production. The abolition of most tariffs directly correlates with the amount of benefit, as the changes of goods or resources raise competitiveness and reduce costs of production. The static gains from trade tend to be greater as a share of national output the smaller the economy, particularly where economies of scale in production have not been fully exploited and where consumers value variety so that intra- as well as inter-industry trade can flourish. The *dynamic effects* manifest themselves in long term period. For example, importation of intermediate and capital goods promotes investments that increase growth (Wacziarg R. 2001). The higher the ratio of imported to domestically produced capital goods for developing country, the faster its economic growth (Lee J. W., 1995; Mazumdar J., 2001). Despite the fact that the data of trade liberalisation reveal the breaks in investment (the negative aspect of trade barrier abolition) it depicts GDP growth rates. Economies that commit to less market intervention tend to attract more investment funds, which raises their capital stocks. Moreover, open economies also tend to be more innovative, because of greater trade in intellectual capital. Trade liberalisation can lead to higher rates of capital accumulation and productivity growth in the reforming economy because of the way reform energises entrepreneurs. In order to keep those higher growth rates sustained the government needs to have in place effective institutions to efficiently allocate and protect property rights; to allow domestic factor and product markets to function freely; maintain macroeconomic and political stability (Rodrik D., 2003; Wacziarg R., 2008; Baldwin R. E., 2004).

Despite the arguments for the benefit of removing trade barriers, most developed countries protect at least some of their industries from foreign competition. Different reasons why countries impose trade barriers are suggested. For example, infant industry assistance, balance of payments maintenance, unemployment prevention, raising of tax revenues, the protection of environmental or labour standards, specific political actions, and others. It is of key importance to stress that most of the imposed trade barriers usually are the consequence of political and economic relations. This becomes especially clear when analysing bilateral trade relations between Lithuania and Russia.

Restrictions on the part of Russia side do not necessarily have only the character of the protection of domestic market.

Molle W. (2006) distilled seven arguments as to why many countries protect their domestic producers from foreign competition by introducing obstacles to free trade, most by import restrictions (see Table 1).

Table 1 Arguments for import and export restrictions

Arguments for import restrictions	
Strategic independence	In times of war and supply shortages, a country should not depend on unreliable sources in other countries as far as strategic goods are concerned.
Nurturing the so-called “infant industries”	Young companies and sectors which are not yet competitive should be sheltered in infancy in order for them to develop into adult companies holding their own in international competition.
Defence against dumping	The health of an industry may be spoiled when foreign goods are dumped on the market. Even if the action is temporary, the industry may be weakened beyond its capacity to recover.
Defence against social dumping	If wages in the exporting country do not match productivity, the labour factor is said to be exploited; importation from such a country is held by some to uphold such practices and is therefore not permissible.
Boosting employment	If the production factors in the union are not fully occupied, protection can turn local demand towards domestic goods, so that more labour is put to work and social costs are avoided.
Easing balance-of-payment problems	Import restrictions reduce the amount to be paid abroad, which helps to avoid adjustments of the industrial structure and accompanying social costs and societal friction.
Diversification of the economic structure	Countries specialising in one or a few products tend to be very vulnerable; problems of marketing such products lead to instant loss of virtually all income from abroad.
Arguments for export restrictions	
Strategically important goods must not fall into the hands of other nations. This is true for military goods (weapons), but also for incorporated knowledge (computers) or systems.	
Export of raw materials means the consolidation of a colonial situation. It is hoped that a levy on exports will increase the domestic entrepreneurs' inclination to process the materials themselves. If not, then any rate the revenues can be used to stimulate other productions.	
If imported goods disrupt foreign markets, the importing country may be induced to take protective measures against the product and a series of other products. Rather than risk that, a nation may accept a “voluntary” restriction of the exports of that one product.	

Source: author's construction based on Molle (2006)

Economists also state that reductions in trade barriers can induce better information dissemination, technological change, unilateral opening of markets abroad, as well as opportunities to join international trade agreements.

RESEARCH RESULTS: THE STRUCTURE OF TARIFF AND NON-TARIFF TRADE BARRIERS

Countries more transparent in reporting their regulations appear to be more restrictive (Chen N. and Novy Y., 2012). Theory suggests that there are many classifications of trade barriers (Rodrik D., 2003; Wacziarg R., 2008; Baldwin R. E., 2004; European Commission, 2014; Hitiris Th., 1998; Molle W., 2006; Pukeliene V., 2008; WTO, 2014; Daugeliene R., 2011). Classic classification of trade barriers are tariff and non-tariff measures or barriers. Figure 1 presents possible tariff and non-tariff barriers induced by developed countries in order to protect their domestic markets from foreign competition.

The first group is tariff barriers (customs and import duties) – import or export tariffs which are divided according to their application (ad-valorem; specific or mixed import tariffs) or by intentions of their application (e. g. income, protection or prohibiting).

- Ad-valorem tariff barriers – their application is very frequent. The phrase “*ad valorem*” is Latin for “according to value”, and this type of tariff is levied on a good based on a percentage of that good’s value. For example, ad valorem tariff would be a 15% tariff levied by Japan on U.S. automobiles. The 15% is a price increase on the value of the automobile, so a 10,000 dollar vehicle now costs 11,500 dollars to Japanese consumers. This price increase protects domestic producers from being undercut, but also keeps prices artificially high for Japanese car shoppers.
- Specific tariff barriers – a fixed fee levied on one unit of an imported good is referred to as a specific tariff. This tariff can vary according to the type of good imported. For example, a country could levy a 15 dollars tariff on each pair of shoes imported, but a 300 dollars tariff – on each computer imported.
- Mixed tariff barriers – combined ad-valorem and specific trade barriers.

Tariff barriers can be applied with certain intentions. This means that governments have different purposes when imposing import tariffs. One of them could be to enhance the incomes from international trade. The second, in order to protect domestic infant producers from foreigners, they use different quotas as well as high tariffs for the export goods. To prohibit import, tariffs usually are so high that any import is unprofitable.

The second group is non-tariff barriers. Since the most developed countries in the world (members of the WTO and the European Union implementing free movement of goods) have dramatically reduced tariffs, more attention has been paid to non-tariff barriers. Due to their intrinsic heterogeneity non-tariff barriers are categorised into several relatively more homogeneous subgroups (Li Y., Beghin J. C., 2012): health and safety measures and technical standards, comprising sanitary and phyto-sanitary measures; technical barriers to trade; competition laws; customs clearance procedures (Winchester N., 2009); and

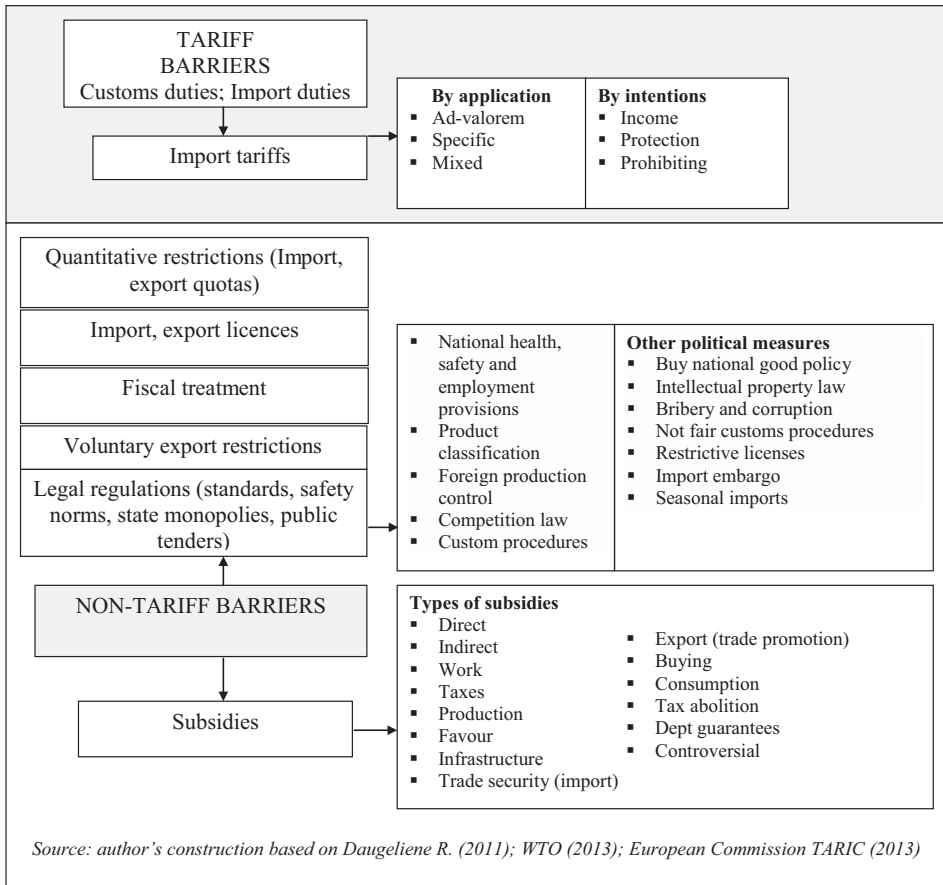


Figure 1 **Structure of tariff and non-tariff trade barriers**

other standards – as policies are often distinguished from other non-tariff measures. They affect the scope of trade in a contradictory manner. Standards and technical regulations have both the trade-impeding effects by raising the costs of exporters and similar demand-enhancing effects by certifying quality and safety to consumers. Li Y. and Beghin J. C. (2012) as the result of their study concluded that agriculture and food industries tend to be more impeded or less enhanced by technical tariffs than other sectors.

To conclude, the non-tariff barriers could be divided into seven big groups. For example, quantitative restrictions (import, export quotas); import, export licences; fiscal treatment; voluntary export restrictions; legal regulations (standards, safety norms, state monopolies, public tenders); subsidies; other political measures (as ‘buy local goods policy’; intellectual property law; bribery and corruption; unfair customs procedures; restrictive licenses; import embargo; seasonal imports).

TENDENCIES IN TRADE BETWEEN LITHUANIA AND RUSSIA IN THE PERIOD FROM 2007 TO 2013

As it was stressed in recent research papers (Anderson K., 2012; Anderson K. and Martin W., 2012), for an individual small exporting country, the effect of the increase in its export tax is the reduction of the domestic price relative to the newly-raised world price. Changes in trade policy – and export restrictions (in this case – embargo) in particular – are frequently examined as contributing factors to food price surges. Precisely such an effect occurred when Russia imposed embargo on the Lithuanian milk and dairy products in September 2013. The milk products not exported (with labels in the Russian language) were sold in Lithuania at discount prices. Russia is the second biggest import partner after the EU and the fourth export partner to Lithuania. Lithuania's export to this country amounted to 15 billion LTL (4.34 billion Euro), that is, 19% of total export.

In analysing trade relations between Russia and Lithuania in 2007–2014, the year 2008 should be emphasised in particular. In 2008, commodity circulation between these countries had reached its highest level and was 30.7 billion LTL. Export made up 8.9 billion LTL (29%), while import – 21.8 billion LTL (71%). In 2008, Russia was on top of the list of Lithuania's largest export markets and first in the list of the largest import markets. However, even 77% of all the export to Russia consists of re-export and was based on the export of products of Lithuanian origin, and in 2007–2010, Russia ranked only eighth among the largest markets. Nevertheless, Russia is the largest market for dairy products, meat and its products, live animals, paper and cardboard, and other Lithuanian goods.

Lithuania's balance of trade (see Table 2) with Russia is negative because energy-related and other raw materials that are necessary for Lithuanian industry and other needs dominate in Russia's export structure. The import of only crude oil and natural gas exceed Lithuania's exports to Russia twice. Thus, a positive

Table 2 **International trade between Lithuania and Russia in 2007–2013**
(million LTL)

	2007	2008	2009	2010	2011	2012	2013
Balance	-4610.2	-12938.2	-8142.6	-1121.4	-13727.1	-12880	-10019.6
Export	6473.0	8916.5	5394.4	8458.7	11532.7	15037.2	16811.8
Import	11083.2	21854.8	13537.0	19880.2	25259.8	27917.2	26831.4
Total Export	43192.4	55511.0	40732.0	54038.8	69576.8	79577.9	84747.6
Import	61503.5	73006.3	45311.0	60952.8	78812.2	85902.2	90489.8
Total to EU Export	27968.5	33472.4	26184.5	32952.3	42658.5	48037.5	47001.1
Import	42029.7	42016.0	26773.1	34488.8	44710.2	49500.5	54584.5

Source: author's construction based on statistics of Lithuania

balance of trade with Russia could be expected only if Lithuania's energy-related dependence on Russia were considerably reduced¹.

Lithuanian exports to Russia. Export of goods of Lithuanian origin to Russia during the period of 2007–2012 constituted around 23% of all the export (for values, see Table 3). Re-export was 77%. Therefore, while analysing, it is necessary to distinguish export of goods of Lithuanian origin from re-export.

Table 3 Changes in export of goods of Lithuanian origin to Russia

Period Variables	2007 in comparison with 2006		2008 in comparison with 2007		2009 in comparison with 2008		2010 in comparison with 2009		2012 in comparison with 2011	
	change	2007 value, mln. Lt	change	2008 value, mln. Lt	change	2009 value, mln. Lt	change	2010 value, mln. Lt	change	2012 value, mln. Lt
Export	30.6%	6473.0	37.7%	8916.5	-39.5%	5394.4	56.8%	8458.7	30.4%	15037.2
Import	-14.6%	11083.2	97.2%	21854.8	-38.1%	13537.0	46.9%	19880.2	10.5%	27917.2

Source: author's construction based on statistics of Lithuania

In 2007–2012 the major part of goods of Lithuanian origin exported to Russia were milk and other dairy products worth 1.55 billion LTL, which is 22% out of the total export of goods of Lithuanian origin during the period analysed. Out of dairy products, mainly cheese and curds were exported, which made up 93% of all the milk and dairy products export to Russia. 3.4% were dry dairy products in the form of powder or granules. Russia is the largest market for Lithuanian dairy products. Every year it receives around 30% of all Lithuanian dairy exports. Comparing 2007 to 2012, exports of milk and other dairy products to Russia increased by 34.7%, that is, by 65 million LTL.

The second largest group of exports goods of Lithuanian origin to Russia in 2007–2012 were machines and mechanical equipment, which made up 7.5% of total export of goods of Lithuanian origin and amounted to LTL 519 million. 27% out of all mechanical equipment exports were air pumps, air or gas compressors and fans; 15.1% were centrifuges and liquid or gas filtration or cleaning equipment, 12% – taps and valves. During the period analysed, Russia was also the largest market for machines and mechanical equipment of Lithuanian origin. Russia received 15.2% of all these products. It is important to mention that during the year of crisis (2009), Germany claimed the largest market position from Russia; however, in 2010 Russia again regained its leading role. In 2012 against 2011, export of machines and other mechanical equipment to Russia grew by 21.9% or, in monetary terms, by LTL 14.5 million.

¹ This energy dependence will be reduced significantly because of gas terminal construction in Klaipėda and Floating storage and regasification unit "Independence" relocation in Klaipėda sea port in October, 2014.

In the third place in the exports of goods of Lithuanian origin to Russia during the period of 2007–2012, was export of live animals, which constituted 7.3% of all the exports of Lithuanian origin to Russia. 99.8% of all the exported animals were pigs. Apparently, Russia has also the largest market for Lithuanian pigs. It accounts for almost a half of all the exports of live animals. In 2012, if compared to 2011, the exports of live animals to Russia declined by 27.4%. Such decline was influenced by the swine fever epidemic spreading at that time, due to which, Russia banned the import of pigs to Russia from certain regions of Lithuania. Russia is also the largest market for Lithuanian meat and meat products, 25% of these products are exported to Russia every year. In 2012, re-export of transport to Russia increased by 68.5% or 241.5 million LTL against 2011. As regards mechanical equipment, the biggest parts of re-exported items are machines, laboratory and industrial equipment. They make up 7.5% of all the re-export of machines and mechanical equipment, while re-export of printing machines makes up 7.3%. In 2012 against 2011, the exports of machines and mechanical equipment to Russia increased by 56.3% or 322.4 million LTL. Russia is also the largest market for Lithuanian paper and cardboard. 20% of all the paper and cardboard products exported annually are exported to Russia.

In 2007–2014, the major part of the re-exported items was transport, which made up 14.7% of all re-export. However, from the year 2009 onwards, the re-export of machines and other mechanical equipment has held the leading position among all the goods re-exported to Russia, and in 2007–2012, the re-export of machines and mechanical equipment made up 14.6% of all re-export. In the case of re-export of transport, used vehicles constituted the major part of re-exported items. They make up around 63.3% of the total re-exported transport. 15.4% were re-exports of trailers and semi-trailers. Russia is the largest market for re-export of machines and mechanical equipment and the second-largest market (after Belarus) for transport re-export. A quarter of transport and 43.1% of machines and other mechanical equipment are re-exported to Russia. Besides the above listed goods, many electric machines (11.3% of all the re-export), fruit (10.4%) and vegetables (7.1%) are also re-exported to Russia.

Lithuanian import from Russia. The biggest part of Lithuanian import from Russia makes up energy-related and other raw materials. In 2007-2014 crude oil imports dominated. During the analysed period, it made up even 67.4% of total import while gas was 14.4% of total import. Therefore, almost 82% of all the import from Russia was crude oil and gas. An import of electric energy made up 1.42% while petrol and diesel – 3.9% of total import.

The second largest group of imported goods in 2007–2012 were sulphur, phosphates and other minerals that made up 2.7% of total import from Russia. 83.7% out of those were imported natural phosphates and 9.8% – sulphur. The major part of these minerals is consumed by Lithuanian chemical industry. In 2012, if compared to 2007, the import of natural phosphates increased the most – by 56 million LTL (32.5%). However, the major part of phosphates was imported

(raw amber, etc.) for 730 million LTL in 2008. It was 3.2 times more than in 2012. In 2011, if compared to 2010, the import of other minerals increased the most – three times, which is 19.7 million LTL, – including the import of sulphur – by 63.3%, namely, 9.5 million LTL.

The third largest group of imported goods in 2007–2010 was fertilisers that made up 1.3% of the total imports from Russia in 2007–2010. Of the total import of fertilisers, 48.9% were fertilisers containing three principal chemical elements: nitrogen, potassium, phosphorus. 27.9% were nitrogen fertilisers and 12.7% were potassium fertilisers. Comparing 2010 to 2007, fertilisers containing three – nitrogen, potassium, and phosphorus – increased the most (by LTL 89 million or 2.4 times). In 2011 against 2010, the import of nitrogen, potassium and phosphorus fertilisers increased 2.5 times, which is 29.2 million LTL, and the import of nitrogen fertilisers almost doubled (18.7 million LTL). Inorganic chemicals make up 1.22% of the total imports from Russia and 90% of all the imports of inorganic chemicals is anhydrous ammonia.

In 2012, commodity circulation between Russia and Lithuania was 42.95 billion LTL, having increased by 15.5% against 2011. Lithuania's trade balance with Russia was negative again. It was – 12.88 billion LTL. In 2011 compared to 2010, import from Russia increased by 33.6% or 3.6 billion LTL. Such growth was mostly occurred due to the increase in mineral fuel exports (3.4 billion LTL) and export of fertilisers. The most promising sectors for the export of Lithuanian products and services to Russia are transport and logistics, food products, furniture and tourism.

The analysis of the data of Lithuanian export to Russia reveals that export from Lithuania to Russia made up 19% of all Lithuanian export, amounting to 15.04 billion LTL. It has increased by 30.4% from the year 2011. The main groups of products exported to Russia were: transport (around 1.3 billion LTL), dairy products (around 0.5 billion LTL), vegetables (0.4 billion LTL), also wine, furniture and fruits. Out of total exports to Russia, the goods of Lithuanian origin made up 16.5%, which was 2.48 billion LTL.

In 2012, Lithuanian import from Russia reached 27.92 billion LTL. If compared to the year 2011, it increased by 8.84%. Lithuanian import from Russia made up 32.32% of total Lithuanian import. The main groups of products imported from Russia in 2012 were oil products, electric energy, mineral or chemical fertilisers, natural phosphates, ammonia and other products. Around 99.8% of crude oil, 97.42% of natural gas and 60.61% of electric energy out of the total amount of these products brought into Lithuania in 2012 were imported from Russia.

In 2012, Russia was first on the list of Lithuania's largest export markets and first on the list of the largest import markets. Export to Russia amounted to almost 19% of the total exports from Lithuania, while import from Russia constituted around 32% of the total import to Lithuania.

TARIFF AND NON-TARIFF BARRIERS APPLIED ON EXPORT FROM LITHUANIA TO RUSSIA

In the first decade of the 21st century, economic and political relations between Russia and Lithuania were rather complicated. Energy dependence, problems in trade and customs influenced the nature of international trade. Judging by all factors, Russia, being one of the biggest worlds' economies, is a regular market economy country. However, certain actions of the government in regard to restrictions of export from certain EU countries, especially Lithuania, distort the market. It is obvious that Russia applies different protectionist measures for export in order to demonstrate its dominant position, both economic and political, in the world. Protectionist measures will also be applied in the future not only for political reasons, but in order to protect domestic economy.

During the past decade, almost a half of EU member states had trade conflicts of various economic consequences with Russia: 1999–2000 – the steel conflict; 2006–2007 – the Russia–Poland “meat war”; the introduction of export tariffs on wood raw materials from Sweden and Finland; the Russia–Estonia “bronze soldier” conflict, which resulted in a blockade of transportation of Russian oil and coal via Estonian railways; the imposition of taxes on flights over the territory of Russia; customs duties on the export of machinery, agricultural equipment, steel products, television and radio equipment from the EU were increased; a ban on pork imports to Russia was also imposed.

Russia's membership in the World Trade Organization (WTO) did not improve conditions for export. It should be stressed that after joining the WTO in August 2012, Russia has applied more protectionist measures. One of the most salient examples of discrimination is tax on the utilisation of cars and heavy

Table 4 **Most important trade restrictions applied by Russia on Lithuanian exports**

Date	Description of trade restrictions
1998	Russia's market actually was closed for the Lithuanian goods (especially for food products, textile and other consumer goods). Exports to Lithuania significantly decreased. Payments were also irregular. Many Western exporters were forced to retreat from Russian market.
2009	Restrictions on the export of dairy products. The reason was allegedly “low quality” (too high content of yeasts and moulds).
2011	Russia's Customs Service instruction to suspend imports of Lithuanian pork.
2013	Russia's Customs Service instruction to suspend imports of Lithuanian milk and dairy products (<i>Russia accounted for 33.7 percent of Lithuanian dairy exports in January through July. This fact confirms that export of dairy products is very important for Lithuania's economy</i>).
	Custom checks on Lithuanian trucks. (<i>Tightened customs checks of Lithuanian haulers had been lifted on the Lithuanian–Russian border and in internal customs checkpoints of Russia</i>).

Source: author's construction based on statistics of Lithuania

machinery: 350 Euro for each imported car and 15 000 Euro apiece for heavy machinery. Other restrictions, which are very painful for Lithuanian producers, namely, the prohibition of import of beef cattle and dairy products, non-reduction of import tariffs for hundreds of products, including timber.

The most widely-known tariff and non-tariff barriers which were and are applied by Russia for Lithuanian export are summarised in Table 4. It is essential to stress that approximately 83% of Russia's export products are tax-free. Moreover, the EU applies a generalised preference system for many types of goods from Russia.

Tariff barriers	Non - tariff barriers
<ul style="list-style-type: none"> ▪ Import duties ▪ Import taxes ▪ Export embargo ▪ Quotas ▪ Discriminatory railway fees <p><i>Example: Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included.</i></p> <ul style="list-style-type: none"> ▪ Milk and cream, not concentrated nor containing added sugar or other sweetening matter – export tariff is from 5% or 15%. ▪ Buttermilk, curdled milk and cream, yogurt, kephir and other fermented or acidified milk and cream, whether or not concentrated or containing added sugar or other sweetening matter or flavoured or containing added fruit, nuts or cocoa - mix tariff – 15%, but not less than 0.18 EUR/kg. ▪ Whey, whether or not concentrated or containing added sugar or other sweetening matter; products consisting of natural milk constituents, whether or not containing added sugar or other sweetening matter, not elsewhere specified or included – 10%; 13.3%; 15%. ▪ Butter and other fats and oils derived from milk; dairy spreads – 17.5%, but not less than 0.19 EUR/kg; 18.3%, but not less than 0.27 EUR/kg. ▪ Cheese and curd – 18,3%, but not less than 0.23 EUR/kg; 18,3%, but not less than 0.37 EUR/kg; 20%, but not less than 0.4 EUR/kg; 15%, but not less than 0.3 EUR/kg; 20,3%, but not less than 0.41 EUR/kg; 22,5%, but not less than 0.45 EUR/kg. ▪ Birds' eggs, in shell, fresh, preserved or cooked - 0%; 13.3%; 15%. ▪ Birds' eggs, not in shell, and egg yolks, fresh, dried, cooked by steaming or by boiling in water, moulded, frozen or otherwise preserved, whether or not containing added sugar or other sweetening matter – 13,3%; 14%; 15%, but not less than 0,6 EUR/kg; 16,5%; 17%; 21,3%; 21,7%. ▪ Natural honey – 15%. ▪ Edible products of animal origin, not elsewhere specified or included – 15%. 	<ul style="list-style-type: none"> ▪ Veterinary Import Permit ▪ State Sanitary Registration of Goods ▪ Veterinary Health Certificate for Animal Products ▪ Quality standards ▪ Specific technical requirements for trucks ▪ Antidumping measures ▪ Customs valuation ▪ Requirement to produce export declaration ▪ Road taxes ▪ Customs clearance procedures ▪ Border congestion ▪ Certification and conformity assessment ▪ Government procurement “buy Russian” ▪ Lower domestic energy prices, notably gas ▪ Control, inspection and approval procedures ▪ Stringent requirements on pesticide and antibiotic residues ▪ Sanitary requirements for milk and dairy products

Source: author's construction based on European Commission TARIC Consultation (2013)

Figure 3 Trade barriers for Lithuanian (as well as EU) exports to Russia

At present, Lithuania still does not have any effective mechanisms which would make it possible to operatively and adequately respond to developments related to Russia's trade restrictions applied to Lithuanian export. The lack of prognostic skills is one of the major drawbacks of Lithuanian experts. Meanwhile, Russia applies different protectionist measures instead of structural reforms in its economy, opening its market for foreign direct investment and liberating the trade.

SITUATION WITH TRADE RELATIONS BETWEEN LITHUANIA AND RUSSIA AFTER 2013

As underlined in the report of Lithuania Central Bank (2014), with the conflict between Russia and Ukraine continuing unabated, the economic outlook for Russia and the countries with close economic ties to Russia is getting gloomier. Already in 2013, the growth of domestic demand side as the growth of investment stalled among structural problems and toned-down expectations. Closer economic ties with Russia exist in the country's transport sector, which provides approximately 3 billion LTL worth of services to Russia's entities annually, and this accounts for a sizeable proportion of the total transport services provided in Lithuania. Unlike the transport sector, the dependence of Lithuania's industrial undertakings on changes in Russia's economic development is relatively low. Economic ties between the non-tradable sector and Russia are rather limited. The worse-than-expected developments in Lithuania's exports and their weaker outlook have led to more cautious assessment of the prospects of the growth of the entire economy. Real GDP is projected to increase by 3.3 per cent in 2014 (compared to the previous forecast of 3.6 per cent).

It is important to stress, that Lithuania's politicians and representatives of industry have nevertheless declared that the decline in exports and GDP growth do not correlate with the strict sanctions from Russia. This could be explained by the fact that the performance of goods exports is deteriorating due to both weaker economic development of foreign trade partners, especially Russia, and unfavourable developments in the markets for certain products. In 2013, the growth of exports was at least twice as slow as in the period from 2010 to 2013, and the export trends turned negative at the end of the period. That mainly resulted from a still sluggish foreign demand, unfavourable environment in the markets for petroleum products and fertilisers, and a fall in grain prices. *Restrictions on the exports of dairy products applied by Russia's authorities in the second half of 2013 and the stepped-up checks of Lithuanian vehicles had a negligible impact on the general export performance in the above-mentioned period.*

The performance of Lithuania's exports to Russia in 2013 was affected by targeted restrictions. In addition, negative effects arose from depreciation of Russia's currency, which undermined the competitiveness of Lithuania's industrial products in that market. However, it should be pointed out that Russia

accounted for less than 5 per cent of the goods of Lithuanian origin sold abroad; therefore, Lithuania's manufacturers were less vulnerable to shocks in that market than in re-exports.

In 2014, one-fifth of total Lithuanian exports of goods were delivered to Russia, which was also the largest market for re-exports. The poorest results were yielded in the *chemical industry*, where exports fell by LTL 750 million, or 11.9%. With the exception of the Russian-Ukrainian conflict, the outcome of which can hardly be predicted, one of the main factors that will determine the value of exports in 2014 will be the decrease in export prices, notably in the fertiliser industry, while the weakening currencies of Belarus, Russia and other CIS countries will make Lithuanian products in these countries more expensive.

The increase in *food industry exports* was mostly influenced by the dairy industry, whose exports made up one third of the entire food export. Compared with 2012, the export value of dairy products in 2013 grew by 8.4%, or by LTL 148.8 million to reach a total of LTL 1.9 billion. The growth would have been greater if it were not for Russia's ban on imports of dairy products. For example, if the first nine months of 2013 are compared with the first nine months of 2012, the increase in cheese and curd exports amounted to 11.2%, or LTL 74.8 million, while in terms of annual figures, the export of products in this category decreased by LTL 40.9 million, or 4.4%, which means that the last quarter of the year, when the Russian ban was in effect, negated the entire growth in exports of cheese and curd.

As it was stressed in the economic outlook for Lithuania which was prepared by the Central Bank of Lithuania (2014), the restrictions enforced in August 2014 were applied to nearly one fifth of Lithuania's exports, including re-exported goods, to Russia. The annual exports of products which were currently subject to the restrictions on trade to Russia amount to more than LTL 3 billion, or around 4 per cent of Lithuania's total exports of goods. This was a rather significant share of Lithuania's exports, but only about a fourth of these exports were of Lithuanian origin, while three-fourths were re-exported goods. The restrictions were applied to trade in agricultural and food products; consequently, a direct negative effect was felt in agriculture and food industry. A large part of products of Lithuanian origin to which these restrictions were applied were dairy and meat products. The export of both dairy and meat products to Russia has until now accounted for more than a tenth of the output of the aforementioned industries. There are forecasts that, in addition to those economic activities, a significant impact will be felt by the transport sector, which earns a large share of its income through the storage and transportation of goods for the Russian market. It is estimated that the restrictions of trade with Russia will decrease the growth of Lithuania's real GDP by up to 0.4 percentage points in 2014. The negative effect will be felt not only by the exporting sector but also by economic activities oriented towards the domestic market. Private consumption, investment, and the labour market will be negatively affected.

CONCLUSIONS

1. Theoretical analysis revealed unequivocally that the reduction of trade barriers, tariff and non-tariff alike, stimulates the growth of international trade and is economically beneficial. It enhances information dissemination and technological exchange between countries. These are probably the main arguments why international trade restrictions should be controlled at the intergovernmental level. However, the research results are consistent with political economy theories of the determinants of trade protection. It should be stressed that, even after evaluation of industry and country specific factors, states tend to protect markets (industries) that are weak or in decline, politically important or threatened by import competition.
2. An economic benefit from trade liberalising opportunities can manifest itself in a short or long-term period. Respectively, both static and dynamic effects could be felt. In order to achieve these effects, the governments of countries should undertake appropriate political and economic actions. It is essential to stress that trade liberalisation is not a precondition for elimination of governmental actions.
3. According to theoretical analysis, despite the positive arguments of free trade, most developed countries protect their industries from foreign competition. The most important arguments for import restrictions are strategic independence; nurturing infant industries, protection against dumping, boosting employment, diversification of the economic structure. And, the most important arguments for export restrictions are defence of strategically important goods from foreign competition and defence raw material market.
4. Theoretically, all trade restrictions could be divided into two groups: tariff and non-tariff barriers. Those are, respectively, import tariffs (customs and import duties); and quantitative restrictions; import, export licences; fiscal treatment; voluntary export restrictions; specific legal regulations; subsidies.
5. The analysis of tendencies of international trade between Lithuania and Russia in the period of 2007–2012 showed that Russia was second largest import partner to Lithuania (after the EU) and fourth export partner. In the most recent period, Lithuania's export to Russia constituted 19% of total export. Export of goods of Lithuanian origin, despite different tariff and non-tariff barriers for food goods, had a tendency to increase. Lithuania's balance of trade with Russia was negative because Russia's import structure was dominated by energy-related and other raw materials necessary for Lithuanian industry and other needs.
6. Statistical analysis made it possible to conclude that the main goods of Lithuanian origin exported to Russia in the period from 2007 through 2012 were: milk and other dairy products; machines and mechanical equipment; live animals, especially pigs; paper and cardboard. The largest part of Lithuanian imports from Russia consisted of energy-related and other raw materials. This

confirms Lithuania's inevitable dependence on Russia's energy sector, which illustrates the complex nature of trade policy. It was forecasted that the most promising sectors offering Lithuanian products and services for export to Russia will be transport and logistics, food products, furniture and tourism.

7. The analysis of the EU and WTO working papers dealing with trade barriers and of the EC TARIC system leads to the conclusion that, during the past decade, almost a half of all EU member states has had trade conflicts with or had been subject to various trade and economic sanctions from Russia. Lithuania is no exception. It should be stressed, that Russia, even being a member of the WTO has not given up imposing various trade barriers. Starting with 1998, the main trade restrictions, both tariff and non-tariff, were imposed by Russia on Lithuanian export of food products. Export duties, standards and other specific requirements, export suspensions and even an embargo were applied in regard to milk and dairy products, and pork. Specific customs checks on Lithuanian trucks had negative economic consequences for Lithuanian producers. The said restrictions had obvious political and economic nature.
8. The analysis of the character of trade policy between Lithuania and Russia after the 2013 suggested that Lithuania's economic development will be negatively affected by restrictions of trade with Russia. Restrictions were applied to trade in agricultural and food products; therefore, a direct negative effect will be felt in agriculture and food industry. There are no comprehensive estimates as to how the Russia-Ukraine conflict will affect Lithuania's exporters; however, it is presumed that the effects will be negative. According to estimates, the restrictions of trade with Russia will decrease the growth of Lithuania's real GDP by up to 0.4 percentage points in 2014. The negative effect will be felt not only by the exporting sector but also by economic activities targeting the domestic market.

REFERENCES

- Anderson, K., 2012. Government Trade Restrictions and International Price Volatility. *Global Food Security*, Vol. 1(2), pp. 157-166.
- Anderson, K., 2004. The Challenge of Reducing Subsidies and Trade Barriers. *Economist*, 39 (May), pp. 24-28. Available at: http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2004/10/14/000160016_20041014091046/Rendered/PDF/WPS3415.pdf.
- Anderson, K., Martin, W., 2012. Export Restrictions and Price Insulation During Commodity Price Booms. *American Journal of Agricultural Economics*, 94(2), pp. 422-27.
- Anderson, K., Nelgen, S., 2012. Trade Barrier Volatility and Agricultural Price Stabilization. *World Development*, 40(1), pp. 36-48.
- Anderson, K., S. A., 2012. The Changing Geography of World Trade: Projections to 2030. *Journal of Asian Economics*, 23(4), pp. 303-323.
- Baldwin, R. E., 2004. Challenges to Globalization. An Overview. In Baldwin Robert E. and Winters L. Alan, ed. *Challenges to Globalization: Analysing*

- the Economics*. University of Chicago Press, pp. 1-14. Available at: <http://www.nber.org/chapters/c9530.pdf>.
- Baldwin, R. E., 2009. Trade negotiations within the GATT/WTO framework: A survey of successes and failures. *Journal of Policy Modeling*, 31(4), pp. 515–525. Available at: <http://linkinghub.elsevier.com/retrieve/pii/S0161893809000398> [Accessed December 20, 2013].
- Chen, N., Novy, Y., 2012. On the Measurement of Trade Costs: Direct vs. Indirect Approaches to Quantifying Standards and Technical Regulations., p. 15. Available at: <http://www2.warwick.ac.uk/fac/soc/economics/staff/academic/novy/wtr.pdf> [Accessed February 14, 2014].
- Daugeliene, R., 2011. *ES ekonomine integracija: priezastys, raida, perspektyvos*, KTU: Technologija.
- European Commission, Export and Import rules. 2013. Available at: <http://ec.europa.eu/trade/import-and-export-rules/>.
- European Commission, TARIK Consultation methodology. 2013. Available at: http://ec.europa.eu/taxation_customs/dds2/taric/taric_consultation.jsp?Lang=en&Taric=&EndPub=&MeasText=&Area=RU&Regulation=&LangDescr=&MeasType=&SimDate=20131025&StartPub=&OrderNum=&GoodsText=&Level=&Expand=true.
- Francois, J., van Meijl, H., van Togerent, F., 2005. Trade liberalization in the Doha Development Round. *Economic Policy*, 20(42), pp. 349–391. Available at: <http://doi.wiley.com/10.1111/j.1468-0327.2005.00141.x> [Accessed December 20, 2013].
- Frankel, J. A., Romer, D., 1999. Does Trade Cause Growth? *American Economic Review*, 89(3), pp. 379-399.
- Freeman R. B., 2003. Trade Wars: The Exaggerated Impact of Trade in Economic Debate., pp. 1-35. Available at: http://www.nber.org/papers/w10000.pdf?new_window=1.
- Grossman, G. M., Helpman, E., 1991. *Innovation and Growth in the Global Economy*, Cambridge, Mass.: MIT Press.
- Hitiris, Th., 1998. *European Union Economics* 4th ed., Prentice Hall.
- Lee, J. W., 1995b. Capital Goods Imports and Long-Run Growth. *Journal of Development Economics*, 48, pp. 91–110.
- Lejour, A. M., deMooj, R. A., Nahuis, R., 2001. EU enlargement: economic implications for countries and industries. , p. 123.
- Li, Y., Beghin, J. C., 2012. A meta-analysis of estimates of the impact of technical barriers to trade. *Journal of Policy Modeling*, 34(3), pp. 497-511. Available at: <http://linkinghub.elsevier.com/retrieve/pii/S0161893811001232> [Accessed December 20, 2013].
- Mazumdar, J., 2001. Imported Machinery and Growth in LDCs. *Journal of Development Economics*, 65, pp. 209-224.
- Molle, W., 2006. *The Economics of European Integration: Theory, Practice, Policy* 5th ed., Ashgate.
- Panagariya, A., 2004. Miracles and Debacles: Do Free-trade Skeptics Have a Case?, p. 73. Available at: http://www.columbia.edu/~ap2231/Policy Papers/miracles and debacles-panagariya-rev-March_04.pdf.
- Philippidis, G., Sanjuan, A. I., 2007. An analysis of Mercosur's regional trading agreements. *The World Economy*, 30, pp. 504-531.

- Philippidis, G., Resano-Ezcaray, H., Sanjuan-Lopez, A. I., 2013. Capturing zero-trade values in gravity equations of trade: an analysis of protectionism in agro-food sectors. *Agricultural Economics*, 44, pp. 141-159.
- Pukeliene, V., 2008. *Ekonomine integracija: teorija, ES politika ir procesai*, Kaunas: VDU.
- Rivera-Batiz, L., Romer, P., 1991. International Integration and Endogenous Growth. *Quarterly Journal of Economics*, 106, pp. 531-556.
- Rodrik, D. (2003). Growth Strategies. Retrieved from <http://www.econstor.eu/bitstream/10419/73289/1/wp0317.pdf>
- Sachs, J. D., Warner, A., 1995. Economic Reform and the Process of Global Integration., p. 118. Available at: http://earthinstitute.columbia.edu/sitefiles/file/about/director/pubs/brookings_q195.pdf.
- Sanjuán, A. I., Philippidis, G., R. H., Resano, H., 2008. Gravity estimation of non tariff measures (NTMs) on EU-USA agri-food trade: Implications for further analysis., (2009), pp. 1-19. Available at: http://citarea.cita-aragon.es/citarea/bitstream/10532/2256/1/2013_087.pdf.
- Taylor, M. S., 1999. Trade and Trade Policy in Endogenous Growth Models. In J. P. and A. Woodland, ed. *International Trade Policy and the Pacific Rim*. London: Macmillan for the IAE.
- Tamini, L. D., Gervais, J. P., L. B., 2010. Trade liberalization effects on agricultural goods at different processing stages. *European Review of Agricultural Economics*, 37(4), pp. 453-477.
- Wacziarg, R., Welch, K. H., 2008. Trade Liberalization and Growth: New Evidence. *World Bank Economic Review*, 22(2), pp. 187-231.
- Wacziarg, R., 2001. Measuring the Dynamic Gains From Trade. *World Bank Economic Review*, 15(3), pp. 393-429. Available at: http://www.anderson.ucla.edu/faculty_pages/romain.wacziarg/downloads/trade.pdf.
- Winchester, N., 2009. Is there a dirty little secret? Non-tariff barriers and gains from trade. *Journal of Policy Modeling*, 31, pp. 819-834.
- WTO, International trade and market access data. 2013. Available at: http://www.wto.org/english/res_e/statis_e/statis_e.htm.

EVALUATION OF SOCIAL AND ECONOMIC CONVERGENCE OF LATVIA TO THE EU-28 LEVEL

ELENA DUBRA
KRISTAPS SOMS

Abstract

The purpose of this research is to introduce the evaluation of convergence of Latvia's social development to the EU-28 member states in the context of the EU convergence policy. In addition, the article addresses development challenges for improvement of the socio-economic well-being of states and regions in the European Union and also for avoiding disparities. The objective of this study is to assess the level of social situation in Latvia and its development by applying latest developments of convergence economic theory to local conditions. The main emphasis of this research lies on the complex approach to the EU convergence policy analysis and its implementation in Latvia, which enables social convergence of Latvia towards the EU-28 level.

The research methodology is based on the analysis of the EU convergence economic theories and on the estimation of external and induced variables: the economic and welfare level situations. This research investigates major variable factors and presents information about various socio-economic indicators and indexes. This study contains and discusses changes of key concepts related to the convergence policy of the European Union and compares objectives and general outlines of the convergence period 2014–2020 in the framework of Europe as a whole, as well as its impact on Latvian economics and living conditions.

The main results and conclusions reflect the overall socio-economic situation in the EU and Latvia and the impact of current and future European convergence policy on social development in Latvia. The discussion focuses on the analysis of socio-economic situation in the EU and Latvia, and the estimation and trends of the national economy development.

Keywords: Latvia, EU strategies, cohesion policy, socio-economic development

JEL code: E24, F15, F42, I38, O19, O52

INTRODUCTION

The recent trends in the socio-economic policy of Latvia are taken as important priorities for the development of social legislation, the situation with income growth, improvements to pension policy and education system and expanding the labour market.

Through its Social Investment Package, the Commission provides guidance to Member States to modernise their welfare systems towards social investment throughout life.

The package complements the Employment Package, which sets out the way forward for a job rich recovery, the White Paper on Pensions, presenting a strategy for adequate, sustainable and safe pensions, and the Youth Employment Package, which deals specifically with the situation of young people.

As social policies are an integral part of the Europe 2020 Strategy, the Commission also supports EU countries' efforts to address their social challenges through the actions foreseen in the Platform against Poverty and Social Exclusion and Social Investment Package, as well as the EU funds, in particular, the European Social Fund.

The EU countries are far from reaching the 2020 target, and the worsening social situation caused by the economic crisis is undermining the sustainability of social protection systems. European statistics show that in 2012 24.8% of the entire EU population are at risk of poverty or social exclusion, and this includes 28.1% of all children in Europe, 19.3% of those over 65 years of age and 25.4% of adults. The situation in 2013 has almost not improved and 24.5% of the entire EU population are at risk of poverty or social exclusion (*Eurostat, 2014, Income and living conditions database*).

This research presents information about main socio-economic indicators for convergence, as well as GNP growth, welfare, inflation and unemployment levels and its possible improvement for 2014-2020. In order to achieve socio-economic growth and social convergence goals, the Latvian government must identify its major social priorities and deliver the best results in social efficiency. The studies of social development need a pragmatic approach to financing in order to create jobs and reduce poverty levels and social disparity in the national economy. The overall improvement of social policy in Latvia is connected with productivity growth. In order to enable the promotion Latvia's economic and social convergence to the average EU-28 level, budget expenditure will have to be more effective in 2014–2020. The priority tasks for Latvia's economy in the recent years are the development of social legislation, enhancement of income growth, improvements to the pension policy and education system, and labour market development.

The aim of this research is to assess the social development level in Latvia and its increase in order to reach the goals of the Europe 2020 strategy

TYPES OF CONVERGENCE

European convergence policy is a place-based policy which gives a role to each European state in the sense that it is not an obstacle to the optimal allocation of economic activity, but can become a source of growth on its own. Recent

economic theory confirms this approach in numerous case studies, which show that convergence policy can make a difference. In fact, the EU has achieved impressive economic and social convergence since 1988. Convergence policy must be connected with an outlook of the likely future evolution of the national economy. In particular, as experience has shown, the sustainability and robustness of the convergence process after euro adoption is to a significant extent endogenous and it depends on a Member State's domestic policy orientations after it has joined the euro area. Convergence processes for the EU states must be based on the strong economic growth of GDP per capita.

When discussing the concept of convergence, it is important to understand the difference between real and nominal convergence. The process of real economic convergence suggests catching up in standards of living in the EU's New Member States with those of the old EU Member States. This process is usually accompanied by nominal convergence and is usually related to the Balassa-Samuelson effect. Economic literature suggests that the term *convergence* in its economic essence describes gradual elimination of disparities in the income level. Economic growth theory provides two types of the convergence: σ -convergence (sigma) and β -convergence (beta) (*Barro, Sala-i-Martin, 2004*). The first kind serves as an indicator to measure whether the distribution of income across regions or countries has become less uneven over time. In contrast, β -convergence, attempts to describe the mobility of income within the same distribution and predominantly serves to find out whether the convergence occurred because poorer regions and/or countries have grown faster than the rest.

The results from convergence analysis are usually used to test the validity of the two economic growth models –neoclassical and endogenous. The former one predicts β -convergence regardless of full, partial or absence of capital mobility (*Marzinotto B., 2012*).

DEVELOPMENT OF SOCIAL SITUATION IN LATVIA

The economy of Latvia continued its growth at a rapid pace in 2012 and the gross domestic product increased by 5.2% (*Central Statistics Bureau, 2014*) compared to the previous year. It was the fastest growth among the European Union Member States. Despite the unfavourable environment in external markets, the growth rates remained high throughout 2013 and 2014. In 2013, gross domestic product increased by 4.1%. An estimate by the statistics office shows a GDP increase by 2.4%, when comparing Q3 2014 to 2013 (*Central Statistics Bureau, 2014*).

The strong economic growth in 2012 and 2013 was based on both external and domestic demand, while in 2014; advance mainly took place due to strong internal demand. Trade, manufacturing, construction and transport sectors contributed the most to the growth. The volume of public services sectors

remained at the level of the previous year. It was influenced by the implemented fiscal consolidation measures.

“The Latvian labour market demonstrated a high degree of flexibility during the crisis. Job seekers also showed high mobility within the EU as emigration increased substantially in the process of structural adjustment. More recently, as of 2012, the economic recovery and the steady pace of job creation not only reduced emigration but raised significantly the number of immigrants in Latvia. Underpinned by a decentralised wage-setting system, a considerable wage adjustment took place in Latvia over 2009 and 2010 and wages moved broadly in line with productivity afterwards. In 2013-2014, wages are projected by the Commission services’ 2013 Spring Forecast to remain consistent with productivity. Vacancy rates remain among the lowest in the EU indicating that at aggregated level labour supply is adequate. Nevertheless, regional differences and skills mismatches on specific labour market segments keep structural unemployment relatively high. However, the latest statistics show that youth unemployment, though still high, has moved slightly below the EU average while long-term unemployment remains a major challenge. All these structural deficiencies on the labour market amount to a significant loss in potential output and pose risks of excessive wage adjustments; they need to be properly addressed by active labour market policies and education reforms, as stipulated in the Commission and Council country specific recommendations” (*Convergence Report 2013 on Latvia. European Economy N° 3/2013, pp. 45-46*).

The situation in the labour market is improving along with the economic growth. The number of employed aged 15–74 years reached 889 thousand in Q2 2014, which was 30.6 thousand more than in Q2 2011. The share of job seekers dropped to 10.6% in Q3 2014, which is by 1.2 percentage points lower than a year ago (*Central Statistical Bureau, 2013*).

Registered unemployment was among the most vulnerable problems during the economic crisis. Following a decrease over several years to the level of 7.7% before 2009, the unemployment rate reached 17.5% within a year and continued to increase up to 19.5% in 2010. Since 2011, Latvia has seen a continued decrease in unemployment, which goes in hand with economic development. The unemployment rate that had reached 16.2% in 2011 declined to 8.2% in October 2014. It must be admitted that the unemployment figures reveal considerable geographical differences with 5.2% in Riga compared to 17.6% in Latgale region (*State Employment Agency, 2013*).

The main conclusions on the progress towards the achievement of objectives in the areas related to the labour market development are as follows: high growth rates in Latvia allow forecasting that in 2010 the GDP of Latvia per capita expressed as the purchasing power parity standard will be close to the objective stated in the Strategy – 62% of the average level in the EU-15. During the recent years the economic growth observed in Latvia has had a positive impact on the labour market: the employment level increases and the unemployment rate declines,

which suggests that objectives stated for 2020 concerning the employment and unemployment levels (the employment rate – 73% and the unemployment rate – 7%) can be achieved.

Although the economic growth rate remained high, the dynamics of inflation showed a tendency to decline significantly to -0.4% in November 2013. The dynamics of annual average inflation was similar, dropping from 4.4% in 2011 to 0% in 2013. Latvia has been complying with the Maastricht inflation criterion for the euro introduction since September 2012, but adopted the single currency on 1 January 2014.

Table 1 **National targets of Latvia for 2020**

	Latvia	
	Targets	
	2020	2030
Persons at risk of poverty (%)	21.0% (121 000 people lifted out of the risk of poverty or exclusion)	Persons at risk of poverty after social transfers <16%

Source: author's construction based on the National Reform Programme (Ministry of Economics), the Sustainable Development Strategy of Latvia 2030 (Crosssectoral coordination office)

The National Reform Programme of Latvia for the Implementation of the Europe 2020 strategy and the Convergence Programme of Latvia were approved simultaneously by the Cabinet of Ministers on 26 April 2011 and submitted to the European Commission on 29 April 2011. The National Reform Programme of Latvia describes the medium-term macroeconomic scenario and reflects the main macro-structural bottlenecks of Latvia and the key measures for 2011–2013 to eliminate them, as well as national quantitative targets of Latvia for 2020 in the context of the Europe 2020 strategy and the key measures for 2011–2013 to achieve them.

The number of persons at risk of poverty or social inclusion has decreased since 2011 by 4.6 percentage points and reached 35.2% in 2013, which amounts to 703 thousand people. This is still below the level of 2008 when only 33.8% of total population was at risk of poverty or social exclusion, but it is by 28 thousand people less than a year ago when this indicator was 731 thousand or 36.2%. Out of these, the authors have assessed two most vulnerable groups: children and elderly people (age group – over 65) (*Central Statistical Bureau of Latvia, 2013*). Figures for children at risk of poverty or social exclusion show that, of total population, 38.4% were at risk of poverty or social inclusion, which, although being by 1.6 percentage points lower than a year before, is still by 6.2 percentage points higher than the pre-crisis level.

In Latvia, most interesting figures can be seen for the age group “over 65”, where the at-risk-of-poverty or social exclusion rates have been decreasing rapidly even during the crisis period with a slight increase in 2013 by 2.5 percentage

points. Overall decrease for this age group compared to the highest rate in 2008, which is the before-crisis level, is 22.6 percentage points.

The at-risk-of-poverty rate in Latvia had increased from 19.4% in 2005 to 26.4% in 2009 and decreased to 19.4% in 2013. Households with dependent children and a single parent (38.3%), as well as households with 3 or more children and both parents (33.2%) were at the highest risk of poverty (*Central Statistical Bureau of Latvia, 2013*).

The at-risk-of-poverty rate or the share of the population below the poverty line increased during the period when the total income of the population was increasing substantially and the unemployment rate was comparatively low. This means that the increase in the income of the population was unequal and not all people were able to adapt to the changes and benefit from the growth opportunities.

Table 2 Social poverty assessment in Latvia

	2005	2006	2007	2008	2009	2010	2011	2012	2013
At risk of poverty or social exclusion (% of total population)	45.8	41.4	36.0	33.8	37.4	38.1	40.4	36.2	35.2
Children at risk of poverty or social exclusion (% of total population)	45.7	42.7	32.8	32.4	38.4	42.2	44.1	40.0	38.4
The elderly (over 65 years) at risk of poverty or social exclusion (% of total population)	55.3	51.8	51.4	58.8	55.5	36.8	33.0	33.7	36.2
At-risk-of-poverty rate (% of total population)	19.4	23.5	21.2	25.9	26.4	20.9	19.0	19.2	19.4

Source: author's construction and calculation based on the Ministry of Welfare, the Ministry of Economics, Eurostat data

In addition to the assessment of the risk of poverty and social inclusion, the situation with household disposable income should also be appraised. In 2012, household disposable income at current prices increased by 5.3% and reached euro 321 per household member monthly, as compared to euro 304 in 2011, which exceeds the level of 2007, that is, euro 316. Income rise at constant prices (considering inflation) accounted for 3%. The amount is still below the pre-crisis level of 2008, when household disposable income at current prices reached euro 355 (*Central Statistical Bureau of Latvia, 2013*).

When assessing the situation in a regional dimension, it becomes obvious that the most notable increase in household disposable income has been recorded in Riga (8.7%), while the income rise in regions varied among 4.6% in Vidzeme, 4.1% in Kurzeme, 3.9% in Latgale and 3.4% in Zemgale. It is important to note that in 2012 the income gap between regions increased: income in the Riga households reached 121%, in Pierīga – 105%, in Kurzeme – 96%, in Zemgale – 87%, in Vidzeme – 81% and in Latgale – 75% of the national average.

The following challenges need to be tackled to reduce the high poverty rate in Latvia:

- Income inequality, including low income of the employed and rather high tax burden on low income employees (the problem of the ‘working poor’);
- Limited budget resources in the upcoming years;
- Insufficient availability of various services, and territories lagging behind in terms of service provision.

The key priority in reducing poverty and social exclusion is the increase in income from paid work, highlighting families with children as a special target group (*The Sustainable Development Strategy of Latvia until 2030*). This measure complies with the priorities of the Annual Growth Survey 2013 to tackle unemployment and the social consequences of the crisis, facilitate the achievement of employment, poverty and social exclusion targets of the Europe 2020 strategy and the implementation of the flagship initiative European platform against poverty.

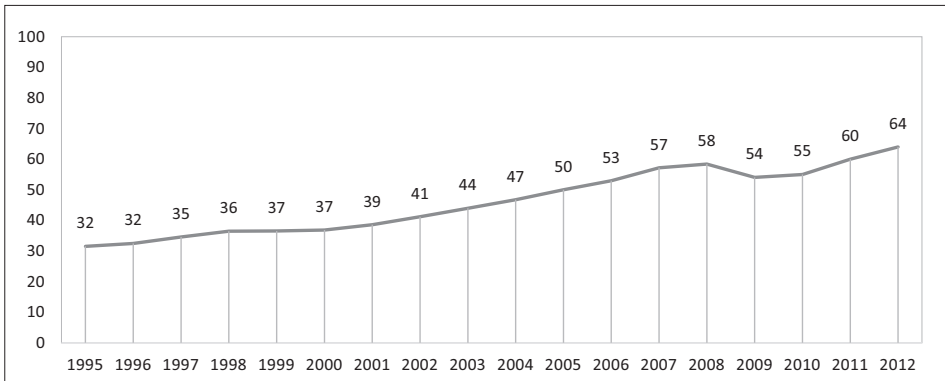
CATCHING UP TREND OF LATVIA WITH EU-28 LEVEL

Convergence reflects the degree of progress, while catch-up measures the distance to be travelled. Economic theory provides a wide set of indicators for measuring convergence of one country with another or to a set of others. Here we have taken to indicators. However, the majority of these indicators use the data of GDP per capita in PPS.

Till now Latvia’s catching-up trend has never been assessed in a systematic way based on the latest developments in economic literature on convergence theories. To amend this, significant improvement and efforts are needed to assess Latvia’s situation based on different approaches set out in economic literature.

For this article and analysis the authors have chosen two indicators which use the data of GDP per capita in PPS as the main data.

First, let us recall the achievements made so far. In the case of Latvia, Eurostat data show a continued tendency towards convergence with the EU-28 level.



Source: author's construction based on Eurostat

Figure 1 **Convergence level of Latvia's GDP per capita with EU 28 (EU-28 = 100)**

In convergence estimation, a new measure is used for a calculate country's convergence towards the average EU-28 level (Halmai P., Vasary V., 2010). They introduced catch-up rate, which is calculated as follows:

$$\text{Catch - up rate} = 100 * \frac{\Delta(y_{it} - y_t^*)}{(y_{it-1} - y_{t-1}^*)} \quad (1)$$

In this formula (1): y_i is the level of GDP per capita at PPS for country i at time t ;
 y_t^* is the average of y_{it} for the EU-28;
 Δ indicates the difference between t and $t-1$;
 y_t^* is the weighted average of the EU-28.

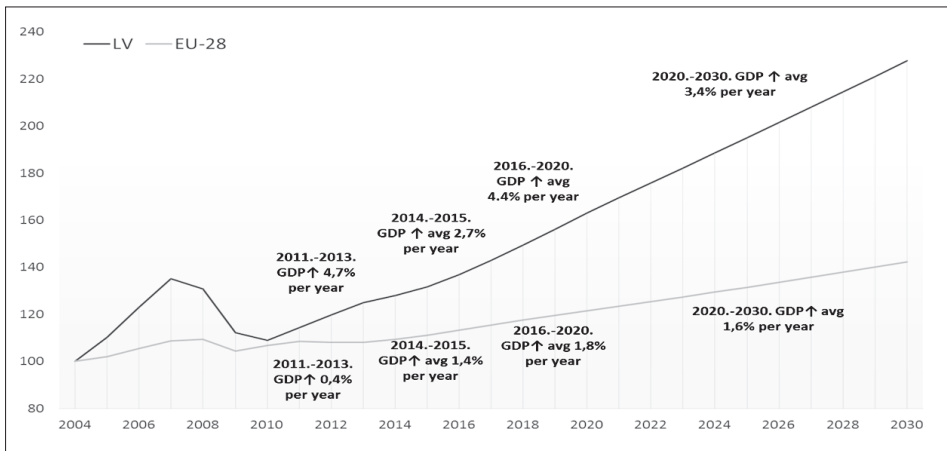
The catch-up rate is calculated based on the historical actual growth rate. It provides a framework for ex-post analysis of the catching up dynamism. In the case of negative catch-up rates the disparity between the country concerned and the EU average decreases, while the positive catch-up rate shows an increase in this difference.

Looking back at Latvia's economic development, several cycles of development can be seen –ending up in the crisis. First, in the period from 1998 to 2000, the average catch-up rate was 4.24, which indicates that Latvia had not undergone any convergence, and difference between Latvia and EU-28 was increasing. In the period from 2001 to 2008, that is, before the crisis, Latvia's average catch-up rate was -1.76, which means, that during this time, Latvia' convergence with EU-28 had increased. It is also visible in Figure 1, where GDP per capita increased from 39% of EU-28 level in 2001 up to 58% in 2008. After Latvia emerged from the global financial crisis in 2011, the average catch-up rate climbed to -8.62, which indicates a rapid convergence.

The GDP data for the period from 2001 to 2008 demonstrate the average GDP growth rate of 7.3% in Latvia, while the respective figure in the EU-28 area was 2.1%.

Comparing the catch-up rate with the GDP growth trends it can be concluded that to achieve Latvia’s convergence with the EU-28 with a catch-up rate of 1.76, Latvia’s GDP growth needs to be by 5.2 percentage points faster than that for the EU-28. In other words, one can conclude that every percentage point of Latvia’s GDP growth which exceeds the EU-28 GDP growth increases convergence at a catch-up rate of 0.338.

Based on the authors’ conclusion, further convergence can be predicted for the future (*National Development Plan of Latvia for 2014-2020, 2012*). Forecasts from the Ministry of Economics of Latvia identify trends in Latvia’s GDP growth for 2016-2020 at the level of 4.4% per year, with a following slowdown of the growth rate at the level of 3.4%.



Source: author’s construction based on the Ministry of Economics, the European Commission

Figure 2 Forecasted GDP growth rates (2004 = 100, comparable prices)

In comparison, the European Commission forecasts the EU’s GDP growth for 2014–2015 at the average level of 1.4% per year with a slightly increasing level of the average GDP of 1.8 for the time period of 2016–2020 and a diminishing development rate of 1.6% per year for 2020–2030 (European Commission, 2013). This means that Latvia’s GDP growth will exceed the EU-28 GDP growth by 1.3 percentage points over the period of 2014–2015, by 2.6 percentage points in the period 2016–2020 and by 1.8 percentage points during the period of 2020–2030. Conversion using the data calculated on the basis of historical trends has resulted in the forecasted average annual catch-up rate of 0.44 for the period of 2014–2015, of 0.88 for the period of 2016–2020 and of 0.609 for the period 2020–2030. As described earlier in this article, the catch-up rate provides the necessary information about the development of convergence, but not the forecasted level of it.

To assess the forecasted level of convergence of Latvia's GDP per capita with the EU-28 level the authors have referred back to the GDP and GDP per capita development in a comparable period of 2001–2008. The average GDP per capita growth rate towards the EU-28 level over this period was 2.69 percentage points annually, while the data for the period from 2001 to 2008 show the average GDP growth rate of 7.3% in Latvia, and of 2.1%, in the EU-28. Both growth rate figures allow the authors to calculate coherence between the GDP growth rate and the development of GDP per capita. The authors have calculated that every percentage point by which Latvia's GDP growth rate exceeds the EU-28 GDP growth rate increases the GDP per capita convergence level by 0.517.

The calculation is based on a historical data set for economic development in Latvia, which is similar to those forecasted for future. Taking this into account, an estimate can be made of the advancement of Latvia's GDP per capita level compared to the EU-28 for the coming years. The authors have chosen to assess a short term, a medium term, and a long term forecast. According to their calculations based on the data mentioned earlier, the level of Latvia's GDP per capita compared to the EU-28 level in 2015 will increase up to 70%, with a future increase of up to 75% in 2020, and up to 87% in 2030. This calculation renders a macro level forecast, taking into account that other development factors will be relevant to those that were into force from 2001 through to 2008, the period when Latvia achieved significant progress in Cohesion Policy.

The socio-economic growth in Latvia revealed the different dynamics of several indicators – GDP, employment and unemployment, wages – besides an increase in their absolute values until 2011. Social situation in Latvia is improving development level after a minor shock influenced by crisis. Until now the process of social convergence in Latvia has demonstrated a steady growth.

CONCLUSIONS, PROPOSALS, RECOMMENDATIONS

1. Convergence policy must be connected with an outlook for the likely future evolution of the national economy. In particular, as experience has shown, the sustainability and robustness of the convergence process after the euro adoption is to a significant extent endogenous and it depends on a Member State's domestic policy orientations after it has joined the euro area. Convergence processes for the EU states must be based on the strong economic growth of GDP per capita.
2. Convergence policy is a place-based policy, which gives a role to each European state in the sense that it is not an obstacle to the optimal allocation of economic activity, but can become a source of growth on its own. Recent economic theory confirms this approach in numerous case studies which show that 'geography matters' and that convergence policy can make a difference. In fact, the EU has achieved impressive economic and social convergence since 1988. At the level of the state, relatively strong economic growth of those with

a low GDP per capita has meant that EU state have been converging living standards.

3. Convergence in the European Union over the past years demonstrated a relatively steady pace. The inverse relationship between growth and the level of income is considered β -convergence. If this factor is present, poorer countries get closer to the richer ones. Socio-economic convergence of the new Member States such as Latvia has been considered as one of the most important economic development targets in the EU. It supports job creation, competitiveness, economic growth, improved quality of life, and sustainable development.
4. The main tasks of Latvian economy for the recent years 2014–2020 are taken as the important priorities developing of social legislation, situation in the income growth, improving pension policy and education system, and the labour market development in order to reach the goals of the Europe 2020 strategy.
5. The situation in social policy in Latvia continues improving. According to the authors' calculation based on the methodological framework of the latest convergence theories, the level of Latvia's GDP per capita compared to the EU-28 level in 2015 will increase to 68.1%, with future increase of up to 75.3% in 2020 and up to 87.0% in 2030.
6. European national economic strategies have been related to the influence of several internal and external factors. Latvia' participation in EU convergence process can be sufficiently supports for improvement sustainable development, job creation, economic and competitiveness growth, and quality of life. The socio-economic development of Latvia reflects the goals and tasks defined by EU programming documents and social strategies. In order to improve the informational background, the authors offer a unified flowchart of research-related information on the assessment of and forecasts for the social situation and convergence in Latvia.
7. EU national economic strategies are related to the influence of several internal and external factors. Latvia's participation in EU convergence process can guarantee political stability and sufficiently consistent implementation of economic and social strategies and programmes. The development of economic situation in Latvia and forecasts about its future will allow Latvia to increase the level of its social convergence with the EU-28 level in a sustainable, but strongly developed level, reaching 87.0% in 2030.
8. Taking into account the current socio-economic problems in the EU countries, the European cohesion policy should devote more attention to countries with a minimum income level and high income disparity with the aim of reducing inequality and enhancing social convergence among EU Member States.
9. The macroeconomic and social development scenario in Latvia for 2014–2020 is based on the assumption that the situation in the euro area will continue stabilising and gradually return to growth from 2014 onwards. Therefore, with growth resuming in the euro area and in Latvia's major external market –

the EU, external demand for the exports of Latvian goods and services is expected to increase, thus promoting further economic and social development of Latvia.

10. Employees in Latvia also become more and more aware of the possibilities offered by the global EU market. It requires not only a structure of national social models, but also on the strategic choice of countries concerning the social policy. The studies of Latvian future social development and governmental decisions need a pragmatic approach to financing in order to create jobs and reduce the poverty level and social disparities in the national economy.
11. The overall enhancement of socio-economic policy is connected with investment flows, new technologies and productivity growth. Recent development trends in the Latvian economy, which shows a significant GDP increase compared to other EU countries, were taken into account in order to forecast future growth with an expected average annual GDP increase by 3.5–4.5% and this is taken into account when establishing priorities for social legislation, situation with the income growth, improvements to the pension policy and the education system, and expanding the labour market.

REFERENCES

- Barro, R. J., Sala-i-Martin, X., 2004. *Economic growth*. 2nd ed. The MIT Press, (pp. 44-51, 74-76), England, London.
- Barro, R. J., Lee, J.-W., 2010. *A new data set of educational attainment in the world, 1950–2010*. Working Paper, No. 15902, 2010. Available at: <http://www.nber.org/papers/w15902>
- Barroso, J. M., 2013. *European Parliament plenary debate on the European Council, 24-25 October 2013*. [Online] Available at: <http://ec.europa.eu/eu2020/pdf>. [Accessed 20 October 2013].
- Becker, E., von Ehrlich, M., Fenge, R., 2008. *Going NUTS: the effect of EU structural funds on regional performance*, CESifo Working Paper, pp. 24-95.
- Checherita, C., Nickel, C., Rother, P., 2009. *The Role of Fiscal Transfers for Regional Economic Convergence in Europe*, ECB Working Paper, pp. 10-29.
- Country –Specific Recommendations-Final Version*, Approved by the Council. European Commission, 2013. Available at: <http://ec.europa.eu/europa2020/europa-2020-in-your-country/latvia>
- Central Statistical Bureau of Latvia. 2012-2013, *Statistical Yearbook of Latvia*. [Online] Available at: <http://www.csb.gov.lv/> [Accessed 5 January 2014].
- Convergence Report 2013 on Latvia*, 05.12.2013. European Economy Nr. 3/2013. pp. 45-46. Available at: http://ec.europa.eu/economy_finance
- Cunha, F., Heckman, J. J., Lochner, L., Masterov, D. V., 2006. *Interpreting the Evidence on Life Cycle Skill Formation*
- Dall'erba, S. and Le Gallo, J., 2008. *Regional convergence and the impact of European structural funds 1989-1999: A Spatial Econometric Analysis*, Papers in Regional Science, 87(2), pp. 219-244.
- Decent Life for All: Ending Poverty and Giving the World a Sustainable Future*, COM (2013) 92 final (p. 6). Available at: <http://ec.europa.eu/europe2020/>

- Directorate-General for Economic and Financial Affairs. *European Forecast Autumn 2013*. Euroean Economy, 7/2013. Available at: http://ec.europa.eu/economy_finance
- European Commission. Europe 2020 targets., 2013. *The 5 targets for the EU in 2020*. [Online] Available at: <http://ec.europa.eu/europe2020/targets>. [Accessed 9 December 2013].
- European Commission., 2013. *Country-specific Recommendations-final version, approved by the Council*. [Online] Available at:<http://ec.europa.eu/europa2020/europa2020-in-your-country/latvia/>. [Accessed 5 May 2014].
- European Commission, 2012. *Regional Policy – Inforegio*. [Online] Available at: http://ec.europa.eu/regional_policy/what/europe2020/index_en.cfm. [Accessed 5 January 2014].
- Eurostat, 2014, *Income and living conditions database*., [Online] Available at: http://epp.eurostat.ec.europa.eu/portal/page/portal/income_social_inclusion_living_conditions/data/database. [Accessed 8 January 2014].
- European Commission, 2007. *Cohesion Policy 2007-2013. Commentaries and Official Texts*. *Official Journal of the European Union*., January 2007, p. 10.
- Halmaj, P., Vasary, V., 2010. *Real Convergence in the new Member States of the European Union*, *The European Journal of Comparative Economics*, Vol.7, Nr.1, pp. 229-253.
- Lein-Rupperecht, S., Leon-Ledesma, M., Nerlich, C., 2007. *How is Real Convergence Driving Nominal Convergence in the new EU Member States? European Working Paper*, Series No 82, p. 21-30.
- Marzinoto, B., 2012. *The growth effects of EU cohesion policy: a Meta-analysis*. *Brugel Working Paper 2012/14*, p. 5-17.
- Marzinotto, B., Pisani-Ferry, J., Wolff, G., 2011. *An action plan for the European leaders, Policy Contribution 2011/09*, Bruegel.
- Ministry of Economics of the Republic of Latvia, 2013. *Report on Economic Development of Latvia, June 2013*. [Online] Available at: <http://www.em.gov.lv>. [Accessed 7 January 2014].
- Ministry of Economics Republic of Latvia, 2010. *Economic Development of Latvia “Europe 2020” Strategy*. [Online] Available at: <http://www.em.gov.lv>. [Accessed 19 December 2013].
- Nallari, R., *Growing Out of Crisis. Development Outreach*, Volume 11, Nr. 3, December 2009: World Bank Institute. UNDP.
- National Development Plan of Latvia for 2014-2020* , 2012. Available at: [http://www.pkc.gov.lv/NAP2020/20121220/Report on Economic Development of Latvia, June, 2013](http://www.pkc.gov.lv/NAP2020/20121220/Report%20on%20Economic%20Development%20of%20Latvia,%20June%202013). Riga: Ministry of Economics of the Republic of Latvia. Available from internet: <http://www.em.gov.lv/>
- Ramajo, J., Marquez, M., Hewings, G., Salinas, M., 2008. *Spatial heterogeneity and interregional spillovers in the European Union: do cohesion policies encourage convergence across regions?*, *European Economic Review*, 52(3), p. 551-567.
- Rodríguez-Pose, A., Ezcurra, R., 2010. *Does decentralisation matter for regional disparities? A crosscountry analysis*, *Journal of Economic Geography*, 10(5), p. 619-644.
- Sachs, J. D., Larrain, F. B., 1993. *Macro-economics in the Global Economy()*. *Harvester Wheatsheaf*. New York, pp. 552-558.
- Santos, I., 2008. *Is structural spending on sound foundations?*, Policy Brief 2008/02, Bruegel.
- The Sustainable Development Strategy of Latvia until 2030*. Available at: http://www.latvija2030.lv/upload/latvija2030_saeima.pdf

- Statistical Yearbook of Latvia*, 2012. CSB Data, 2013. Available at: <http://www.csb.gov.lv/>
- Technical paper from the CPMR General Secretariat, 2012. *Conditionality in Regional Policy after 2013: the challenges for the regions*. Available at: <http://www.crpm.org/pub/>
- The Cabinet of Ministers of the Republic of Latvia, 2012. *National Development Plan of Latvia for 2014-2020*. [Online] Available at: <http://www.pkc.gov.lv/NAP2020/20121220>. [Accessed 19 December 2013].
- The Organisation for Economic Co-operation and Development (OECD), 2013. *How's life? 2013 Measuring well-being*, [Online] Available at: <http://www.oecd.org/statistics/howslife.htm>. [Accessed: 28 December 2013].
- United Nations, Human Development Report, 2013. *Human Development Index*. [online] Available at: <http://www.un.org/en/>
- World Economic Outlook Update, 2013. [online] Available at: <http://www.imf.org/extend/2013>

THE IMPACT OF ECONOMIC FREEDOM ON THE ATTRACTION OF FOREIGN DIRECT INVESTMENT IN THE BALTICS

EDGARS ROŽĀNS

Abstract

In our increasingly globalised economy, global competitiveness of countries and means to measure are also growing in significance. One the strongest motivating forces behind competitiveness is the ability to improve chances for attracting foreign direct investment (FDI), which in turn is a very substantial factor for increasing prosperity. One of the ways to measure it is by comparing the extent of economic freedom that countries have, which, as surveys show, can also largely explain differences in living standards across the world. The purpose of this article was to examine the effect of economic freedom on the attraction of FDI in the Baltics. By using the Index of Economic Freedom with its 10 components, and comparing the historic scores of economic freedom in the economically homogenous Baltic states with their attracted foreign FDI over the years, it becomes evident that economic freedom has had an impact on promotion of these investments, which can also be partly explained by differences in the enforcement of intellectual property rights.

Keywords: Foreign direct investment in the Baltics; economic freedom and its components; competitiveness; The Index of Economic Freedom; intellectual property rights

JEL code: B12; E22; E61; E62; E63; E66; F43; F63; H50; I00; O34; O52; O57; P14

INTRODUCTION

In our increasingly globalised economy, global competitiveness of countries becomes only exponentially more important. Not surprisingly, this matter gets more attention from national countries, researchers and their represented institutions and organisations, as well as from others concerned with the topic.

Countries, in order to maintain their competitiveness in the global economy, devote significant resources to analysing it and taking the appropriate steps towards necessary improvements, which usually involve mid-term and long-term policy planning. Researchers with the institutions and organisations they represent have invested a great deal of effort into establishing of methodologies to evaluate competitiveness of countries, despite its complicated nature.

Nevertheless, in spite of a huge criticism these indices often get, also largely due to different misunderstandings about their role and goals, the overall

trends generally show that the same countries earn the same places from index to index, which are also in accordance with their relative wealth and quality of life, when used in comparison with other countries. To a large extent, based on the free market capitalism philosophy of the 18th century Scottish philosopher and economist Adams Smith, one of the means that serves to evaluate economic competitiveness of countries is to assess the extent of their economic freedom.

The aim of this article is to investigate how competitiveness through economic freedom has affected the attraction of FDI in the Baltic economies. All three of these countries¹ are economically very homogenous, thus being ideally suited for the evaluation of how various policies affect an economy.

To achieve this aim, a number of tasks were set. These tasks in the order of sequence are as follows:

- do a review of literature on competitiveness and economic freedom;
- look at the most popular economic freedom indices;
- find the reasoning for economic freedom and its composing components;
- investigate how economic freedom has affected the attraction of FDI in the Baltics; and
- examine the current situation of economic freedom in the Baltics.

To achieve the above-mentioned tasks, mainly descriptive, analytical and comparative methods were used, as well as others to a lesser extent, for example, the historical method was employed to explore how economic freedom has impacted the attraction of FDI in the region.

Accordingly, to evaluate how economic freedom has affected the attraction of FDI in the Baltic States, the remainder of this paper is structured as follows. Section 2 provides a brief review of literature about this topic, Section 3 covers The Index of Economic Freedom and other indices measuring economic freedom, Section 4 explains the reasoning for economic freedom and its components, Section 5 looks at the economic freedom situation in the Baltic states and how it has influenced the attraction of FDI in the region, and finally, Section 6 outlines the conclusions and interpretations derived from this research.

BRIEF REVIEW OF LITERATURE

Depending on the context in which competitiveness is being described, definitions of it also differ. Given that in this article competitiveness is looked at in the context of national competitiveness, the author went through some of the definitions that exist for explaining it.

Some of the most prominent researchers on competitiveness, Mercedes Delgado, Christian Ketels, Michael Porter and Scott Stern, in their joint research about the factors defining national competitiveness also accentuate

¹ Estonia, Latvia and Lithuania.

that the national competitiveness definitions are very different, depending on the point of focus. Some equate competitiveness with the ability to achieve certain overall outcomes, such as a high standard of living and economic growth. Other definitions focus on the ability to achieve specific economic outcomes such as job creation, exports, or FDI. Still other definitions see competitiveness as defined by specific local conditions such as low wages, stable unit labour costs, a balanced budget, or a competitive exchange rate to support the current account surplus (Delgado et al., 2012).

Possibly the best-known researcher of competitiveness, the Harvard University professor Michael Porter, has said on the matter of national competitiveness that a nation's prosperity depends on its competitiveness, which is based on the productivity with which it produces goods and services. Sound macroeconomic policies and stable political and legal institutions are necessary, but not sufficient conditions to ensure a prosperous economy. Competitiveness is rooted in a nation's microeconomic fundamentals – the sophistication of company operations and strategies and the quality of the microeconomic business environment in which companies compete. An understanding of the microeconomic foundations of competitiveness is fundamental to national economic policy (Porter, 2014).

Looking from this perspective, competitiveness becomes strongly connected with productivity. There is a wide belief, backed up by numerous pieces of research, that productiveness is one of the central aspects to explain differences in wealth of the nations.

Structural policy documents such as the Policy Agenda for Growth, published by the Organization for Economic Co-operation and Development (OECD, 2005) and the European Commission 2020 Strategy (EC, 2010) are largely based on the competitiveness enhancing activities which promote productivity.

Largely based on the beliefs of the aforementioned 18th century philosopher and economist Adams Smith regarding the benefits of the free market, which were published as early as in the year 1776 in his famous book “An inquiry into the nature and causes of the wealth of nations”, competitiveness is looked up from the standpoint of economic freedom. In the years to follow, it has been backed up by countless research, showing the contribution of economic freedom on the wealth of nations.

In the era of mercantile economic thinking, Smith came up with totally revolutionary and novel ideas. He argued that regulation of commerce is unproductive, hindering people from investing their own resources into actions where they see the best economic use of it. By not developing free trade and competition, introducing tariffs, establishing monopolies and subsidy systems, consumers eventually are forced to pay a higher price than they would under free competition conditions.

Given these reasons, Smith believed that the role of the state has to be limited, in order to not distort the free market economy. Its major role is to

ensure external and internal safety of a state, the rule of law, the development of infrastructure and promotion of education. That of course can be done through taxation, which Smith does not deny, but underlining at the same time that the level of taxation should be at the level that citizens can afford. However, he would still oppose the taxation of capital, because availability of capital is one of the productivity pillars.

As concerns productivity, Smith also believed that labour specialisation is critical for the labour productivity, which, through economic profit making, leads to the accumulation of capital, which in turn allows investing in even more productive devices and processes.

Many contemporary economists have also tried to explain the concept of economic freedom. Definitions of this concept also vary, just like for the concept of competitiveness; nevertheless, the common thing here is that they all put emphasis on the principles of free market trade and private property rights.

Economists such as Lawrence McQuillan, Michael Maloney, Eric Daniels and Brent Eastwood, which in the past have themselves introduced an index of economic freedom for the U.S., describe economic freedom as the right of individuals to pursue their interests through the voluntary exchange of property which is subject to the rule of law. It is this kind of economic freedom that lays sound foundations for an economy. Economic freedom under a minimal extent of state interference, in order to ensure safety and reliability of a legislative basis, judicial or court rules, are critically important, because otherwise it would only serve as a hindrance for economic freedom. State rules that ensure these rights promote economic freedom.

Nevertheless, there are researchers that cast doubt on the special merits of economic freedom in the global economy. One of the most prominent of them is Paul Krugman. He argues that when one compares countries, the level of productivity is the thing that really matters, not competitiveness measures, because countries do not compete with each other in any relevant manner and focusing on competitiveness leads only to destructive state policies.

One can only partially agree to this statement. As outlined above, there is undoubtedly a correlation between competitiveness and productivity improvements, and taking this into consideration, it would be wrong for countries to not compare their competitiveness against other economies in this era of continually increasing globalisation, where economies co-operate and at the same time compete with their goods and services in the global market. The words of the 17th century Japanese Buddhist Samurai, Miyamoto Musashi, that it is hard to understand the Universe by exploring only one planet, fit the situation very well.

Krugman is also critical about economic freedom, which he associates with a dominance of foreign companies in countries that for various reasons are in lower stages of economic development, which given their advantage of the level of accumulated capital makes it easy for them to take over local businesses. That

becomes especially evident in times of periodical economic crises, which in turn are often stimulated by asset bubbles that are in part caused by the influx of investment.

Also in the cases of full capital liberalisation, short term speculative investments often evolve in underdeveloped countries, which without sufficiently effective regulatory framework can provoke distress of a financial system (Stiglitz, 2000). However, in the case of foreign direct investment, risks are not so high, given that capital cannot flow away just as swiftly.

Another negative aspect of increasing economic freedom in developing economies is that countries have to go through the phase of increasing inequality (Berggren, 2003), which basically is a result of decreased redistribution.

These of course are not the only negative effects on societies from economic freedom or liberalisation: the author can add factors like, for example, running local enterprises out of business, takeover of competitive firms, enforcing the interests of foreign companies, dependence on foreign capital, deteriorating work rights, harmful manufacturing for the environment, introduction of commercial practices that are not favourable for consumers, as well as presenting danger to survival of national cultures.

All these arguments about the negative side effects of economic freedom are very strong under the conditions of world capitalism, which is dependent on cross-border trade and investments (EC, 2013), and have fully demonstrated their effect on the Baltic economies as transition economies that only regained their independence after the collapse of the Soviet Union. Nevertheless, the short term negative impact of economic freedom is being outweighed by its positive impact in a longer term, as countless studies have shown. When looking at this matter from the standpoint of the Baltic countries, economic freedom is very critical for these small economies, given that they cannot build their prosperity on valuable natural resources like, for example, the Persian Gulf countries, or even on historically accumulated capital like the Scandinavian countries, given the tough historic legacy of the Baltics in the 20th century. Regarding the latter, however, it is important to note that Norway has built its economic prosperity largely thanks to the abundance of natural resources that it possesses.

Another crucial factor is that despite the fact that improvements in economic freedom do not automatically mean greater output, it plays a substantial role in creating a positive image about an economy, which again is important for the attraction of FDI (Berger and Bristow, 2009). That alone means that countries may find it worthwhile to pay some attention to these wildly disputed indices.

Also very importantly, research on economic freedom reveals that although it has its negative effects, overall trends are indicative that countries with higher levels of economic freedom have not only higher gross domestic product per capita and higher growth rates, but also better health care, education system, environment protection (Roberts and Olson, 2013), as well as greater income

equality (Esposito and Zaleski, 1999), and, maybe above all, happiness results (Gropper, 2011). These trends of increasing prosperity with augmenting economic freedom are confirmed even when one compares these results within the territories of countries (Stansel, 2013), (Davies, 2013), among others. However, in various studies opinions differ on the importance of each economic freedom component in acquiring prosperity.

INDEX OF ECONOMIC FREEDOM AND OTHER INDICES MEASURING IT

The Index of Economic Freedom by the Heritage Foundation and The Wall Street Journal has been published annually since 1995. The first report of economic freedom included 101 countries; currently it already covers 186 countries, including even the least free country in the world – North Korea. That is possible given the methodology of the index, which does not require direct involvement of countries to evaluate their level of economic freedom.

The authors of the index approach competitiveness through economic freedom, which according to them is the most important precondition of competitiveness. The less countries are regulated by their governments, enhancing economic freedom, the more competitive and wealthier they will be. Economic freedom is defined as the core right of individuals to manage their own work and property. In an economically free society individuals are free to work, produce, consume and invest as they like, economically free countries let the workforce, capital and goods move freely, abstaining from interference and restrictions more than it is necessary for ensuring freedom as such (The Heritage Foundation, 2014; Vanags, 2005).

The Index of Economic Freedom methodology is based on 10 components composing economic freedom, which all are grouped in 4 pillars where countries perform some kind of regulating functions:

- Rule of Law (property rights, freedom from corruption)
- Limited Government (fiscal freedom, government spending)
- Regulatory Efficiency (business freedom, labour freedom, monetary freedom)
- Open Markets (trade freedom, investment freedom, financial freedom)

In order to achieve a more comprehensive outlook in these four categories of economic freedom, the index evaluates all 10 components on the scale from 0 to 100. All 10 components are weighted equally, given that there has not been any conclusive evidence about which of them play a bigger or lesser role in ensuring economic freedom (Gwartney and Lawson, 2003), as well as for enhancement of economic prosperity (Diaz-Casero et al., 2012), (Carlsson and Lundstrom, 2001), (Heckelmann and Stoup, 2000), giving both surprising and contradictory results, for instance, that trade freedom is not an important factor

for growth, which is contrary not only to countless other studies, but also to contemporary mainstream teachings about the benefits from trade in free market.

Like other indices measuring economic competitiveness and freedom, this index is also not ideal and perfect enough to explain the whole complexity of the subject. Authors of the index admit it themselves, stressing that it has never been their goal. Rather, their goal is to offer data for the exploration of interconnections that exist regarding this matter.

For example, the famous American economist Jeffrey Sachs in his book “The end of poverty: Economic Possibilities of our Time” has proved that a correlation between economic freedom and GDP growth does not always exist. This was illustrated by comparing Switzerland and Uruguay, which, despite their high economic freedom scores, presented sluggish results in economic growth, with China, which, disregarding its relatively low scores of economic freedom, experienced unprecedented economic growth (Sachs, 2005). The same findings, revealing that improvements in economic freedom do not necessarily mean higher economic growth, have also been produced by other research (The Left Business Observer, 2005).

For the sake of objective index advocacy, it must be remembered that the authors of the index are not attempting to explain every case of economic growth, since the science of economics is very complex and many other factors come in to equation to explain economic growth, like in this instance, China’s comparative advantage of using economies of scale. Also one has to keep in mind dynamic and static growth factors. Countries like China, which are in the dynamic growth phase, have higher GDP growth potential than countries like Switzerland, which is in the static growth phase. This has to be kept in mind also looking at the other indices of competitiveness, when trying to explain economic growth.

Shortcomings of The Index of Economic Freedom have been investigated by Austrian Ludwig von Mises institute researcher Stefan Karlsson, showing a number of deficiencies in its methodology, its components, and their choice as such. The IEF has been heavily criticised by state officials as well (The Business Intelligence, 2008), casting doubt on some of the appraisals by contradicting them with appraisals in other indices and surveys. Another common criticism that the index receives is that given their authors, representing the Heritage Foundation and The Wall Street Journal, they are openly lobbying interests of the private sector. Also this index gathers its information to give appraisals for various components pretty much only from US institutions or international organisations that are based in that country.

Without the already reviewed the Index of Economic freedom, published by the Heritage Foundation and The Wall Street Journal, currently exist and before have existed several other indices to measure economic freedom. The other of the most well-known indices that measure this matter is the Economic Freedom of the World index, established by the Canadian based Fraser Institute (Gwartney

and Lawson, 2013), and by its structure being very similar to The Index of Economic Freedom, not surprisingly giving also very similar scores (Hanke and Walters, 1997). The EFW report has been already published since the year 1980, and unlike the IEF, it is using more quantifiable data (Gwartney and Lawson, 2003), and information mostly from third parties, that is, international organisations. At the current moment the EFW index compares economic freedom data about 152 countries, which is less than covered by the IEF.

The authors of the EFW define economic freedom as the right of individuals to have personal choice, voluntary exchange, freedom to compete, as well as personal and property safety. When economic freedom exists, it is people who will decide what goods and services will be produced. Clearly, people will take part in exchanges that are beneficial for both sides. Personal property is the foundations for economic freedom, for those reason individuals have the right to choose how they will use their time and skills, and at the same time they do not have the right over the time, skills and resources of others, meaning that they do not have the right to demand from others (Gwartney and Lawson, 2003).

The index itself consists of 42 factors, which are divided into 5 economic freedom pillars: 1) Size of Government; 2) Legal Structure and Security of Property Rights; 3) Sound Money; 4) Freedom to Trade with Foreigners; 5) Regulation of Credit, Labour, and Business.

As in the case of the IEF, the EFW also adds up all the component scores to obtain the average score afterwards, not putting any additional weight on any of the components or factors.

Other less widespread indices to measure economic freedom exist without these two, measuring it globally, and, in cases of larger countries, measuring it on a national scale. For example, besides the aforementioned indices used in North America, two indices have been used to measure the level of economic freedom in India, one of them applying the methodology obtained from the Fraser Institute.

THE REASONING FOR ECONOMIC FREEDOM AND ITS COMPONENTS

The vital positive impact of economic freedom for growth has been proved by a wide number of empirical surveys (Kim, 2014; Berggren, 2003; De Haan and Sturm, 2000, among others). However, opinions differ whether economic freedom explains economic growth in the initial stage of economic development; many studies show that its positive contribution can be felt only at the latter stages and in a longer term. Also importantly enough, it was found by comparing the Index of Economic Freedom data, that growth follows and not precedes improvements in economic freedom (Heckelman, 2000).

Growth can be largely explained by the positive contribution of economic freedom to attracting foreign direct investment (Choong, 2010): it is very

important for productivity improvement, and also basically means improvement in competitiveness, giving greater opportunity for growth which eventually makes it possible to raise capital savings that can be used to invest in further productivity enhancing activities.

That said, it should be recalled here that the attraction of the FDI does not automatically guarantee economic growth (Azman-Saini et al., 2010). The level of economic freedom is very important when attracting investments, since it allows a better absorption of benefits from the presence of multinational corporations, such as transfer of technologies and processes, professional development of workforce, economic opportunities arising from global value chains, reorientation of a country from producing raw materials to manufacturing final product, and a number of other positive contributions to economic development. Results show that in countries where economic freedom is higher, a positive effect from the FDI is higher than in countries with a lesser degree of freedom.

As previously stated, methodologies and components of the both most well-known indices of economic freedom are very similar, thus yielding very similar results (Hanke and Walters, 1997). Therefore, the author of this article, having acquainted himself with the reasoning behind the component choice for the IEF and the EFW (Miller and Kim, 2011; Gwartney and Lawson, 2003), which basically relies on the teachings of the famous Scottish philosopher and economist Adams Smith about the free market principles, and on the work of other scientists, has summarised reasons why these particular components have been chosen for measuring economic freedom, at the same time exploring the scientific reasoning for their necessity in achieving economic prosperity.

The property rights component is important for economic freedom given that obtaining property is one of the main motivating incentives for people to get involved in economic or intellectual activities. If a physical or legal person cannot be sure about the ability to manage resources or property they have produced, it will diminish the person's motivation to invest effort and resources to acquire it, in the case of both material and intellectual property. In order for a subject to feel safe about his property, there is a need for appropriate legislation, which has to be both introduced and implemented through a transparent, independent, honest judicial system, accessible for everyone. It is not only important from an economic point of view, but also from the standpoint of human rights. It is also very important that the court system offers equal attitude, no matter from which country one comes, which becomes even more important in the increasingly globalised economy, not least because it is crucial for the attraction of foreign resources.

The importance of this component has been proven by various surveys. For example, it has been shown that growth in countries with strong property rights, if compared to countries where property rights are weak, is twice as high (Weimer, 1997). It is widely believed that one of the reasons that do not let African countries to fully develop is the lack of appropriate property rights

system like in the Western world (De Soto, 2003). When comparing performance of the former Soviet-occupied countries and the Soviet Union's satellite states in Eastern Europe, the findings show that weak protection of intellectual property rights scares away potential investors in technologically intensive sectors, and impede the deriving of the benefits associated with the presence of multinational corporations, which, in the best case scenario, get involved in projects that deal with production distribution, not manufacturing (Javorcik, 2004).

The freedom from corruption component is important for economic freedom since corruption depletes national resources by circumventing the principles of competition and effectiveness. Besides, corruption does not end with plain bribery and bribe-taking to achieve a certain favourable outcome, it comes in various shapes and forms, such as embezzlement, extortion, nepotism and others. As a consequence of all these actions narrow groups of people get privileges at the expense of others, and eventually at the expense of the society as a whole. Threats of corruption are especially acute in economically and politically unfree and constrained countries, where private initiatives have limited opportunities to acquire resources, and authority and power to allocate those is concentrated in the hands of government officials. If this environment is complemented by low levels of transparency, which usually is the case, it creates very fertile ground for corruption.

The importance of inclusion of the freedom from corruption component has been recognised by a wide number of surveys, showing the negative impact of corruption on economies. It has been discovered that deterioration by one standard point in the corruption index lowers investments at the rate of 2.46%, which in turn suppresses growth by 0.34% (Pellegrini and Gerlagh, 2004). That in turn decreases absolute public expenditure, including in such important fields for long-term economic development as education and infrastructure (Mauro, 1997). For example, it has also been shown that the risk of corruption becomes more acute in countries where more than 50 days are needed to register a business (Dreher, 2013), which points to deficiencies in the domestic regulatory environment pushing people to accelerate legal procedures of registering an undertaking with bribes or not registering one at all, thus possibly exerting a further negative impact on the well-being, and in many cases even safety, of the society.

The government expenditures component has been included in the measuring of economic freedom because a too large government share in gross domestic product impedes private initiative, and by that, productivity, which rises as a result of competition. However, the positive effect from public expenditure that enhances the quality of infrastructure, education, the rule of law, etc., is acknowledged, under the circumstances where by means of free market forces it is not possible to get the best outcome, and which eventually supports growth and efficiency of the private sector. From the point of view of fundamental economic freedom the argument goes that the larger share of a country's resources goes

through the state budget, the lesser is economic freedom of the society, which in turn gives rise to many risks from the political and civil freedom perspective.

The other of the government size pillars is the fiscal freedom component, which has reasoning very similar to that behind the government size component, namely, that state interference in the free market economy with too high a taxation level hinders economic growth, not only decreasing motivation for the society to involve in commerce, but also impeding productivity and growth, since increasing the overall tax burden decreases entrepreneurship encouraging consumption and lowers the amount of total capital that can be reinvested back into economic development. From the point of view of fundamental economic freedom, the government by levying taxes on income earned by one part of the society, to later transfer it to another part of the society, restricts the economic freedom of the people.

Given that both of these government size components are hard to separate one from the other, the results of empirical surveys about them were approached together. Still, the inclusion of these components among factors instrumental for achieving economic prosperity can be the most disputable approach: just by primitively looking at the bottom and top of scores in these components, one can see that, according to the methodology of The Index of Economic Freedom, the lowest scores have been received by countries that are relatively very prosperous, and the highest scores have been given to countries that are relatively poor. Nevertheless, research shows that an oversized government in its economy decreases economic activity (Diaz-Casero et al., 2012), thus negatively impacting growth (Bergh and Karlsson, 2010), increasing unemployment (Feldmann, 2006). Still, as regards growth, it has been mentioned that countries, through properly functioning institutions, can diminish the negative effect from taxation on enterprises, or even eventually gain from it through successful redistribution, which promotes economic growth in a longer term, thus positively affecting economic growth and employment.

The business freedom component is important for economic freedom given that excessive regulatory rules for business impede its development, consuming resources, which in turn lowers productivity. In the case of too complicated and difficult regulatory requirements in relation to various kinds of economic activity, many serious risks to an economy come into play, for example, the risk of corruption increases in the public sector due emerging motivation for corruption, while the share of unregistered shadow economy is increasing in the private sector, because it becomes much easier to not register economic activity at all.

The importance of the business freedom has been proved in vast amounts of research literature. One of the pieces of research shows that by improving a country's positions in the Doing Business index from the lowest performing quartile to the highest performing, on average gives a 2.3% higher growth of annual gross domestic product (Djankov, 2006), having an even bigger positive effect on economic growth than increasing the number of pupils who have

received the basic and high school education. Summarising the complex influence of the insolvency factor, there is a wide consensus that a well-functioning insolvency system affects positively economic dynamism in the private sector (Klapper, 2011); through faster return of funds, saving businesses, accessibility of funds and other factors. Another of the business freedom composing indicators – dealing with construction permits – is not only important for safeguarding of people, considering that excessive requirements enhance disregard for the rules (Moullier, 2009), but also from the economical point of view, for example, attraction of foreign direct investment, which advances economy.

Labour freedom is important for economic freedom given that the labour force market in its essence is just like other markets of resources, and just like in any other market, artificial regulating of it through means of setting minimum wages, centralised salary setting, hiring and dismissal conditions, unemployment allowances and other regulations, which are not based on the principles of free market exchange, are not desirable for productivity and development of an economy. From the standpoint of fundamental economic freedom people have the right to work where and how much they like, if not, their economic freedom is restricted.

This component has been justified by various surveys. It has been shown that excessive workforce market regulation decreases employment and increases unemployment, both in Europe (Munkhammar, 2011), and in the member countries of the OECD as a whole (Siebert, 1997). In the case of Europe this is very important given the trends of globalisation and ageing population. Besides the fact that excessive workforce regulation hinders attraction of the foreign direct investment, it is also significant that in case of success, movement from an enterprise where new knowledge has been acquired to a local enterprise is more difficult, making knowledge transfer from multinational corporations troublesome (Fosfuri, 2001), which is not a positive thing for the development of knowledge based economy.

Monetary freedom is important for economic freedom because money is an instrument of value exchange and accumulation, which loses its value with inflation, taking away the motivation for the subject to acquire it. If inflation is not constrained and is too high, it makes long term planning harder, raising expenses, distorting comparative prices, etc. A controlled and desirably low level of inflation allows for better planning in a longer term, sustaining price stability and competitiveness. There is also a widespread belief among liberal approach economists that price controls worsen market effectiveness and lead to deficits and shortages, as well as promote inflation in a longer term, so due to these reasons direct or indirect price controls through various subsidies and state enterprises are not desirable.

Reasoning for the role of this component in achieving economic development can be found in numerous literary sources. It is accentuated in one of them that monetary freedom is one of the most critical components for economic

freedom (Ayal and Karras, 1998) which promotes the accumulation of capital and growth through successfully containing inflation and the restricted role that state enterprises play in an economy. Through control over prices, countries are depriving subjects of motivation for investing their resources in the development of certain industries and satisfaction of their demands (Filson, 2007), thereby, as a result of restricted supply, enhancing a further increase of price for a product or service, which in many cases may also eventually force economic activity into shadow economy. The affecting of prices through state owned enterprises, which do not work on the principles of free market, is not welcomed (Filipovic, 2005), since this does not enhance, through investments, the introduction of new technologies, processes, and structural reforms, which all are crucial for productivity and competitiveness of an economy.

Trade freedom is one of the other critically important components of economic freedom, assuming that global trade is one of the main forces which allow the globalised economy to evolve. From a perspective of economic development, the role of foreign trade cannot be underestimated when looking at its impact on productivity and competition, ensuring development through export and import of products and services. Export gives chance to expand markets, use the advantages of economies of scale, broaden capacity. Import gives chance to access the most updated technology, most effective production devices, and cheapest resources. Various restrictions through tariffs, quotas, export duties, non-tariff regulatory and technical barriers, or through total bans on trade, promote uncompetitive manufacturing, which constitutes an obstacle to a successful development of countries in a longer term. From the perspective of fundamental economic freedom, by denying the right of people to exchange their products and services in the international market, their economic freedom is restricted.

The positive contribution from trade freedom has been justified by countless studies. For example, for every two new jobs created in a European Union member state, another is one is created in some other member country (Sousa, 2012), which confirms the significance of global trade for the well-being of nations. Here one can draw parallels with the case of *IPhone*, which, despite being designed in the USA and assembled in China, gets most of its value through the manufacturing of components in enterprises in Japan, Germany, Korea (Xing and Detert, 2010), which in turn, to produce these components, use products and services that are offered in other countries, thus creating new jobs and income on a global scale, beside a good quality product at an accessible price for consumers. This again reminds one of the significance of imports in sustaining competitiveness and productivity (Romer, 1990) through importing raw materials and manufacturing equipment.

Investment freedom is significant for economic freedom due to the fact that it is one of the principal ways to attract resources, which by flowing to the most attractive place promote job creation, knowledge and experience transfer,

takeover of innovative processes and competitiveness of products and services. It is very important in the present day globalised economy not to put restrictions on the attraction of investments, especially in economies where, for objective or subjective reasons, the level of accumulated capital is low and there is no substantial income per person from valuable natural resources in high demand.

The importance of the investment freedom component has already been outlined at the beginning of this article, basically emphasising how vital it is for productivity and competitiveness as the result of new funds and knowledge attracted for development. However, in view of their inseparability, the significance of attracting investment will be further discussed when the author looks at the only economic freedom component that has not been covered yet – financial freedom. On the whole, a commonly accepted importance of the investment climate can even be proved just by looking at how much resources countries commit to the attraction of investments (Dadush, 2013), for example, by establishing one-stop investment agencies or various incentives of fiscal and financial nature, like tax discounts and state guarantees.

Financial freedom is crucial for economic freedom since it gives access to resources that can enable growth and development. The higher the competition and financial market development, the bigger and more versatile opportunities to access financial resources, which makes it possible to invest in development, for example, in material resources like manufacturing equipment, or intangible resources such as professional development of workers, thus improving productivity and competitiveness. State interference in the financial sector is necessary only as much as to ensure transparency of financial institutions, so that market players can make informed decisions about the stability of the financial system and possible risks. From the perspective of economic freedom, the role of the state should be limited to that, because, when countries interfere with free competition in one way or another, for example, by holding majority voting right over some financial bank, free market principles are distorted.

The significance of this component has been recognised by empirical surveys (Alfaro et al., 2010; Alfaro et al., 2004), showing that access to external resources is critically important for the takeover of the newest technologies, thereby ensuring that the productivity competitiveness race is not lost. It has even been more important than the development level of human capital; however, one can assume that these things need to go hand in hand to obtain the best possible outcome. In addition, many studies have shown (Carkovic and Levine, 2003; Hermes and Lensink, 2000), among other things, that both the banking sector and the stock market play a very important role in achieving positive spillovers associated with foreign direct investment, and that in the countries where financial system is comparatively more developed the sectors receive more of these positive spillovers than in the countries where the financial system is less developed.

ECONOMIC FREEDOM SITUATION IN THE BALTIC STATES

Having regained their independence from the Soviet occupation only one generation ago, and radically reforming their economies to comply with the principles of free market economy, Estonia, Lithuania and Latvia have not only become European Union member states but also have been successful enough to join the Eurozone. At the moment, being respectively the 11th, the 21st and the 42nd freest economies in the world, the Baltic States are setting an example to the Southern EU countries – Spain, France, Portugal, Italy and Greece, which all get significantly lower appraisals of economic freedom than any of the Baltic States.

Given their homogeneity, that is, similar historical legacy, geopolitical situation, inability to sufficiently compete with economies of scale, for objective reasons – scarcity of a accumulated capital, lack of valuable natural resources, and other similarities, these economies, with their highly educated population, are perfectly suited for the evaluation of how different policies affect economic well-being.

If globally comparable ranks of Latvia have constantly been fluctuating from the third to the fifth tenth, earning the highest score in 2005 when Latvia's economy ranked 33rd freest in the world, then Estonia, starting from the turn of the century, have constantly been ranked among the top ten globally, reaching the score of the 8th freest economy in the world in 2003. Lithuania has also earned comparatively high scores in economic freedom: it did worse than Latvia before the turn of the century, unchangingly being globally in the 30's from the year 2003, in the year 2004 earning a result of the 18th freest economy in the world. Interestingly enough, the highest comparative positions of the Baltic states have been recorded right before joining the EU, still being in the accession talks, proving that pressure from international institutions enhance faster implementation of necessary reforms, by setting forward their conditions for successful admission.

In the Figure 1 it can be observed that there has been a correlation between the extent of economic freedom and attracted FDI in the region. Although this question requires further mathematical analysis, for a purpose of illustrating the matter, in this basically two graphs uniting figure, namely, FDI attraction per capita from the left side and IEF score from the right side, it is obvious that Estonia, which has always had the very highest scores of all three Baltic countries in the economic freedom, has also been superior than Latvia and Lithuania in the attraction of FDI per capita

This has led to a situation where Estonia, with 1.3 million inhabitants, has accumulated FDI of 18.826 billion USD (UNCTD, 2014), which is more than in Latvia, where with 2 million inhabitants it is 13.254 billion, and Lithuania, where with the population of 3 million it is 15.796 billion. The accumulated FDI per capita in Estonia is 14260.24 USD, in Latvia 6548.99 USD and in Lithuania

5315.11 USD, which means that Estonia has accumulated more investment per capita than Latvia and Lithuania taken together. However, it also has to be noted that despite the fact that Lithuania has had better scores for economic freedom than Latvia, Latvia has been more successful than Lithuania in the attraction of FDI per capita.

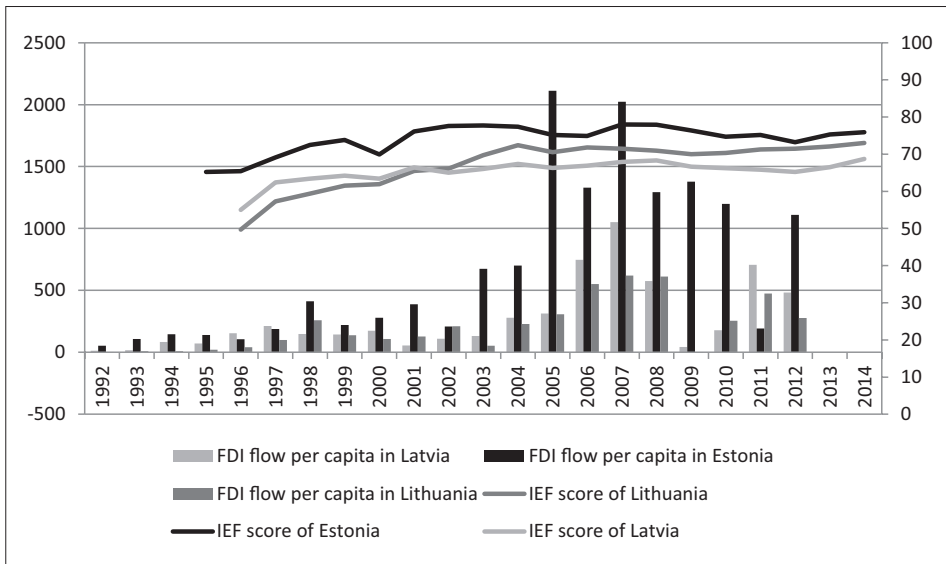


Figure 1 FDI flow per capita and IEF scores in the Baltic States

Source: *Inward and outward foreign direct investment stock annual 1980. 2012.*

United Nations Conference on Trade and Development. <http://unctadstat.unctad.org/TableViewer/tableView.aspx>

Graph the Data. The Heritage Foundation. <http://www.heritage.org/index/visualize>

Viewing the results of the Baltic States in the IEF components from a historical perspective and the reasons why Estonia has always had better scores of economic freedom than Latvia and Lithuania (The Heritage Foundation, 2014), it becomes apparent that Estonia has always been convincingly superior in the property rights component, which, as covered before in this article, is a very important condition for attracting investment, especially in technologically intensive sectors. Besides, higher results have always been recorded for the freedom from corruption, investment freedom, and, to a lesser extent, for financial freedom.

When comparing the current situation in the Baltic states for each of the economic freedom components (The Heritage Foundation, 2014), it is obvious that, as regards property rights, Estonia has the best situation not only in the Baltic region, but also in the whole of Eastern Europe, getting the highest comparative assessment in the world along with twelve other countries. In both the other Baltic States that are lagging behind, in Latvia and Lithuania,

the situation being a little better in the latter, the regulatory framework is sufficient to equal the best-performing countries; however, a proper enforcement and implementation is lacking.

Of the Baltic States, fighting corruption has been the most successful in Estonia, which ranks 28th globally in the Corruption Perception Index report for the year 2013 published by Transparency International, while Lithuania is 43rd, and Latvia, 49th. However, in the recent years, Latvia has made the biggest progress of all the three Baltic States in this area. It is important to note that in this index, used by the IEF to evaluate freedom from corruption, none of the countries are given the top score, with even the highest-performing countries earning 9 out of 10 points.

For fiscal freedom the best score from among the Baltic States, according to the index methodology, is given to Lithuania, which has the lowest taxes, with the total tax burden being 16% of the gross domestic product; Latvia follows with 27.2%, and finally Estonia with 32.8%. In Lithuania, the top marginal tax rate on individual income is 15%, same as for the top marginal tax rate on corporate income, which also stands at 15%. In Latvia these according tax rates are 24% and 15%, but in Estonia both are set at the 21% rate. The lowest taxes are predominantly recorded in the oil-rich Persian Gulf countries, but the highest, in wealthy Western European countries, predominantly Nordic countries.

The government expenditure, which is calculated on the basis of the government's share of GDP, in is almost the same all three Baltic States, ranging from 38% to 39%, and emphasizing once again the similarities between these Baltic economies. It is important to note that in Lithuania and Latvia, this share has been mildly, but steadily decreasing in the recent years (Eurostat, 2014). Estonia is an exception in this case, also in view of the fact that the country's tax policies in a way seem to be heading slowly from the Baltic taxation model towards the Scandinavian one.

From a global perspective, all the three Baltic States show very even and good comparative results in the business freedom component, which indicates of their sufficiently developed regulatory framework. However, when comparing all three countries, Lithuania earns the best score, followed by Latvia, and finally Estonia, which, according to the index methodology, is lagging behind only a little, given its slightly weaker insolvency system when compared to the other Baltic States.

According to the index methodology, Latvia convincingly earns the best score for labour freedom, ranking higher than Lithuania and Estonia, which have very similar scores. However, it has to be reminded that although high scores in this index are generally good for economic dynamism, they decrease social rights and safety of workforce. Besides, from the perspective of investment attraction, expert opinions on Latvia demonstrate that potential investors are very much satisfied with the workforce regulation in the Baltics when compared to Western Europe. From all the countries of the world, the USA shows the most liberal approach to this matter.

Latvia also gets significantly better results as regards monetary freedom than Lithuania and Estonia; the latter has not been as successful as the other two countries of the region over the recent years, especially Latvia, in constraining inflation, both prior to the introduction of the Euro, as well as afterwards. Just like all the other countries in Europe and the world, the Baltic States get a lower appraisal since they influence prices through state run enterprises and subsidies, which, in the past years, have been decreased in order to maintain fiscal discipline. One of the main driving forces behind it was fulfilment of the criteria for entering the Eurozone and adopting the Euro as the official currency of these countries.

Given that in all the factors dealing with the trade freedom and covered by the IEF fall into the exclusive competency of the EU, the three Baltic States, just like all EU countries, are rated equally high on this component. Still, they do not get the highest comparative score considering that EU, unlike half a dozen other countries across the globe, still has not abolished import tariffs for different groups of products. However, it is important to note that all countries in the world impose some kind of non-tariff barriers to trade.

Similarly to trade freedom, the Baltic States also show very high comparative results for investment freedom, confirming again the EU's efforts to decrease obstacles to the attraction of investment. Estonia has the fewest obstacles to the attraction of investments, followed by Latvia, and then Lithuania, with the most obstacles to investment in the region. It must be borne in mind that all countries in the world impose some kind of restrictions on investments, most commonly in sectors that are important to the national security. The highest score in this area has been earned by Luxembourg.

As regards financial freedom, according to the qualitative assessment by the IEF authors, Latvia, although questionably, is lagging well behind Lithuania and Estonia. This is despite the fact that the total number of banks operating in Latvia is higher than in Lithuania and Estonia taken together. Still very questionably, but some of the reasons for a lower appraisal are less developed stock market, the majority control over a nationalised bank during the global financial crisis, and efforts to combat the Russian money laundering.

CONCLUSIONS

In an increasingly globalised economy, the global competitiveness of countries, and means to measure it, gain increasing significance, with countries, institutions and researchers paying more and more attention to analysing it, and devoting resources to the required improvements, which usually involve mid-term and long-term policy planning.

One the most important motivating forces behind this is an ability to better attract foreign direct investment, which creates possibilities for the transfer of updated technologies and processes, the professional development of workforce, economic opportunities offered by global value chains, reorientation of a country

from producing raw materials to manufacturing a final product, and a number of other positive contributions to economic development. However, in various researches the importance attached to each component of economic freedom in acquiring prosperity differs.

One of the ways to measure economic competitiveness is by comparing the extent of economic freedom that countries have, which, as surveys show, can also largely explain differences in economic well-being across the world. Generally, countries with higher economic freedom have higher gross domestic product per capita and its growth rates, as well as better health care, education quality, environment protection, income equality, and happiness results. These trends of increasing prosperity are confirmed even when one compares these indicators within the territories of countries.

By using the Index of Economic Freedom with its 10 components, and comparing the historical results of economic freedom in the economically homogenous Baltic States with their attracted FDI over the years, which, given their similar historical economic legacy, makes them very suitable for evaluating how different policies affect economic well-being, it becomes evident that economic freedom has had an impact on the promotion of these investments, which can partly be explained by differences in the enforcement and implementation of intellectual property rights.

Nevertheless, the author would like to encourage and recommend a further research into the different correlations between economic freedom with its constituting components and investments that promote growth to draw solid conclusions about how various policies relating to this field affect it, especially in other homogenous regions across the world such as the Baltic States.

REFERENCES

- Alfaro, L., Chanda, A., Kalemli-Ozcan, S., Sayek, S. Does foreign direct investment promote growth? Exploring the role of financial markets on linkages. *Journal of Development Economics* 61. 2010. pp. 242-256.
- Alfaro, L., Chanda, A., Kalemli-Ozcan, S., Sayek, S. FDI and economic growth: the role of local financial markets. *Journal of International Economics* 64. 2004. pp. 89-112.
- Ayal E. B., Karras G. Components of Economic Freedom and Growth: An empirical Study. *The Journal of Developing Areas* 32 (spring). 1998. pp. 327-338.
- Azman-Saini, W. N. W., Baharumshah, A. Z., Law, S. H. Foreign direct investment, economic freedom and economic growth: International evidence. *Economic Modelling* 27. 2010. pp. 1079-1089.
- Berger T., Bristow, G. Competitiveness and the Benchmarking of Nations. A Critical Reflection. *International Advances in Economic Research*. Vol. 15, Issue 4. 2009. pp. 378-392.
- Berggren, E. The Benefits of economic freedom. *The Independent Review*, v. VIII, n. 2, Fall 2003, ISSN 1086-1653. 2003. pp. 193-211.
- Bergh, A., Karlsson, M. Government size and growth: Accounting for economic freedom and globalization. *Public Choice*, Springer, vol. 142(1). 2010. pp. 195-213.

- Business Intelligence Middle East. UAE challenges its economic freedom ranking in paper by Heritage Foundation. <http://www.bi-me.com/main.php?id=16985&t=1>. 2008. 31. jan.
- Carkovic, M., Levine, R. Does Foreign Direct Investment Accelerate Economic Growth? - University of Minnesota, Working Paper. 2003. pp. 26.
- Carlsson, F., Lundström, S. Economic Freedom and Growth: Decomposing the Effects. Working Paper in Economics no. 33. Department of Economics. Göteborg University. 2001. pp. 17.
- Choong, C. K., Baharumshah, A. Z., Yusop, Z., Habibullah, M. S. Private capital flows, stock market and economic growth in developed and developing countries: a comparative analysis. *Japan and the World Economy* 22. 2010. pp. 107-117.
- Eurostat. Total general government expenditure. <http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tec00023>
- Eurostat. Population on 1 January. <http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>.
- Dadush, U. Incentives for FDI. Foreign Direct Investment as a Key Driver for Trade, Growth and Prosperity. *World Economic Forum*. 2013. pp. 41-42.
- Delgado, M., Ketels, C., Porter, M., Stern, S. The determinants of national competitiveness. Cambridge.: National Bureau of Economic Research. 2012. pp. 48.
- Davies, A., Teague, M. The Health of Nations: Economic Freedom and Prosperity. SMU COX School of Business. O'Neil Center for Global Markets and Freedom. 2013. pp. 52.
- De Haan, J., Sturm, J. On the relationship between economic freedom and economic growth. *European Journal of Political Economy* 16. 2000. pp. 215-241.
- De Soto, H. *The Mystery of Capital*. Basic Books. 2003. pp. 210-211.
- Diaz-Casero, J. C., Diaz-Aunión, D. A. M., Sanchez-Escobedo, M. C. Economic freedom and entrepreneurial activity. *Emerald Group Publishing Limited. Management Decision* Vol. 50 No. 9. 2012. pp. 1686-1711.
- Djankov, S., McLiesh, C., Ramalho, R. M. Regulation and growth. *Economics Letters* 92 (3). 2006. pp. 395-401.
- Dreher, A., Gassebner, M. Greasing the Wheels? The Impact of Regulations and Corruption on Firm Entry. *Public Choice*, Volume 155, Issue 3. 2013. pp. 413-432.
- Feldmann, H. Government size and unemployment: evidence from industrial countries. *Public choice*. Dordrecht: Springer, ISSN 0048-5829, ZDB-ID 2075970., Vol. 127. 2006. pp. 451-467.
- Filipovic, A. Impact of Privatization on Economic Growth. *Issues in Political Economy*, Vol. 14. 2005. pp. 22.
- Filson, D. The Impacts of Price Controls on the Performance of the Pharmaceutical Industry. *Claremont Graduate University*. 2007. pp. 49.
- Fosfuri, A., Motta, M., Ronde, T. Foreign direct investment and spillovers through workers mobility. *Journal of International Economics* 53. 2001. pp. 205-222.
- Heckelman, J. Economic freedom and economic growth: A short run causal investigation. *Journal of Applied Economics*, Vol. III, No. 1. 2000. pp. 71-91.
- Heckelman, J. C., Stroup, M. D. Which Economic Freedoms Contribute to Growth? *KYKLOS*, Vol. 53. 2000. pp. 527-544.
- Hermes, N., Lensink, R. Foreign direct investment, financial development and economic growth, SOMResearch Report, 00027. University of Groningen. 2000. pp. 24.
- Gwartney, J., Lawson, R. The concept and measurement of economic freedom. *European Journal of Political Economy*. Vol. 19. 2003. pp. 405-430.

- Gwartney, J., Lawson, R., Hall, J. Economic Freedom of the World 2013 Annual Report. 2013. pp. 284
- Hanke, S., Walters, S. Economic freedom, prosperity, and equality: a survey. *Cato Journal* 17. 1997. pp. 117-146.
- Harvard Business School Insitute for strategy and competitiveness. National Competitiveness. <http://www.isc.hbs.edu/econ-natlcomp.htm>.
- Javorcik, B. The composition of foreign direct investment and protection of intellectual property rights: evidence from transition economies. *European Economic Review* 48. 2004. pp. 39-62.
- Karlsson, S. The Failings of the Economic Freedom Index. *Mises Daily*. Ludwig von Mises Institute. 2005.
- Kim, A. B. Advancing Freedom: The Path to Greater Development and Progress. 2014 Index of Economic Freedom. The Heritage Foundation and Dow Jones & Company, Inc. 2014. pp. 12.
- Klapper, L. Saving Viable Businesses. The effect of Insolvency reform. *Viewpoint*. Public policy for the private sector. 2011. pp. 4.
- Krugman, P. Fire-sale FDI. *Capital Flows and the Emerging Economies*. The University of Chicago Press. Chicago. 2000. pp. 17.
- Krugman, P. Making sense of the competitiveness debate. *Oxford Review of Economic Policy*. Vol. 12., No. 3. 1994. pp. 1-9.
- Left Business Observer. *Laissez-faire Olympics*. <http://www.leftbusinessobserver.com/FreedomIndex.html>. 2005. 26. mar.
- Mauro, P. The Effect of Corruption on Growth, Investment and Government Expenditure: A Cross-Country Analysis. *Corruption and the Global Economy*. Institute of International Economics. 1997. pp. 25.
- McQuillan, L. J., Maloney, M. T., Daniels, E., Eastwood, B. M. U.S. Economic Freedom Index: 2008 Report. Pacific Research Institute. 2008. pp. 82.
- Miller, T., Kim, A. 2011 Index of Economic Freedom. Chapter 2. Defining Economic Freedom –The Heritage Foundation and Dow Jones & Company, Inc. 2011. pp. 27.
- Miller, T., Kim, A. B., Holmes, K. R. 2011 Index of Economic Freedom. Countries. The Heritage Foundation and Dow Jones & Company, Inc. 2011. pp. 370.
- Miller, T., Kim, A. B., Holmes, K. R. 2014 Index of Economic Freedom. The Heritage Foundation and Dow Jones & Company, Inc. 2014. pp. 7.
- Moullier, T. Reforming Building Permits: Why Is It Important and What Can IFC Really Do. *International Finance Corporation*. 2009.
- Munkhammar, J. 2011 Index of Economic Freedom. Chapter 2. The urgent need for labor freedom in Europe and the World. The Heritage Foundation and Dow Jones & Company, Inc. 2011. pp. 10.
- Pellergini, L., Gerlagh, R. Corruption's Effect on Growth and its Transmission Channels. *Kyklos* 57 (3). 2004. pp. 429-456.
- Romer, P. Endogenous technological change. *Journal of Political Economy* 98. 1990. pp. 33.
- Sachs, J. *The End of Poverty: Economic Possibilities for our Time*. Penguin Books, ISBN 1-59420-045-9. 2005. pp. 320-321.
- Siebert, H. Labor market rigidities: at the root of unemployment in Europe. *Journal of Economic Perspectives* 11. 1997. pp. 37-54.
- Smith, A. *An inquiry into the nature and causes of the wealth of nations*. An electronic classics series publication. 2005. pp. 786.
- Sousa, N. Extra-EU exports and employment. DG Trade Chief Economist Note, No 2. 2012.

- Stansel D., McMahon F. Economic Freedom of North America 2013 Annual Report. 2013. pp. 92.
- Stiglitz, J. E. Capital market liberalization, economic growth, and instability. *World Development* 28 (6). 2000. pp. 1075-1086.
- The Heritage Foundation. About the Index. <http://www.heritage.org/index/about>.
- The Heritage Foundation. Graph the Data. <http://www.heritage.org/index/visualize>.
- Trade: a key source of growth and jobs for the EU. Commission contribution to the European Council. European Commission. 2013. pp. 20.
- United Nations Conference on Trade and Development. Inward and outward foreign direct investment flows annual 1970-2012. <http://unctadstat.unctad.org/TableViewer/tableView.aspx?ReportId=88>.
- United Nations Conference on Trade and Development. Inward and outward foreign direct investment stock annual 1980-2012. <http://unctadstat.unctad.org/TableViewer/tableView.aspx>.
- Vanags, A., Leduskrasta, Z. Latvijas konkurētspēja un tās izvērtējums starptautiskos reitingos. *Baltijas Starptautiskais Ekonomikas Politikas Studiju Centrs*. 2005. 9.-10. lpp.
- Weimer, D. L. *The political economy of property rights*. Cambridge University Press. 1997. pp. 8-9.
- Xing, Y., Detert, N. How the iPhone Widens the United States Trade Deficit with the People's Republic of China. ADBI Working Paper 257. Tokyo: Asian Development Bank Institute. 2010. pp. 12.

METHODOLOGY OF MEASUREMENT OF OBJECTIVE WELL-BEING IN MUNICIPALITIES, THE CASE OF LATVIA

INGA JĒKABSONE
BIRUTA SLOKA

Abstract

Well-being has always been a topical concept, and various methodologies have been developed for its evaluation emphasising objective and/or subjective features of the concept of well-being. The objective features of well-being have been studied by economists because the measuring of objective well-being would provide wide opportunities, e.g. to compare different administrative territories, to assess the status of well-being before and after certain activities. Although nowadays municipalities are increasing in importance as regards ensuring well-being to their citizens, traditionally well-being is being evaluated at the national level. The aim of this article is to develop and test research methodology for the measurement of objective well-being at the local level. The methodology used: expert interviews, standardisation of empirical statistical data, analysis and comparisons of empirical statistical data. The main results and findings of the article: an objective well-being index for municipalities has been constructed and tested taking into account various features of well-being, which could be widely used in decision making processes. In addition, possible opportunities have been identified for the use of the index in Latvia.

Keywords: Latvia, objective well-being, municipality, index, methodology

JEL code: B41, H75, R58

INTRODUCTION

Traditionally, the nation's well-being is measured by objective macroeconomics indicators like GDP or GNP. However, well-being is more than the accumulation of material wealth; it is a complex concept, which contains many features, e.g. economic, social, and environmental. At the same time, local governments are currently increasing in importance as regards ensuring the well-being of their communities; therefore, it is essential to measure well-being at the local level. The research question is as follows: "What is the optimal research methodology for the measurement of objective well-being at the local level?" In order to develop the methodology for the measurement of objective well-being at the local level, research will be conducted of methodologies for municipalities for the evaluation and measurement of the existing objective well-being, and accordingly, the methodology of measurement of well-being at local level will be

proposed. In addition, the methodology proposed for Latvian municipalities for 2011 will be tested.

The aim of this article is to develop and test research methodology for the measurement of objective well-being at the local level. In order to achieve the aim, the tasks have been formulated as follows:

1. To conduct a research on existing methodologies for the evaluation and measurement of well-being at the local level;
2. To develop research methodology for the measurement of objective well-being for municipalities;
3. To test the methodology developed for the measurement of objective well-being for Latvian municipalities;
4. To provide recommendations on using the newly developed methodology for the measurement of objective well-being for Latvian municipalities; and
5. To identify possible limitations of the newly developed methodology for evaluating objective well-being at the local level.

The methodology used: expert interviews, standardisation of empirical statistical data, analysis and comparisons of empirical statistical data.

The proposed methodology for the measurement of objective well-being for municipalities will be innovative at the national level, as no system for the evaluation and measurement of objective well-being at the municipal level has been developed in Latvia thus far.

This article relates to the thematic track “Public Administration, Taxation and Budget” because the main findings of the article – the objective well-being index developed for Latvian municipalities – contributes to the improvement of public administration processes at the local and regional level.

RESEARCH RESULTS AND DISCUSSION

This part of the article will address the theoretical background for developing methodology for measuring objective well-being at the local level, the process of developing and testing the methodology for measuring objective well-being at the local level, possible opportunities and limitations of the newly developed methodology.

THEORETICAL BACKGROUND – STUDIES ON OBJECTIVE WELL-BEING AT THE LOCAL LEVEL

Measuring the extent of well-being has long been the subject matter of theoretical and empirical work in the fields of human geography, urban and regional studies, regional science and regional economics. Most of the efforts to date involve the use of objective approaches to researching well-being, whereby factors pertaining to the social and physical environment that are

relatively easy to quantify and are assumed to determine human well-being (e.g. income, consumption, residential land, wages and rents, local amenities, natural environment, environmental pollution) are observed, measured and modelled. Other traditional indicators of well-being are a variety of socio-economic indicators – public health, salary and allowances, distribution of income between different groups of households, their use (Bikse et al., 2009), etc. These factors are typically rated, and regions and cities are ranked on this basis (e.g. Savageau, 2007; Mercer, 2012; Jordison and Kieran, 2003).

One of the first comprehensive geographical approaches to measuring local and regional well-being using objective measures is the work of David Smith, who systematically examined the geography of social well-being in the USA (Smith, 1973). This study was based on the statistical analysis of secondary data for different geographical levels. Since then there has been a steadily growing number of similar, but increasingly sophisticated studies of urban and regional well-being. A number of reviews of such studies have also been carried out, some of which are very comprehensive and informative. Notable most recent surveys include the works of Craglia et al. (2004), Mulligan et al. (2004), Stimson and Marans (2011), Mulligan and Carruthers (2011), and Lambiri, Biagi, and Royuela (2007).

These theoretical developments have been complemented by numerous attempts to provide specific objective indicators of well-being by city and region, and to identify the factors affecting it, including natural and urban amenities. In particular, a considerable amount of research has been performed on the impact of the latter and of related public policy initiatives upon a range of measures that are thought to affect well-being in cities and regions (e.g. Beeson, 1991). A recent example is the work of Morais and Camanho (2011), who presented an evaluation of the performance of 206 European cities on the basis of quality of life based on two approaches: the construction of a composite indicator and an assessment of the ability of local authorities to promote quality of life in the city given the economic position of their country. Further, Morais, Miguéis, and Camanho (2011) present an assessment of the urban well-being in European cities from the perspective of highly qualified and educated workers. They highlight the increasing policy relevance of urban well-being, given that it plays a major role in the migration decisions of highly educated workers. The attraction of highly educated workers in turn significantly affects the competitiveness of cities, so it is argued that there is a strong need to improve methods to evaluate and monitor urban well-being. Morais et al. (2011) developed a composite well-being index for 246 European cities by using data from the European Urban Audit.

Another key debate identified and considered by Mulligan and Carruthers (2011) is ‘jobs versus people’, or, in other words, demand (employment) versus supply (population). Mulligan and Carruthers (2011) present an overview of studies tackling these issues with the use of the so called regional adjustment tool (Mulligan et al., 2011 and Mulligan and Vias, 2006). Also, a very good recent example of this type of work is a comparative study of Europe and North America by Faggian, Olfert, and Partridge (2011), who examine the relationship between

population change and local natural amenities as well as income per capita; they point out that the migration-behaviour revealed preferences (or 'voting with their feet') measures are more reflective of well-being in North America than in Europe. Also of relevance here is a recent relevant study by Korpi, Clark, and Malmberg (2011), who explored the interaction between internal migration, disposable income and the cost of living in Sweden. They pointed out that people are willing to pay more for their homes when moving to more attractive areas. Pillars of prosperity in different aspects are analysed world-wide: recognised authorities from the Princeton University, Timothy Besley and Torsten Persson, have analysed pillars of prosperity from the aspects of political economics (Besley and Persson, 2011). Daron Acemoglu and James A. Robinson have analysed why nations fail and have looked for the origins of power, prosperity and poverty (Acemoglu and Robinson, 2012).

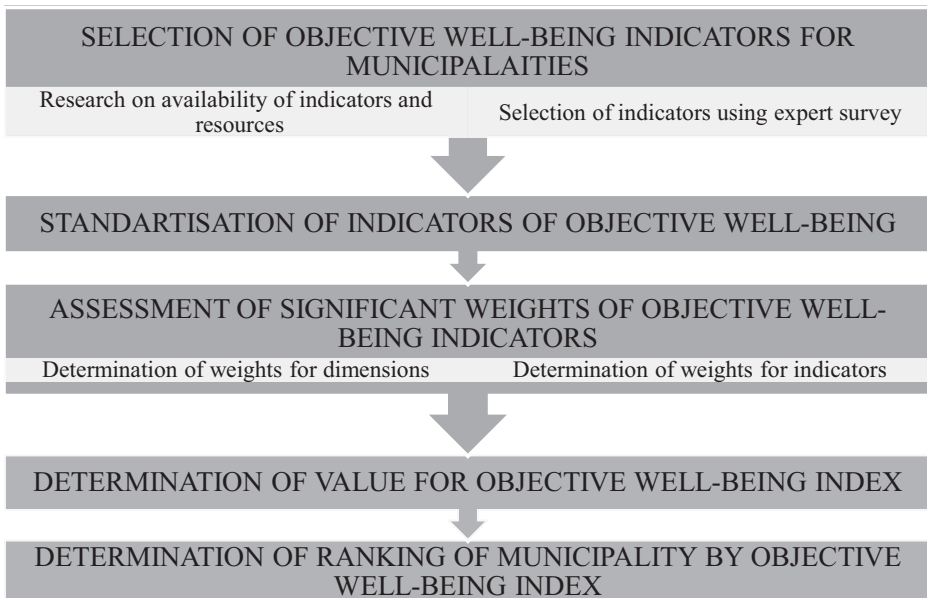
In addition, new approaches have been developed to the analysis of well-being where housing markets are analysed for a better understanding of what makes a place attractive and what maximises the advantage of living in a particular city or neighbourhood (Boelhouwer, 2011; Clark, 2011; Marsh and Gibb, 2011; Smith, 2011; Watkins and McMaster, 2011). Annual calculations and comparisons of the Legatum Prosperity index which is an annual ranking (based on a variety of factors including wealth, economic growth and quality of life) developed by the Legatum Institute, of 142 countries, (Legatum Institute, 2013) is often used for the analysis of well-being. In 2013, Latvia was placed 48th in this rank, while Estonia ranked 36th and Lithuania 43rd (Legatum Institute, 2013). Researchers from different fields have professional interest in the multi-country prosperity index using different analysis methods, including spectrum analysis (Jiawei et al., 2011). This could serve as an indicator for comparative studies and inspirations for policy development in the country.

Analysing the practise of measuring objective well-being, the territory development index (TDI) has already been used for the assessment of development in different territorial units in Latvia for the past ten years. Its calculation methodology has been developed by the Latvian Statistical Institute in 2000. TDI is a generalised indicator which is calculated with determined weight coefficients by summing up standardised values of the most important basic statistical indicators which characterise the development. It demonstrates whether the development level certain territories are higher or lower than the average social economic development level of the state in the relevant year. The initial data for calculations of the development index are taken from the Central Statistical Bureau, Treasury, State Land Service, State Employment Agency and Office of Citizenship and Migration Affairs using the statistical indicators accumulated during a year (GDP, the amount of personal income tax, non-financial investments) and statistical indicators of the moment (demographic indicators) in accordance with the status in the beginning of the year to be reviewed (Vilka et al., 2012).

PROCESS OF EVALUATION OF OBJECTIVE WELL-BEING AT THE LOCAL LEVEL: DESCRIPTION OF METHODOLOGY

Social researchers are certain that well-being is a complex concept, which could be evaluated using measurable indicators (Rinne et al., 2013; Hezri, 2004; Bauler, 2012; Rydin et al., 2003). One of the approaches for measuring well-being is developing indexes, which allows one to include different indicators in a single index (Briec et al., 2013; Smith et al., 2013; Osberg & Sharpe, 2009).

Based on those observations, an index will be developed for measuring objective well-being at the local level adopted for municipalities of Latvia. In order to develop this index, as the first step, indicators of well-being measured at the local level will be selected – the evaluation and selection of indicators will be based on expert evaluation. A pilot survey of expert opinions has been conducted to test the approach. High level professionals and researchers are invited to act as experts. Afterwards, the values of selected indicators will be standardised and certain significant weights will be assigned to the indicators. At the end, the value and rank of the objective well-being index for Latvian municipalities will be determined for 2012 (see Figure 1).



Source: Inga Jēkabsons's construction

Figure 1 **Steps for the estimation of the objective well-being index for municipalities**

Each stage of the estimation of the objective well-being index for municipalities and its testing in Latvia will be described in detail in the following sections.

Selection of objective well-being indicators for municipalities

In order to determine what other indicators might be used to describe the level of well-being in municipalities a summary was prepared where indicators which are measured at the local level were listed. Next, an expert survey was organised, when experts had to decide which indicators are essential for studying well-being in a municipality. The experts were selected at the local level (development specialists in municipalities, heads of social services – 5 municipalities were randomly selected in each planning region, and 2 experts – from each municipality), at the regional level (one expert from each planning region) and at the national level (experts from the Ministry of Welfare of Latvia, the Ministry of Environmental Protection and Regional Development of Latvia). The questionnaire was sent to 59 experts via e-mail, and answers were received from 31 experts.

Evaluating the results of the survey of experts (see Table 1), as well as the calculated average values (arithmetic average, median, mode), the authors assumed that, during further evaluation and the final selection, those indicators should be selected the arithmetic average rating of which is higher than the average of all indicators. Consequently, 11 of the 22 statistical indicators will be explored for further research.

In order to reduce the number of indicators and avoid similar indicators being included in the index, the selected indicators were divided into groups, and a formal transformation was performed in order to make them comparable between municipalities, e.g. the indicator “Economically active market sector units in the municipality” was transformed into the indicator “Economically active market sector units per 1000 residents”.

In addition, the indicators “Unemployment rate” and “The amount of personal income tax per capita” were also added, which have been used in Latvia for the territory development index (*Latvijas Vēstnesis, 2012, No. 371*). As it is not possible at the local level to make estimates of GDP, the indicator “The amount of personal income tax per capita” could objectively, although indirectly indicate the income level of citizens whose place of residence had been declared in the municipality. This indicator can also be precisely estimated – the data are obtained from the State Treasury of Latvia. Of course, it should be taken into account that many municipalities, especially in the Pierīga Region, have a problem with declaration of residence, that is, people actually live and work near Riga, while being registered in rural municipalities. It should also be noted that this indicator is affected by the underground economy so it must be assumed that the value of the indicator will always be more or less artificially low. However, despite this fact, it is worth considering that the well-being level is also higher in municipalities with higher revenues of income tax per capita. While the unemployment rate as described in various scientific publications (Diener, 2006; Lucas et al., 2004; Frey and Stutzer, 2002; Clark, 2009), there is a significant causal link between high unemployment and low well-being and

Table 1 Indicators of well-being in the municipalities of Latvia and their mean values

No	Well-being indicator	Arithmetic mean	Median	Mode
1.	The average monthly wage in the municipality	9.18	8	9
2.	The population growth by mechanical increase	8.46	8	8
3.	Economically active market sector units in the municipality	8.28	6.5	7
4.	Number of full-time employees by actual workplace	8.18	7	7
5	Number of recorded criminal offenses in the municipality	8.15	7	7
6.	Live born children in the municipality	8.08	7	8
7.	Population and the proportion of before working age and above working age in the municipality	7.95	6.5	7
8.	Population growth by natural increase	7.93	7	7
9.	The average number of employees with normal working hours recording in normal time units in the municipality	6.93	6	7
10.	The average annual number of permanent residents in the municipality	6.90	6	7
11.	Number of residents in the municipality at the beginning of the year	6.83	6	7
12.	Occupied workplaces in the municipality, average per year	6.08	5	6
13.	Economically active market sector statistical units in the municipalities by size, business forms and main activities	6.03	5	5
14.	Economically active statistical units in the municipality	5.88	5	5
15.	Number of concluded marriages in the municipality	5.63	4.5	6
16.	The dependency rate in the municipality	5.60	4.5	5
17.	The balance of international migration in the municipality	5.25	4	6
18.	Hotels and other tourist accommodation in the municipality	5.15	4	6
19.	Residential homes in the municipality	3.63	3.5	5
20.	Total area of residential houses at the end of the year in the municipality	3.53	3	4
21.	The number of deaths in the municipality	2.83	2	4
22.	Resident population by ethnic composition of the municipality at the beginning of year	1.88	1	1
Arithmetic average/ median/ mode of the all indicators		6.29	5.5	7

Source: Inga Jēkabsons' calculations based on the results of the expert questionnaire held in March and April, 2013

Note: The experts presented an assessment on a scale 0–10, where 0 is no answer, "I do not know", 1 – not significant, 10 – a very significant indicator characterizing the well-being indicator

vice versa, and therefore, unemployment rate can be used as an objective well-being indicator. In view of the above, 8 different indicators were selected in 3 dimensions of well-being – economic, social and environmental (see Table 2).

Table 2 **Objective well-being indicators in economic, social and environmental dimensions in municipalities of Latvia**

Dimension	Area	Indicator	Source
Economic	Labour market	Unemployment rate	State Employment Agency
		Employment rate	Central Statistical Bureau
	Economic activity	The revenues of personal income tax per capita	The State Treasury
		The average monthly wage	Central Statistical Bureau
		Economically active market sector units per 1000 residents	Central Statistical Bureau
Social	Demography	Permanent population changes over the past five years	Central Statistical Bureau
		The birth rate	Central Statistical Bureau
Environmental	Safety	Recorded criminal offences per 1000 residents	Central Statistical Bureau

Source: Table created by the authors

All selected indicators are available at the municipal level in Latvia.

Standardisation of objective well-being indicators

To combine the well-being indicators expressed in different units and to create the objective well-being index for municipalities, statistical standardisation has been performed, using the following formula:

$$t = \frac{x - \bar{x}}{s}, \quad (1)$$

where

t – standardised value of the well-being indicator in a given municipality;

x – the well-being indicator in its specific unit of measurement in a given municipality that has to be standardised;

\bar{x} – the annual weighted arithmetic average of the well-being indicator;

s – standard deviation, which is calculated for a given year, according to the formula:

$$s = \sqrt{\frac{\sum (x - \bar{x})^2 f}{\sum f}}, \quad (2)$$

where

f – statistical weight (Vanags et al., 2005).

ASSESSMENT OF SIGNIFICANCE WEIGHTS OF OBJECTIVE WELL-BEING INDICATORS

Analysing various cases of the assigning of significance weights in different well-being studies (especially in the construction of indexes), it was concluded that there is no reliable basis to determine the significance weights for well-being indicators. The scientific literature suggests that the most common method to characterise the well-being indices are choosing arbitrarily or similar scales (Mayer and Jencks, 1989). In the majority of the studies significance weights are determined arbitrarily without a quantitative analysis and in this case, “it is impossible to determine, which of elements of common index is more important, it is based only on the researchers’ psychological beliefs” (Fleurbaey, 2009). Many of the researchers believe that “despite the popularity of the use of significance weights, more appropriate is to use the similar weights as in any case, their use is controversial, but in this case, at least simple” (Chowdhury and Squire, 2006).

Taking in to account the abovementioned, as well as the analysis of scientific literature (Legatum Institute 2012; Redefining Progress and Earth Day Network, 2002), in addition to the studies of well-being indicators conducted in Salaspils Municipality (Latvia) (Grantiņš et al., 2010; Grantiņš et al., 2011; Grantiņš et al., 2012; Jekabsone et al., 2013), the authors decided to assign the following importance weights of objective well-being in three dimensions:

- economic – 50%, emphasising the relation of financial factors to objective well-being;
- social and environmental – each 25%, both dimensions are regarded of equal importance in promoting well-being; and
- with economic and social dimensions containing several indicators, it was also decided to give equal weight to each indicator within each dimension.

DETERMINATION OF VALUE AND RANKING OF MUNICIPALITIES BY OBJECTIVE WELL-BEING INDEX

The assessment of significance weights is followed by the determination of the value of the objective well-being index for municipalities. These values were calculated for all municipalities and major cities in Latvia.

Next, the ranking of each municipality was determined in accordance with the objective well-being index for municipalities (see Table 3).

Through analysing the results by the Objective Well-being Index in Latvia in 2012, it can be concluded that the obtained results are similar to overall presumptions about the development of various territories of Latvia – municipalities in Pierīga region received a higher estimate, while those in Latgale region were ranked lower. It is not possible to use the results of the Territorial Development Index (TDI), which had been calculated for municipalities and

Table 3 Ranking of municipalities and cities on the Objective Well-being Index in Latvia, 2012

City/ municipality	Rank by the objective well-being index for municipalities
Stopiņi Municipality	1
Mārupe Municipality	2
Ādaži Municipality	3
Garkalne Municipality	4
Ikšķile Municipality	5
Ozolnieki Municipality	6
Babīte Municipality	7
Ķekava Municipality	8
Valmiera city	9
Carnikava Municipality	10
...	...
Strenči Municipality	110
Viesīte Municipality	111
Ludza Municipality	112
Cibla municipality	113
Baltinava Municipality	114
Viļāni Municipality	115
Kārsava Municipality	116
Vecpiebalga Municipality	117
Aglona Municipality	118
Zilupe Municipality	119

Source: Table drawn up using the authors' calculations

major cities in Latvia as different methodology had been developed for calculation of indexes for municipalities and major cities. However, it could be concluded that not all Pierīga municipalities of rank relatively high on the Objective Well-being Index, for instance, Salaspils municipality which is observed to be one of the wealthier municipalities. This is due to the fact that municipalities in Pierīga region have a relatively low employment rate, despite a low unemployment rate, which can be explained by the fact that there are few jobs in many municipalities of Pierīga region, and many persons who have declared their residence there are working in Riga.

Possible application of the Objective Well-being Index for municipalities

There are many possibilities to use the newly developed index of objective well-being for municipalities in the public sector as the index enables comparison between different administrative territories by the main indicators of well-being. This comparison can also be made within one certain administrative territory between years in order to analyse changes in the level of well-being. This index could also be used for assessing different policies and their impact to level of well-being.

In the case of Latvia, the calculation and analysis of the results of the Objective Well-being Index for municipalities could be made by the State Regional Development Agency (SRDA), taking into account the functions of the agency. The SRDA has developed an ERDF project entitled “Municipal spatial planning, infrastructure and real estate management and monitoring information system”, more commonly known as “Spatial Development Planning Information System” (SDPIS), as part of which, the Regional Development Indicator Module (RDIM) is being devised, providing an instrument for the monitoring of regional development, and decision-making support. This will be an additional instrument for municipalities for the evaluation of trends and for the preparation and monitoring of their development programs. Indicators in various fields at the local level will be displayed and analysed within the Regional Development Indicator Module, and one of the areas is “Well-being” (VRAA, 2013). Within this module, the SRDA specialists could provide calculation and analysis of the objective well-being index for municipalities.

The Objective Well-being Index for municipalities allows comparison, by means of objective indicators, between well-being levels at every municipality in Latvia, which could provide the basis for:

- drawing up of the Regional Development Support Programme aimed to ensure well-being;
- evaluation of the effects of the EU funds, state aid and other financial instruments on local well-being and economic efficiency;
- differentiation of support within the EU funds; and
- comparison of well-being, evaluation, forecasting and other analysis at the local level.

At the national level, the index could be used by the Association of Local Governments of Latvia as justification for certain activities or projects, as well as by the Ministry of Environmental Protection and Regional Development and the Ministry of Welfare of Republic of Latvia – as a criterion for the assessment of the territorial distribution of funding allocations under regional development support measures. At the regional level, the planning regions could use this index as a target indicator in their development planning documents (Development Programme, Sustainable Development Strategy), in establishing inter-municipal

and inter-regional activities, initiating projects aimed at raising the level of well-being, and also in the assessment of, and providing opinions on municipal or private project applications for the national or regional support. At the local level, the objective well-being index could be applied as a target indicator in development documents, in developing and promoting the image of the municipality, as well as an argument to organise events or write project proposals.

Limitations and possibilities of proposed methodology

The proposed methodology provides wide opportunities to develop an index which consists of indicators that are of current importance in every country, namely, it is possible to use different indicators, taking into account the statistical data which are available at the local level. However, there could be a situation when data for certain indicators are not available, for example, statistics about population and other indicators which could represent various dimensions of well-being, e.g. economic, environmental, institutional, and others, are the only data available at the local level. In this case the results could not be reliable as they do not represent different dimension of well-being. The issue also arises in a situation when reforms involving the division of administrative territories have not been undertaken – the statistics are not comparable, and it takes time and efforts to recalculate values. For those territories, another methodology should be used and, most probably, subjective well-being could be evaluated instead of objective well-being. In the case of Latvia, a number of indicators are available that represent different dimensions of well-being; therefore, the results of this index could be used in decision making processes. However, taking into account the varied research mentioned above, a possibility should be considered of using other well-being indicators which are not measured at the local level. An expert survey is planned to be conducted in the future in order to identify those indicators.

CONCLUSIONS, PROPOSALS, RECOMMENDATIONS

1. Well-being – one of the most essential concepts in social sciences at all times – could be divided into the subjective and objective one. Objective indicators of well-being can be found for some measurable components or factors of well-being, e.g. income, consumption, residential land, wages and rents, local amenities, natural environment, environmental pollution, which is observed, measured and modelled.
2. These days the local government is assuming an increasingly greater role as regards ensuring the well-being of the society, implementing the co-responsibility approach in decision-making and public participation processes in resolving serious local issues; therefore, it is important to research well-being at the local level.

3. A large number of studies have been conducted to evaluate the objective well-being at the local level, mostly using specific indicators for a certain city or region. There is also popular assumption that well-being is closely related to migration and employment; therefore, extensive research has been carried out about housing markets and migration.
4. In order to evaluate the different dimensions of well-being, it was proposed to compile the Objective Well-being Index for municipalities, which consists of 8 indicators: unemployment rate, employment rate, the amount of personal income tax revenues per capita, the average monthly wage, economically active market sector units per 1000 residents, permanent population changes over the past five years, the birth rate, and recorded criminal offences per 1000 residents.
5. The results of testing of the Objective Well-being Index for municipalities of Latvia in 2012 corroborate the overall presumptions about the development level of various territories of Latvia -- municipalities in Pierīga region received a higher estimate, those in Latgale region were ranked lower.
6. The Objective Well-being Index for municipalities allows comparison, by objective indicators, of the well-being level at every municipality; in Latvia, the index could be used in decision making processes, as the basis for developing of the Regional Development Support Programme aimed to ensure well-being, in evaluation of the effects of the EU funds, state aid and other financial instruments on local well-being and economic efficiency, for the differentiation of support within the EU funds, for the comparison, evaluation, forecasting of well-being, and other analysis at the local level.
7. The main limitation of the proposed methodology for municipalities is the lack of statistics on the municipal level. If no indicators of different well-being dimensions are available, there is no point in using the methodology provided. In this case, it is more reliable to use methodologies for the evaluation of subjective well-being.
8. An expert survey of should be undertaken to define possible indicators for the objective well-being index for municipalities, – the indicators which are not available yet, but could be used for more reliable results.

REFERENCES

- Acemoglu, D., Robinson, J. A., 2012. *Why Nations Fail: The Origins of Power, Prosperity and Poverty*, Profile Books, London, 529 p.
- Bauler, T., 2012. An Analytical Framework to Discuss the Usability of (Environmental) Indicators for Policy. *Ecological Indicators*, 17, pp. 38-45.
- Beeson, Patricia. E., 1991. Amenities and Regional Differences in Returns to Worker Characteristics. *Journal of Urban Economics*, 30, pp. 224-241.
- Besley, T., Persson, T., 2011. *Pilars of Prosperity: the Political Economics of Development Clusters*, Princeton University Press, 375 p.

- Bikse, V., Rivža, B., Rivža, P., Rivža, S., 2009. Ekonomikas lejupslīdes cēloņi, tās stabilizācijas programmu izvērtējums Latvijā. *Latvijas Universitātes raksti. 743. sēj.: Ekonomika. vadības zinātne*, 251.-265. lpp.
- Boelhouwer, P. J., 2011. Neo-classical Economic Theory on Housing Markets and Behavioural Sciences: Ally or Opponent? *Housing, Theory and Society*, 3(28), pp. 276-280.
- Bric, W., Dumas, A., Stenger, A., 2013. On the Standard Achievement and Well-being Indexes and Their Relation to the Hicks–Moorsteen Productivity Index. *Economic Modelling*, 35, pp. 900-909.
- Cabinet of Ministers Rules No. 371 “Amendments to the Cabinet of Ministers rules Nr. 482 on 25.05.2010, “Regulations on calculation procedure of the Territorial Development index and its values”, Latvijas Vēstnesis, 29.05.2012.
- Chowdhury, S., Squire, L., 2006. Setting Weights for Aggregate Indices: An Application to the Commitment to Development Index and Human Development Index. *Journal of Development Studies*, 42 (5), pp. 761-771.
- Clark, A. E., 2009. *Work, Jobs and Well-Being across the Millennium*. Oxford, UK: Oxford University Press, 266 p.
- Craglia, M., Leontidou, L., Nuvolati, G., & Schweikart, J., 2004. Towards the Development of QoL Indicators in the Digital City. *Environment and Planning B: Planning and Design*, 31, pp. 51-64.
- Diener, E. 2006. *Guidelines for national indicators of subjective well-being and ill-being*. Applied Research in Quality of Life 1, pp.151-157.
- Faggian, A., Olfert, M. R., & Partridge, M. D., 2011. Inferring Regional Well-being From Individual Revealed Preferences: The ‘Voting with Your Feet’ Approach. *Cambridge Journal of Regions, Economy and Society*, 5(1), pp. 163-180.
- Fleurbaey, M., 2009. Beyond GDP: the Quest for a Measure of Social Welfare. *Journal of Economic Literature*, 47(4), pp. 1029-1075.
- Frey, B. S., Stutzer, A., 2002. *Happiness and Economics: How the Economy and Institutions Affect Human Well-being*. New Jersey: Princeton University Press, 364 p.
- Grantiņš, A., Sloka, B., Jēkabsons, I., 2012. *Municipality and Inhabitants Cooperation for Well-being: Salaspils District Case* International conference “NEW CHALLENGES OF ECONOMIC AND BUSINESS DEVELOPMENT – 2012” Proceedings, University of Latvia, pp. 241-250.
- Grantiņš, A., Sloka, B., Jēkabsons, I., Vladimirova, J., Kantāne, I., Vaivade, A., 2011. *Well-Being: Analysis of Different Approaches – Salaspils District Case*. International conference “CURRENT ISSUES IN MANAGEMENT OF BUSINESS AND SOCIETY DEVELOPMENT – 2011” Proceedings, University of Latvia, pp. 172-180.
- Grantins, A., Sloka, B., Kantane, I., Jekabsons, I., Vaivade, A., Vladimirova, J., 2010. *Creation of Local Support Group on Path to Well Being in Municipality: Salaspils Municipality Case*, International Conference “New Socio – Economic Challenges of Development in Europe – 2010” Proceedings, University of Latvia, pp. 292-299.
- Hezri, A. A., 2004. Sustainability Indicator System and Policy Processes in Malaysia: a Framework for Utilisation and Learning. *J. Environmental Manage*, 73, pp. 357-371.
- Jēkabsons, I., Thirion, S., Grantiņš, A., Sloka, B., 2013. “Challenges of the SPIRAL Methodology for Well-Being Studies”. International conference “NEW CHALLENGES OF ECONOMIC AND BUSINESS DEVELOPMENT – 2013” Proceedings, University of Latvia, pp. 339-353.
- Jordison, S., & Kieran, D., 2003. *Crap towns: The 50 worst places to live in the UK*. Boxtree.

- Jiawei, Z., Haibin, X., Shouyang, W., 2011. A Multi-country Prosperity Index by Two-Dimension Singular Spectrum Analysis, *Procedia Computer Science*, 4, pp. 1681-1690.
- Korpi, M., Clark, W. A. V., & Malmberg, B., 2011. The Urban Hierarchy and Domestic Migration: The Interaction of Internal Migration, Disposable Income and the Cost of Living, Sweden 1993–2002. *Journal of Economic Geography*, 12, pp. 1051-1077.
- Lambiri, D., Biagi, B., & Royuela, V., 2007. QoL in the Economic and Urban Economic Literature. *Social Indicators Research*, 84, pp. 1-25.
- Legatum Institute, 2012. *A Unique Global Inquiry into Wealth and Well-being: the 2012 Legatum Prosperity Index. Methodology and Technical Appendix*. [Online] Available at: http://webapi.prosperity.com/download/pdf/PI2012_MethodologyV4.pdf [Accessed 11 December 2013].
- Legatum Institute, 2013. The Legatum Prosperity Index 2013. 57 p. [Available also Online] Available at: http://media.prosperity.com/2013/pdf/publications/PI2013Brochure_WEB.pdf [Accessed 1 March 2014].
- Lucas, R. E., Clark, A. E., Georgellis, Y., 2004. Unemployment Alters the Set Point for Life Satisfaction. *Psychological Science*, 15, pp. 8-13.
- Marsh, A., & Gibb, K., 2011. Uncertainty, Expectations and Behavioural Aspects of Housing Market Choices. *Housing, Theory and Society*, 28(3), pp. 215-235.
- Mayer, S. E., Jencks, C., 1989. Poverty and the Distribution of Material Hard-ship. *Journal of Human Resources*, 24 (1), pp. 88-114.
- Mercer, 2012. Quality of Living Worldwide City Rankings – Mercer survey. [Online] Available at: <http://uk.mercer.com/press-releases/quality-of-living-report-2012> [Accessed 21 November 2013].
- Morais, P., & Camanho, A. S., 2011. Evaluation of Performance of European Cities with the Aim to Promote QoL Improvements. *Omega*, 39, pp. 398-409.
- Morais, P., Migućis, V. I., & Camanho, A. S., 2011. QoL Experienced by Human Capital: An assessment of European Cities. *Social Indicators Research*, 110 (1), pp. 187-206.
- Mulligan, G. F., & Vias, A. C., 2006. Growth and Change in United States Micropolitan Areas. *Annals of Regional Science*, 40, pp. 203-228.
- Mulligan, G., & Carruthers, J. I., 2011. *Amenities, QoL and Regional Development*. In RW. Marans & RJ. Stimson (Eds.), *Investigating quality of urban life* (pp. 107-134). Dodrecht: Springer.
- Mulligan, G., Carruthers, J., & Cahill, M., 2004. *Urban Quality of Life and Public Policy: A Survey*. In Roberta. Capello & Peter. Nijkamp (Eds.), *Urban Dynamics and Growth: Advances in Urban Economics* (pp. 729-802). Amsterdam: Elsevier.
- Osberg, L., Sharpe, A., 2009. *New Estimates of the Index of Economic Well-being for Selected OECD Countries, 1980–2007*. Centre for the Study of Living Standards (CSLS) Research Report 2009-11. Ottawa, Ontario, Canada.
- Redefining Progress and Earth Day Network (2002). *Sustainability Starts in Your Community: A Community Indicators Guide*. [Online] Available at: <http://www.rprogress.org/publications/2002/ciguide.pdf> [Accessed 29 December 2013].
- Rinne, J., Lyytimäki, J., Kautto, P., 2013. From Sustainability to Well-being: Lessons Learned from the Use of Sustainable Development Indicators at National and EU Level. *Ecological Indicators*, 35, pp. 35-42.
- Rydin, Y., Holman, N., Wolff, E., 2003. Local Sustainability Indicators. *Local Environment*, 8, pp. 581-589.
- Savageau, D., 2007. *Places Rated Almanac*. Washington, DC: Places Rated Books LLC.
- Smith, D., 1973. *The Geography of Social Well-being*. New York: McGraw-Hill.

- Smith, L. M., Case, J. L., Smith, H. M., 2013. Relating Ecosystem Services to Domains of Human Well-being: Foundation for a U.S. index. *Ecological Indicators*, 28, pp. 79-90.
- Smith, S. J., 2011. Home Price Dynamics: A Behavioural Economy? *Housing, Theory and Society*, 28(3), 236-261.
- Stimson, R., & Marans, R., 2011. *Objective Measurement of QoL and Quality of Urban Life*. In RW. Marans & RJ. Stimson (Eds.), *Investigating Quality of Urban Life* (pp. 33-54). Dodrecht: Springer.
- Vanags, E., Krastiņš, O., Vilka, I., Locāne, V., Šķiņķis, P., Bauere, A., 2005. *Dažādā Latvija: pagasti, novadi, pilsētas, reģioni. Vērtējumi, perspektīvas, vīzijas*. Rīga: Latvijas Statistikas institūts, VRAA, p. 39.
- Vilka, I., Pužulis, A., Beikule, A. et al., 2012. *Reģionu attīstība Latvijā 2011*. Rīga: SIA MicroDot, 174 p.
- VRAA, 2013. *Reģionālās attīstības indikatoru modulis*. [Online] Available at: <http://www.vraa.gov.lv/lv/petnieciba/raim/> [Accessed 17 November 2013].
- Watkins, C., & McMaster, R., 2011. The Behavioural Turn in Housing Economics: Reflections on the Theoretical and Operational Challenges. *Housing, Theory and Society*, 28(3), pp. 281-287.

ANALYSIS OF ACCOUNTING REGULATORY SYSTEM IN LATVIA

BAIBA ZVIRBULE

Abstract

In order for the companies to be able to cooperate successfully they need to operate on a similar basis. Consistency in the application of principles is ensured by joint control measures affected by national law. Despite the fact that countries tend to implement different tax policies the impact of changes in the accounting principles is shifting towards reduction of differences. In their striving towards globalisation, both commercial operators as individuals and governments as economically independent units strive for integration in the world's economy. The aim of the article is to systemise the laws and regulations governing accounting by their impact on the businesses based on summarising the views of scientists concerning the quality conditions for accounting information and nature of regulations. The author of the article has summarised scholars' views regarding the impact that the laws and regulations have on entrepreneurship. Based on differences, the author looks at the laws and regulations on accounting both as an integrated environment that impacts entrepreneurship and as separate layers each of which has an impact on the central element of entrepreneurship, the company. The author recommends that, by their impact, laws and regulations on accounting should be divided into three groups: the first group represents the basic principles or cornerstones of accounting that serve as the basis for the accounting structure in a company; the second group deals with the principles and amounts of tax collection in the country and this group is not homogenous as tax policies differ country by country; and the third group represents the disclosure principles the selection of which depends on the company's position in the international business environment and the society.

Keywords: Latvia, accounting information, accounting regulation, business environment

JEL code: H55, H75, J26, J32

INTRODUCTION

The company is the key element of the business environment which interacts with other external elements, such as governmental institutions, competitors, suppliers, financiers and society. In order to ensure an optimal cooperation with the other elements of the system, a company provides information about its activities in its annual reports. The mandatory information to be covered in the report is laid down in the legislation of each country, as well as by International

Accounting Standards; however, to create a fuller picture of the company it may present more information about itself than required by the aforementioned documents.

According to the Business Dictionary, information is data that:

- (1) Have been verified to be accurate and timely;
- (2) Are specific and organised for a purpose;
- (3) Are presented within a context that gives it meaning and relevance; and
- (4) Can lead to an increase in understanding or decrease in uncertainty in respect of a given matter.

The value of information lies solely in its ability to affect human behaviour, decision making, or the outcome of events. A piece of information is considered valueless if, after receiving it, things remain unchanged. (Business Dictionary, 26 July 2012)

In accordance with the definitions of the Terminology Commission of the Latvian Academy of Science (hereinafter referred to as "LAS"), information is data about processes in a company and their performance results, as well as the economic situation in the country. Information that has been collected for a specific purpose, task, person or period is defined as the needed information.

To characterize corporate information, it could be said that it is economic information which the LAS Terminological Commission defines as data on corporate, national or global operational processes and their various aspects: production, consumption, change, resources (tangible, labour, financial etc.); economic information may be of different kinds: planning, accounting, statistical, open or secret. Economic information operates in accordance with an established system which covers the collection, processing, analysis, assessment, saving and use of information in the management of economic activities. (LAS Terminology Commission, 2000).

The author considers that the corporate ability to provide the users of information with selected high-quality information, even of the smallest amount, may secure long-term growth in the enterprise.

METHODOLOGY

In order to achieve the objective set out in the article, the author analyses literature and summarises the views of scientists concerning the quality conditions for accounting information, the impact of legislation on accounting outcomes and its typical uncertainty. Summarising the information, the author concludes that there is no unanimity among scientists regarding the optimal variant for reporting of accounting information. For example, there is a wide difference in understanding the scope of the mandatory nature of legislative regulations on information disclosure.

On the basis of sources investigated, the author divides the acts that regulate accounting into three groups. One separate group is for legislative documents whereby the basic principles of accounting are laid down, another separate group is for tax legislation and in the third group there are the acts that lay down the amount of information the enterprises are to disclose. In Figure 1 the author presents the schematic composition of regulatory legislation on accounting and its scope of impact in business environment.

In order to demonstrate the impact of accounting legislation on enterprises according to the levels of business environment, the author uses the schematic picture of business environment quoted from the author's publication in 2012; see: *Conference proceedings of Cambridge Business and Economics Conference*. The author's newly acquired understanding is displayed in this new figure (Figure 1) where the legislation relevant to accounting is presented in interaction with tiers of the business environment with an emphasis put upon the scope of the impact that such legislation has on the business environment.

THEORETICAL ANALYSIS OF ACCOUNTING LAWS AND REGULATIONS

By nature, accounting is based on rules. It depends on the philosophy of a company manager how to translate and integrate these rules in entrepreneurship. It is common for the rules to be designed by governments or regulators. However, it is not just regulators and managers who design the rules. Users act as important indirect designers because managers who need to raise capital are pressurised to report or disclose in formats that are appealing to them (Hirshleifer D. & Teoh S. H., 2009). Behavioural accounting has also devoted considerable effort to normative proposals for improving accounting rules and regulation (Kachelmeier & King, 2002; Hoddr & Koonce & McAnally, 2001). Due to increased information demands of managers and employers, accounting has significantly evolved lately and provides useful information to ensure more performance for public policies (Baluta, 2012).

Obviously, in a perfect situation entrepreneurs are satisfied with the rules and implement them, but sometimes the implementation is not easy.

Researchers Hirshleifer and Teoh propose that psychology shapes accounting rules and policy in two very different ways:

1. Good rules for bad users: Rules and policies that provide information in a format that is helpful to users who are subject to biases and constraints in the cognitive processing; and
2. Bad rules: Superfluous or even pernicious rules and policies that result from psychological bias on the part of the "designers" (managers, users, auditors, officials, or voters) (Hirshleifer D. & Teoh S. H., 2009)

Researchers Norreklit H. & Norreklit L. & Mitchell argue that in order to construct the “conceptual framework” for practical application typically the following central elements are required:

1. A statement of the objectives of financial accounting. This is normally expressed at a general level and is understood to involve the supply of information to a range of users making economic decisions;
2. Basic premises or concepts that have a fundamental influence on the accountant’s work such as going concern, accruals and money measurement are important examples; and
3. The desirable qualities which accounting information should possess. For example, in the UK, FRS 18 identified these as relevance, reliability and prudence, comparability and consistency and comprehension (Norreklit H. & Norreklit L. & Mitchell, 2010).

The classification of the accounting regulations was made by the author based on the following factors:

1. The stage of data processing that the regulation acts in;
2. The range of companies that are required to use the regulations; and
3. Whether data require additional interpretation to be usable by third parties.

Any physical or legal entity performing business activities is requested to account for revenues and expenses and determine the results of their business activities. The accounting regulations that specify the above accounting principles the author has classified in the group: regulations concerning the basic principles of accounting. Regulations of the first group are used as the only regulation by a small group of business operators that often includes non-profit organisations or cooperative operators. The second group represents business operators that in addition to the basic accounting procedures calculate taxes and this group is defined by the author as tax legislation. According to the author, the majority of companies apply the regulation of both the above groups. The third group of accounting regulation is: acts regulating the scope of information disclosure. According to the author, the third group sets the principles for disclosures.

In sum, the acts that regulate accounting may be divided into the following three groups:

1. Regulations concerning the basic principles of accounting;
2. Tax legislation; and
3. Acts regulating the scope of information disclosure. (See Figure 1)

Legislative acts regarding the basic principles of accounting include information that sets out:

1. Which types of business should keep books for accounting;
2. What properties the accounting information shall possess;

3. Who shall be responsible for accounting;
4. Which information should be considered a business secret;
5. The role and meaning of supporting documents in accounting;
6. Rules of recordings in accounting;
7. Rules concerning cash transactions (as well as the use of till systems);
8. Ways of keeping registers in accounting;
9. Provisions of document storage;
10. Provisions of stocktaking;
11. Provisions on annual reporting;
12. Separation of competences for accounting among responsible authorities;
and
13. Liability/Consequences in the event that the basic principles are disregarded.

The author believes that the main acts of legislation that regulate the basic principles of accounting only influence the company's own activities. These regulations do not influence the corporate cooperation with elements of the business micro-environment such as suppliers or customers. Compared with the other groups of regulatory documents that refer to accounting, the acts that regulate the basic principles of accounting have the least impact on the company as the key element of the business environment; however, they have a direct impact on the organisation and planning of the company's own activities and the amount of expenses required to ensure the functions of accounting.

Tax legislation covers the whole taxable basis:

1. Indirect taxes which are paid when a consumer buys a commodity or service; such taxes include value added tax, excise duties, environmental tax, electricity tax, customs duty, lottery and gambling tax;
2. Payroll taxes, including income tax, state insurance payments;
3. Capital gains taxes, including corporate income tax, asset tax, tax of micro-enterprises; and
4. Property taxes, including tax on immovable property, vehicle taxes.

Firstly, the dynamism of tax legislation creates an impact on a company as the key element of the business environment through laying down the amount of costs necessary to support the accounting functions, namely, the application, calculation and reporting of tax liabilities. Secondly, tax legislation determines the price of the company's products; this creates a wider impact on the business environment, including both the internal business environment, *i.e.*, the company and the external business environment, *i.e.*, suppliers, consumers, competitors, intermediaries, financiers and society. Provided that all the aforementioned taxes are amassed in the price of the produced product, one may argue that tax

legislation has an indirect impact on the further tiers of the business environment up to global factors which bring the end product of the company to international markets.

In the author's opinion, the acts that regulate the amount of reporting disclosure are the following: International Financial Reporting Standards and International Accounting Standards, as well as regulations issued by each country where certain principles of disclosure are laid down as being mandatory. The application of the Standards requires certain costs to be able to disclose information, which means that a company experiences an impact due to that. The disclosure of information influences each user of the information and in view that users of information of various degrees of detail are spread all over the business environment, the influence of the acts that regulate information disclosure is equally rapid and identical on each of the elements of the business environment. With this statement, the author presumes that the accessibility of information cannot be seen as an impediment because the information is used by the subjects, who need it, *i.e.*, if one and the same information is available to all tiers of the business environment, there is no obligation that each element of the environment uses it. Positive selection is a characteristic feature of the use of information.

A successful solution to satisfy the needs of information users in various countries of the world was found in the past century in the form of International Financial Reporting Standards.

In the past several years, most accounting academics have been paying close attention to the International Accounting Standards Board (IASB) and its production of International Financial Reporting Standards (IFRS) (Zeff S. A., 2012). Following World War II, each country had its own Generally Accepted Accounting Principles (GAAP), or proper accounting practice. Even among the GAAPs in countries with active equity markets on which listed companies depended heavily for finance – the United States, Canada, the United Kingdom, Australia, and New Zealand – there were important differences. For example, in the U.K., Australia, and New Zealand, companies could revalue their property, plant, and equipment (PPE), including investment property. In the U.S. and Canada, mainly because of the conservative influence of the Securities and Exchange Commission (SEC), companies adhered to historical cost (Zeff S. A., 2007).

Research in the accounting literature convincingly concludes that accounting standards alone do not determine the outcome of financial reporting (Ball & Robin & Wu, 2003; Leuz & Nanda & Wysocki, 2003; Leuz & Wysocki, 2008). According to Holthausen (2009), financial reporting outcomes are the quality of financial reporting, measured in a variety of ways. Many forces shape the quality reporting and accounting standards should be viewed as but one of those forces (Holthausen, 2009). The most common measurement of the quality of accounting

information is auditing. American equity holders awoke in 2002 to realise they no longer could trust corporate financial reports (Morgenson G., 2002). Their doubts extended beyond Enron and Arthur Andersen to a large set of companies with a reputation for aggressive accounting. The auditors had sold their independence in exchange for consulting fees. The problem, said the auditors, was the shortage of rules (Bratton W. W., 2004).

Summarising the opinions of scientists, the author has concluded that the outcome of accounting does not depend on the quantity of rules, as the completeness and accuracy of information does not depend on the number of rules. Recent developments aimed at improving the quality of financial statements include corporate accountability reporting. Entities tend to provide more and more information to the users of their financial statements and therefore they try to adjust information to each group of users.

The amount of information one receives from entities these days is huge, but the question remains whether one is able to understand it and make proper use of it because of its codified nature. Accounting represents the financial world. This world is differentiated; it consists of different realities (Llewellyn, 2007), having some physical, or perhaps better described as material, aspects (tangible assets like buildings, equipment and cash) but, predominately, consisting of socially embedded elements (intangible assets such as intellectual capital, concepts like value and activities such as exchange) (Llewellyn & Milne, 2007). Coding rules apply to the various accounting categories. For example, detailed codes dictate what can count as an asset. Asset codes reflect the aspects of tangibility, property rights, future benefits and service potential (Williams, 2003).

After an analysis of the scientists' views, the author has concluded that there is no unanimity among scientists with respect to the necessary degree of disclosure of accounting reporting for its users. The author shares the opinion that the language used in accounting is codified and its disclosure to users can turn out not to be fully comprehensible; however, at the same time, in order to make adequate business decisions, detailed information is necessary about the on-going processes in a company. A certain degree of confidence in corporate reporting among its users is obtained from auditors' reports; however, the example mentioned above confirms the presence of some uncertainty in relation to the degree of trustworthiness of auditors' reports. In fact, the choice as to what kind of information the company will provide to the users of its external information depends on the company itself because, as the research carried out by the author shows, the large quantity of regulative acts does not mean that the information provided in financial reporting really reflects with the actual corporate performance.

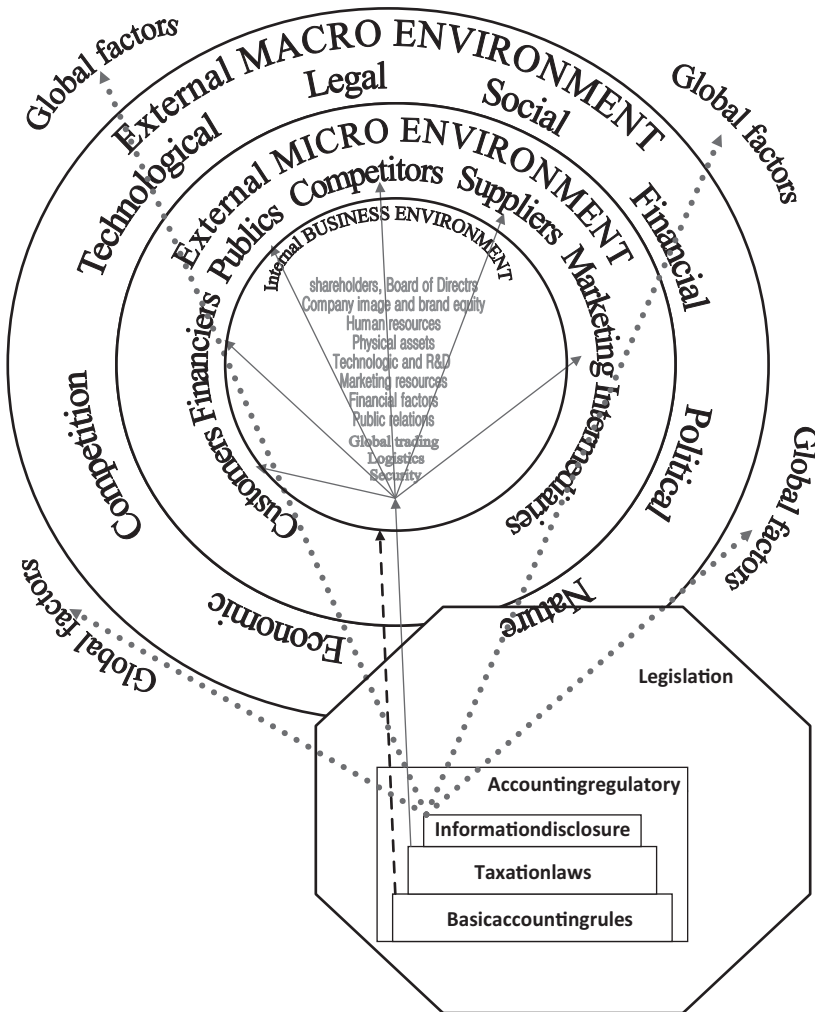


Figure 1 Impact of accounting regulations on the business environment

ANALYSIS OF ACCOUNTING REGULATORY SYSTEM IN LATVIA

According to the author, Latvian accounting regulations should be classified in three parts each of them including a number of acts.

The basic principles are disclosed in the Latvian law *On Accounting*. The law prescribes which forms of entrepreneurship should keep accounting records, who is responsible for keeping the accounting records, what characteristics the accounting records should possess, the rules for keeping the accounting records, the nature and significance of supporting documents, assumptions behind accounting

entries, rules for storage of documents, rules for preparation of stock-take reports, rules for submission of annual reports, distribution of competencies in accounting by responsible institutions, responsibility for compliance with the basic principles of accounting. This group should also include Cabinet of Ministers *Regulation regarding the conduct and organisation of accounting* issued in accordance with Section 15(1) of the law *On Accounting*. The regulation specifies the accounting organisation in the company, accounting controls and the accounting cycle by stages of work. The regulation details the requirements of the law and specifies what details of parties and what information on the transaction should be included in supporting documents. The regulation also describes the process of making accounting entries and the designations for the classification and accrual of entries, specify the information to be included in the records, show the correct order, refer to accounting matters connected with the use of accounting software, the need and content of accounting documents of a company. The regulation specifies the procedure and order of the stock-take. The author believes that the basic principles are also laid down in Cabinet of Ministers *Regulation regarding the accounting of cash operations* that detail the procedure for cash transactions and accounting for such transaction in the company. It is critical to include in the group of basic regulations also *Regulation on the preparation and formatting of documents* that lays down the rules for the preparation and formatting of supporting documents and defines what requirements documents should meet to be legally valid. As accounting entries can only be made on the basis of supporting documents these regulations have a direct impact on the accounting procedures of a company. As supporting documents may also take the form of electronic documents it is equally important to refer to Cabinet of Ministers regulation on the *Procedures for the preparation, drawing up, storage and circulation of electronic documents in state and local government institutions, and the procedures by which electronic documents are circulated between state and local government institutions, or between these institutions and natural persons and legal persons*. By the nature of their impact on entrepreneurship, the basic principles are seen by the author as unavoidable because when a physical or legal entity commences business activities it is the law that states the areas of responsibility and primary control measures for optimum business activities. When an individual makes the decision to commence business activities he or she must be aware that the basic principles of accounting will be binding for all types of entrepreneurship.

Tax legislation is the second group of acts regulating accounting that, combined with the basic principles of the first group, is used by the majority of entities. Based on the analysis performed in the previous chapter, tax legislation is divided by the author into the following four groups:

1. Indirect taxes paid by consumers upon purchase of goods or services;
2. Payroll taxes;
3. Capital gains taxes; and
4. Property taxes.

Indirect taxes paid by consumers upon purchase of goods or services are regulated by dedicated laws and the Cabinet of Ministers has issued regulations on the basis of these laws to explain the requirements and specific details of application. Indirect taxes are specific by the fact that they are paid by the company as it purchases goods or uses services. This feature prevents consumers from choosing a minimum amount of tax to be paid as both physical and legal entities have set minimum subsistence or consumption levels that they cannot breach if they want to remain in operation. The nature of indirect taxes according to the author is active and constant as it cannot be equal to zero at any time.

In contrary to indirect taxes, payroll taxes may differ significantly. Admittedly, a company cannot conduct any business without staff and to a certain degree this is the minimum level. However, in the case of idle time or recession one is able to reduce one's expenditure on labour force and remain within the theoretical limit which would equal zero, as according to the Latvian *Commercial Law* members of a company's board are permitted to work without remuneration on some occasions. During the growth stage of a company payroll taxes tend to increase with hardly any limits. The nature of the impact that payroll taxes have according to the author is active but highly fluctuating.

Capital gains taxes are binding on companies that have achieved capital gains as a result of their business activities. Taxes of this group tend to have diverse impacts on companies. Corporate income tax, which in Latvia is also part of micro-enterprises tax, is paid by companies if the result of their operations in the financial year is a profit regardless of the fact where such profit is intended to be used. Whereas capital tax is paid by companies only in case they plan to distribute their profit as dividends. According to the author, the nature of capital gains taxes is that of positive choice and stimulation because capital tax is not payable when a company makes the decision to reinvest profit and, consequently, each reinvested euro generates growth of the national economy.

Property taxes are binding for companies that possess or manage movable or immovable property in the understanding of the Latvian *Civil Law*. According to the effective laws of Latvia, movable property subject to property taxes includes property that falls under the definition of vehicles. According to the author, property taxes act as an indication of national welfare and the amount of these taxes promotes the elimination of inequality in the country and improves the country's GINI coefficient. This tax has a positive ability to regulate revenues in the state treasury as the payers of property tax select to purchase taxable objects after assessing their ability to maintain luxury goods and this increases their prestige in society. According to the author, this tax is an opportunity for Latvia to increase national revenues on account of wealthy inhabitants who opt to own high-value movable or immovable property.

It follows from the obligatory nature of the required disclosures that the optimum scope of disclosures is set in the laws and regulations of each country to enable users to make objective decisions regarding the entity. For example,

the tax administration would use such disclosures to assess whether the company's tax calculations comply with the rules effective in the country, financiers would analyse this information to make decisions on extending funds to the company, whereas society, in its consumer's capacity, would often analyse this information to gain an understanding on the company's ability to continue as a going concern and to meet its guarantee liabilities throughout the useful life of the end product.

According to the author, the acts governing the amount of disclosures in Latvia are poorly developed and instable. Companies operating on international markets use International Accounting Standards and International Financial Reporting Standards. However, companies that wish to disclose information to national users do so in accordance with the Latvian Accounting Standards, while the regulations issued by the Cabinet of Ministers to govern the application of these standards lost validity on 1 July 2012. At the moment, some uncertainty exists with regard to disclosures as Cabinet of Ministers Regulation on the application of the Annual Reports Law duplicates the Latvian Accounting Standards. The Ministry of Finance of Latvia makes public announcements regarding the Latvian Accounting Standards as an applicable part of the accounting policy: "Latvian Accounting Standards represent general and repeatedly applicable guidance that has been harmonised with the laws and regulations on accounting, European Union rights and International Accounting Standards and is used for the recognition and measurement of items of the financial statements and presentation of notes thereon." (Ministry of Finance of Latvia, <http://www.fm.gov.lv>, accessed on 22 November 2012, updated on 22 March 2012.)

In order for the companies to gain maximum benefit out of decisions that the users make they are required to disclose information in their financial statements that meets the objectives of all users. The users of annual reports can be divided in two groups: internal and external users. Internal users include company owners, management and staff, whereas external users include suppliers, customers, financiers, tax administration, government and society (Jones, 2006).

The personal interest of internal users of information is directed towards gaining higher profit from business activities as the amount of profit enters into determination of the amount of personal benefit, for example, owners will receive higher dividends, management will earn recognition of owners and possibly certain tangible benefits, and staff are likely to receive higher remuneration. The only drawback to disclosing additional information is that internal users may find it difficult to agree on the concept of profit distribution.

The interest of external users is not as straight forward as that of internal users. Each group of external users has their own relation to the company, for example, suppliers wish to sell raw materials and are interested in the company being solvent, whereas customers appear to be less interested in solvency of the company but more so in the quality of goods and the ability to assume guarantee liabilities. In its turn, the tax administration is interested in correct calculation and timely payment of taxes.

The assessment of compliance of the Latvian laws and regulations with the three layers of accounting laws and regulations has led the author to conclude that the first two groups fully meet the entrepreneurs' needs in terms of the basic accounting regulations and the application of laws and regulations; however, disclosure of information appears to be an area for development.

CONCLUSIONS AND PROPOSALS

According to accounting laws and regulations, the tax administration expects that companies conduct accounting in accordance with applicable laws and regulations and disclose appropriate amounts of information. According to scholars dealing with audit, no matter how many acts regulate accounting matters the risk of incorrect interpretation of laws and regulations or misstatement of information is still present. From the above the author concludes that should a company wish to withhold certain information it would be possible not to disclose or present it in the desirable format even when the annual report is audited.

The author is appreciative of the acts regulating the basic accounting principles as they include sufficient amounts of information to conduct accounting procedures.

Given the multitude of tax laws and regulations in existence, the author believes there always will be room for development. In addition, the cyclic nature of economy warrants that the need for taxation will change.

Scholars believe that in the area of disclosures there are positive trends, i.e. companies wish to present more information to the users of their financial statements. The author believes that additional transparency is treated by society as a sign of loyalty towards customers and that, in turn, may be an opportunity to increase the market share. The assessment of additional disclosures has led the author to conclude that each additional disclosure can have either a positive or a negative effect and these effects tend to differ from user to user. It is important, however, to note that through additional disclosures the company may change its goodwill. As the negative effects of providing additional disclosures apply only to a limited number of cases the author believes that the provision of additional disclosures is welcome. In the event of any negative effects on the company resulting from additional disclosures, the bad news is received by the company promptly and describes the issue accurately. When certain information is not disclosed by the company itself, society is still likely to learn adverse facts through the mass media and that may cause additional concerns for the company.

With regard to the laws and regulations governing the accounting, the author recommends that the bulk of the acts be divided in three parts. The first part would embrace acts that concern the basic principles of accounting. In Latvia, such acts include the law *On Accounting*, Cabinet of Ministers *Regulation regarding the conduct and organisation of accounting* that explains the law and *Regulation*

regarding the accounting of cash operations that details the procedure for cash transactions and accounting for such transaction in the company. It is critical that *Regulation on the preparation and formatting of documents* is also included in the group of basic regulations as it lays down the rules for the preparation and formatting of supporting documents and defines what requirements documents should meet to be legally valid.

The second group proposed by the author includes acts that regulate taxation. The author recommends dividing the entire tax base into four groups. The first group is indirect taxes paid by consumers upon purchase of goods and services, and taxes of this group have defined minimum amounts that arise from the basket of goods and services required by the inhabitants to meet their basic needs. The second group is payroll taxes with amounts changing on a virtually unlimited scale from zero up, and such amplitude is possible due to the fact that the amount of taxes depends on the number of employees, which, according to the *Latvian Commercial Law*, may fluctuate from zero to an ever increasing number during the growth phase. The third group is capital gains taxes that are paid by entities when their financial activities have generated profit. Moreover, if the financial result of a reporting period is a loss the entity is able to compensate it in the future reporting periods. The fourth group is property taxes directed at the owners or holders of movable and immovable property in the understanding of the *Latvian Civil Law*. Contrary to the former three groups, the target audience for this group of taxes is wealthy inhabitants. Progressive application of these taxes could serve as an effective tool for the state treasury to increase national budget revenues without any adverse effects on the less socially stable inhabitants.

It is the third group where the author includes acts that define disclosure requirements. In order for the companies to gain maximum benefit out of decisions that the users make they are required to disclose information in their financial statements that meets the objectives of all users. According to the author, at present this is the least orderly group of acts in Latvia compared to both former groups. There is some degree of uncertainty with regard to disclosure requirements as effective laws and regulations of Latvia rule out the use of the Latvian Accounting Standards in the disclosure of information while the Ministry of Finance, which is responsible for the accounting policies in Latvia, includes the Latvian Accounting Standards in the list of documents applicable to accounting policies.

REFERENCES

- Academic Vocabulary. LSA Terminology Commission, 2000., Accessed: www.lza.lv.
 Business Dictionary, viewed on 26 June 2012., Accessed: www.businessdictionary.com.
 Baluta, A. V., 2012. "The Role of Accounting and Accounting Law in Establishing Public Economic Policies in the Post-crisis Period", *Theoretical and Applied Economics*, Vol. 19, no. 6, pp. 111-120.

- Ball, R. & Robin, A. & Wu, J., 2003. "Incentives Versus Standards: Properties of Accounting Income in Four East Asian Countries", *Journal of Accounting & Economics*, Vol. 36, pp. 235-270.
- Bratton, W. W., 2004. "Ruls, Principles, and the Accounting Crisis in the United States", *European Business Organization Law Review* 5, pp. 7-36.
- Hirshleifer, D & Teoh, S. H., Winter 2009. "The Psychological Attraction Approach to Accounting and Disclosure Policy", *Contemporary Accounting Research*, Vol. 26, No. 4, pp. 1067-1090.
- Hodder, L., & Koonce, L., & McAnally, M., 2001. "SEC market risk disclosures: Implications for judgment and decision making", *Accounting Horizons* Vol. 15, no. 1, pp.49-70.
- Holthausen, R. W., 2009. "Accounting Standards, Financial reporting Outcomes, and Enforcement", *Journal of accounting Research*, Vol. 47, no. 2, pp. 447-458.
- Jones, M., 2006. "Accounting", Second Edition, John Wiley & Sons, NY.
- Kachelmeier, S. & King, R., 2002. "Using laboratory experiments to evaluate accounting policy Issues", *Accounting Horizons* Vol. 16, no. 3, pp. 219-232.
- Leus, C. & Nanda, D. & Wysocki, P., 2003. "Earnings Management and Investor Protection: An International Comparison", *Journal of Financial Economics*, Vol. 69, pp. 505-527.
- Leus, C. & Wysocki, P., 2008. "Economic Consequences of Financial reporting and Disclosure Regulation: A Review and Suggestions for Future Research", Working paper, NY: Booth: School of Business, University of Chicago.
- Llewellyn, S. & Milne, M. J., 2007. "Accounting as codified discourse", *Accounting, Auditing & Accountability Journal*, Vol. 20, no. 6., pp. 805-824.
- Llewellyn, S., 2007. "Case studies and differentiated realities", *Quantitative Research in Accounting and Management*, Vol. 4. no. 1, pp. 53-68.
- Morgenson, G., 30 January 2002. "Worries of More Enrons to Come Give Stock Prices a Pounding", NY Times, p. C1.
- Norrekliit, H. & Norrekliit, L. & Mitchell, F., 2010. "Towards a paradigmatic foundation for accounting practice", *Accounting, Auditing & Accountability Journal*, Vol. 23. no. 6, pp. 733-758.
- Williams, S. J., 2003. "Assets in accounting: reality lost", *Accounting Historians Journal*, Vol. 30., no. 2., pp. 133-174.
- Zeff, S. A., 2007. "The evolution of the IASC into the IASB, and the Challenges it Faces", *The Accounting review*, Vol. 87, no. 3, pp. 807-837.

WHAT'S INSIDE OF KNOWLEDGE MANAGEMENT EFFECTIVENESS?

VIESTURS BRĀLIS

Abstract

Modern organisations pay great attention to their efficiency. One of the most important factors that determine the efficiency of a modern organisation is that the organisation manages its knowledge. However, there is a lack of common interpretation, what does it mean “knowledge”, as well as unequivocal interpretation what could be an aim of knowledge management (KM). This article gives a detailed list of factors that, apparently, influence the effectiveness of knowledge management effectiveness in organisations. Also, the introduction of KM in organisations are evaluated directly from the knowledge management system (KMS) effectiveness point of view –as KM has been effective itself, and as KM increases the overall organisational effectiveness. This article explains the term “KM effectiveness” from different management approaches, and gives a deeper insight in “what does it mean – knowledge management effectiveness?” The article shows the causes that affect KM effectiveness of an organisation, what is KMS and what are more common used methods to measure KMS effectiveness of organisations. Based on an overview of available publications and researches about the subject, the author has proposed a seven step model how to begin an organisation’s knowledge effectiveness assessment process.

Keywords: Knowledge management, knowledge management effectiveness, knowledge management systems, knowledge acquisition, knowledge sharing, knowledge application

JEL code: A12, A22, D83

INTRODUCTION

“Knowledge” is indispensable keyword which many companies and organisations extensively use in developing their strategies, plans and insights into the future. “Knowledge” is considered an ultimate competitive advantage. Knowledge is a remarkable substance. Unlike other resources, the value of knowledge increases instead of decreases when used (Shapiro C., Varian H. R., 1999). As a result, knowledge management faces a significant challenge: the more knowledge is used, the more valuable it becomes for the people and the organisation(s) involved (Adler P. S., 2002). Knowledge management is “to identify, manage, and value items that the organisation knows or could know: skills and experience of people, archives, documents, relations with clients, suppliers and other persons and materials often contained in electronic databases” (Davenport Th. H., Prusak L., 2000). Effective knowledge management is not

an ultimate solution to all and everything; it is just one of many components of good management. Sound planning, smart marketing, high-quality products and services, attention to customers, the efficient structuring of work, and the thoughtful management of an organisation's resources are not cancelled due to an acknowledgement that knowledge is critical to success and needs to be managed. However, when a business faces competitors that perform well on those other dimensions, the difference between success and failure may well turn on how effectively it manages its knowledge (Davenport Th. H., Prusak L., 2000, Cameron K. S., Quinn R. E., 2011).

Organisations that have been effective in knowledge management are likely to regard knowledge as an asset, to develop organisational norms and values which would support the acquisition, sharing and application of knowledge among their employees, which are all necessary for overall organisation effectiveness (Davenport Th. H., Prusak L., 2000).

This article is intended to show the reader, what factors affect the effectiveness of the knowledge management, show approaches of KM effectiveness assessment that is the most frequently mentioned in the literature, and, on this basis, provide a model the use of which any particular organisation could create their own KM assessment style based on their needs. To achieve this objective, the author has put forward the following tasks: 1) explore how is understood the concept of "knowledge", because we could manage only what we understand; 2) explore which perspectives KM provides to manage knowledge and how different perspectives influence KM goals; 3) explore how changing understanding of the knowledge management purposes can affect "KM effectiveness" understanding; 4) to understand how a term "KM effectiveness" is defined and what factors are taken into account to define this term; 4) offer an insight into the common KM effectiveness measuring systems; and 5) provide a model for evaluation of an organization's KM effectiveness assessment style based on the analysis done.

KNOWLEDGE DEFINITIONS

What is knowledge? There are many definitions of term "knowledge" available in the literature. However, the author will not go deep into definitions, but concentrate on the matter of the subject of "knowledge effectiveness" and therefore the author provides a widely used definition of term "knowledge" (which is also mainly used to describe knowledge in organisations) as such – "Knowledge is the combination of data and information, to which is added expert opinion, skills, and experience, to result in a valuable asset, which can be used to aid decision making process. Knowledge may be explicit and/or tacit, individual and/or collective" (European Committee for Standardization, 2004). Knowledge is a valuable substance, and is generally seen as one of the most important assets in organisations that should be carefully managed. In the context of this article the author believes that the term "knowledge" in organisations is considered

as a useful resource which needs to be managed effectively. Knowledge from this perspective is what human communities have accumulated over time to understand the world and act effectively in it (Wenger E., 2004). Knowledge, or know-how, involves the process of learning, understanding, and applying information (Soo Ch., Devinney T., Midgley D., Deering A., 2002). On the significance of knowledge as a resource is based the so called knowledge based economy (Davenport Th. H., Prusak L., 2000), which is deeply related to the Science of Management and its subject of “effectiveness” in particular.

Knowledge is different from information. It requires a different set of concepts and tools to be managed effectively. Six characteristics of knowledge distinguish it from information: 1) knowledge is a human act; 2) knowledge is the residue of thinking; 3) knowledge is created in the present moment; 4) knowledge belongs to communities; 5) knowledge circulates through communities in many ways; and 6) new knowledge is created at the boundaries of old (Mcdermott R., 1999). The previously given “knowledge” definition is very simple, however, according to C.Zins research (Zins C., 2007). which is a summary of more than 130 different data, information and knowledge definitions, which are provided by modern leading KM researchers, the author of this article made a conclusion that most knowledge definition include categories such as: 1) information, that is understood; 2) include people experience, intuition and expertise; 3) are created due to some process or interaction; 4) is a human possession, is something which cannot be detached from human; and 5) always include human as a “knowledge evaluator”. According to the author, “knowledge” definitions collected in C. Zins work are often contrary to each other, they stress different accents in knowledge nature and, therefore, the author concludes that, despite the considerable work that has been carried out to find the “right” definition and understanding of knowledge, there is not a common understanding of what is “knowledge”. According to the author, it seriously affects an understanding of “knowledge management effectiveness” because how can one tell what does it mean “knowledge management effectiveness” if there is no common understanding of what does it mean “knowledge”?

VARIOUS KNOWLEDGE MANAGEMENT (KM) DEFINITIONS

To be ready to analyse the effectiveness of KM itself and the effectiveness of KM applications in organisations in particular, one needs to understand in detail, what is KM from various points of view. There are various definitions of term “knowledge management” available in the literature based on the different views of knowledge. For instance, knowledge management refers to identifying and leveraging the collective knowledge in the organisation to help the organisation compete in the market (Von Krogh G., 1998, Von Krogh G., Nonaka I. and Aben M., 2001). Hanley and Dawson (Hanley S., Dawson C., 2000) viewed

knowledge management as a collecting procedure for effectively conducting the creation, expansion, and effect of knowledge, and to accomplish goals in an organisation. Knowledge management is an integrated, systematic approach to identify, manage, and share all of the department's information assets, including databases, documents, policies and procedures, as well as previously unarticulated expertise and experience resident in individual officers (Jones D., 2003). KM is also known as a systematic, goal-oriented application of measures to steer and control the tangible and intangible knowledge assets of organisations, with the aim of using existing knowledge inside and outside of these organisations to enable the creation of new knowledge, and generate value, innovation and improvement (Wunram M., 2000).

Knowledge management has been broadly defined from three different perspectives – individual skills perspective, process perspective and management perspective (Sims R., 2008). There are some KM definitions from the three different perspectives:

- **Individual skills perspective:** Tsoukas and Vladimirou KM definition: “The dynamic process of turning an unreflective practice into a reflective one by elucidating the rules guiding the activities of the practice, by helping give a particular shape to collective understandings, and by facilitating the emergence of heuristic knowledge” (Tsoukas H., Vladimirou E., 2001). M. E. Jennex KM definition: “The practice of selectively applying knowledge from previous experiences of decision making to current and future decision-making activities with the express purpose of improving the organisation's effectiveness.” (Jennex M. E., 2007).
- **Process based perspective:** From the process view of the KM, it can be defined as the creation, acquisition, sharing, and utilisation of knowledge for the promotion of organisational performance (Laurie J., 1997). Allee (Allee V., 1997), Davenport (Davenport Th. H., Prusak L., 2000), Alavi and Leidner (Alavi M., Leidner D. E., 2001): “KM is managing the corporation's knowledge through a systematically and organisationally specified process for acquiring, organising, sustaining, applying, sharing and renewing both the tacit and explicit knowledge of employees to enhance organisational performance and create value”; Davenport, Prusak, and Strong (Davenport Th. H., Prusak L., and Strong A., 2008): “...a concentrated effort to improve how knowledge is created, delivered and used...”; Y. Malhotra (Malhotra Y., 2008; Malhotra Y., 2005): “Knowledge Management refers to the critical issues of organisational adaptation, survival and competence against discontinuous environmental change. Essentially it embodies organisational processes that seek synergistic combination of data and information processing capacity of information technologies, and the creative and innovative capacity of human beings.” The process based approach is being widely used next in this article due to its clearly given distinction between processes which form KM itself and recommendations to organisation management which could be given to

improve KM processes. The process based approach to KM emphasises that knowledge is an organisation's resource.

- **Management perspective:** Firestone (Firestone J., 2008): "KM refers to activities aimed at enhancing knowledge processing. These activities are interventions designed to affect how knowledge processing is done." Frappaolo (Frappaolo C. (Ed.), 2006): "The leveraging of collective wisdom to increase responsiveness and innovation." Holsapple and Joshi (Holsapple C. W., Joshi K. D., 2004): "An entity's systematic and deliberate efforts to expand, cultivate, and apply available knowledge in ways that add value to the entity in the sense of positive results in accomplishing its objectives or fulfilling its purpose." Sveiby (Sveiby K. E., 2001): "The art of creating value from an organisation's Intangible Assets". Darroch and McNaughton (Darroch J., McNaughton R., 2002): "Knowledge management is the management function that encompasses the creation of knowledge, management of the flow of knowledge within the organisation, and usage of knowledge in an effective and efficient manner for the long-term benefit of the organisation".

Consequently, the author concludes that each of the KM perspectives outlines different aspects of knowledge management. The individual skills perspective puts forward employee skills and abilities, consequently, according to the author; KM efficiency here is interpreted as individual skills management efficiency. The process based perspective focus on the process how "knowledge" can be managed as "company resource" and consequently KM efficiency, according to the author, could be interpreted as a sum of those process effectiveness's which contributes to whole KM process. In turn, from the KM management perspective KM effectiveness can be interpreted from systemic, organisation as a whole point of view. Therefore, from a management perspective, as author suggests, KM effectiveness is only one of the elements that contributes to the whole system (i.e. organisation's) effectiveness.

According to the author clearly, there are three different approaches how one can interpret KM effectiveness, which also affects the KM effectiveness measuring methodology and results interpretation. But when one is looking to the organisation from a "knowledge as a resource" point of view, a greater role in assessing KM effectiveness, according to the author, could be granted to process (or resource) based approach because this approach offers a well-developed measurement methodology.

DIFFERENT APPROACHES TO KM EFFECTIVENESS DEFINITION

According to Arthur Anderson Business Consulting the term "performance" refers to a measurement of extent to which an organisation reaches a given objective; and the term "operational performance" refers to the measured effect

of each operational variable within overall “performance” (Arthur Andersen Business Consulting, 1999). To evaluate the “operational performance” of KM, the American Productivity and Quality Center (www.apqc.org) and Arthur Andersen Business Consulting (Arthur Andersen Business Consulting, 1999) developed a knowledge management assessment tool (KMAT) in 1995. KMAT can be used by enterprises to select the appropriate type of KM. KMAT is composed of five fundamental elements: 1) leadership and KM; 2) KM culture (e.g. performance related to organisational culture (Cameron K. S, Quinn R. E., 2011); 3) KM technology; 4) KM measurement; and 5) KM process. Four key success factors were proposed: a) procedures of KM adopted; b) persons involved in KM; c) supporting organisational structure for KM; and d) information technology utilized in KM. The author has studied some KMAT questionnaires, and came to the conclusion that: 1) a questionnaire could not be filled out without significant preparatory work, the questions are complex, deep (for example, “Knowledge Gaps are systematically identified and well-defined processes are used to close them”); 2) Questions are prepared on the basis of the opinion that they cover all vital processes which affect the efficiency of the whole organisation; 3) KMAT tool looks on “knowledge” more as a “kind of information”; and 4) in modern management science prevails a point of view that boundaries of an organisation could not be well defined and management as intangible resources become increasingly important for organisations to be successful. The author suggests that the KMAT questionnaire lacks important fundamental elements – KM impact on organisations, image assessment or Image management in context of KM (how KM practice affects all possible public impressions about the organisation).

To know how to manage knowledge effectively, usually it is necessary to know the underlying constructions on which knowledge management is based. The literature shows that KM is mainly based on four pillars – Knowledge is a function of culture, skills, information (Rampersad H., 2002a, Rampersad H., 2002b) and technology. Therefore, in order for knowledge to be enhanced effectively, interaction is necessary between technologies, techniques and people to allow an organisation to manage its knowledge effectively (Holsappl C. W., Joshi K. D., 2004). Hence, the relationship between culture, information, technology and skills must be considered as an important in relation to KM effectiveness (Rampersad H., 2002a; Rampersad H., 2002b). According to the Arthur Andersen Business Consulting proposed model of KM (Rampersad H., 2002a), an additional component (in addition to the already mentioned culture, information, technology and skills) should be added to give a complete view on a subject – wisdom. Wisdom is defined as “constructive” use of knowledge (Matthews P., 1997) or “use of knowledge ... to achieve a common good” (Sternberg R. J., 2003). Therefore, according to Arthur Andersen Business Consulting, KM effectiveness should be considered as a function of effectiveness of KM components – culture, information, technology, skills and wisdom (Arthur Andersen Business Consulting, 1999).

According to Ralph (Ralph L., 2003) knowledge management effectiveness is a management discipline which focused on the development and usage of knowledge to support the achievement of strategic business objectives of organisation. According to Salisbury (Salisbury M. W., 2003) knowledge management effectiveness relates to the deployment of a comprehensive system that enhances the growth of an organisation's knowledge. Based on the views of Gold, Malhotra, and Segras's (Gold A. H., Malhotra A. and Segras A. H., 2001) as well as Alavi and Leidner (Alavi M., Leidner D. E., 2001) knowledge management effectiveness can be analysed from a process perspective, which include, as mentioned above, three key functions –knowledge acquisition, knowledge sharing and knowledge application. Hence, for effective knowledge management to take place, an organisation's KM system needs to be effective in these three components (Ling T. C., Nasurdin A. M., 2010).

When knowledge is acquired, shared, and applied, the learning process takes place to improve the collection of knowledge available to the organisation (Jimenez-Jimenez J., Sanz-Valle R., 2005) and as a result, reflect effectiveness of KMS itself. According to Alavi and Leidner (Alavi M., Leidner D. E., 2001), maximisation of knowledge-related effectiveness of an organisation will result in actions for innovation, which, in its turn, results in improving effectiveness of whole organisation. Operating within a highly competitive and uncertain environment, manufacturing firms need to be more likely to place greater emphasis on knowledge management effectiveness. If an organisation demonstrates competence in knowledge management, it can be considered as having a knowledge management-orientation (Darroch J., McNaughton R., 2002) which means some degree of knowledge management effectiveness.

Hoy and Miskel (Hoy W. K., Miskel C. G., 2001) suggests that measurement of the effectiveness of organisational KM activity could be classified into four phases: a) knowledge adaptation effectiveness; b) knowledge achievement effectiveness; c) knowledge integration effectiveness; and d) knowledge potential effectiveness.

According to the author, KM effectiveness definitions primarily emphasise a process based perspective. This definition takes into account both KM processes and organisation processes. From KM process point of view (acquisition, sharing, application etc.), it is noted that, if these processes are managed effectively, the organisation tended to improve its overall efficiency. From the point of view of the organisation's process KM effectiveness is interpreted as the improvement of certain aspects of organisation's management (these aspects are culture management, information management, technology management, skills management, innovation management, etc.) by using KM methods. According to the author, the KM process perspective is quite rightly widely used because: 1) the processes can be measured, and with it, they could be driven; 2) KM believes that processes contribute to the overall organisational effectiveness, therefore through management of the processes one can manage the organisation;

3) wisdom is mentioned as one of KM effectiveness component, however it is not used to define any process in the organisation in the context of KM effectiveness. The author concludes that the KM process perspective assumes that KM process (es) affects the performance of the organisation, and along with the improving of KM processes, it is possible to improve an organisation's total performance. At the same time, according to the author, as well as based on some researches mentioned in the literature (Malhotra Y., 2008, Mentzas G., Apostolou D., Abecker A., Young R., 2003) the relationship between knowledge acquisition, sharing and application and organisational total performance is not proved unambiguously. Based on this the author proposes that in the case of a particular organisation it is necessary to assess carefully the impact of each KM process on total organisational performance before using a particular process assessment as an indicator of KM effectiveness. In the next section the author offers a short look at the organisation's knowledge management systems, the mechanisms which an organisation can use to manage its knowledge in accordance with each organisation's understanding of what is the main purpose of KM.

KNOWLEDGE MANAGEMENT SYSTEMS

Knowledge Management Systems (KMS) are systems designed to manage organisational knowledge. Alavi and Leidner (Alavi M., Leidner D. E., 2001) clarify KMS as IT-based systems developed to support/enhance the processes of knowledge creation, storage/retrieval, transfer, and application. Additionally a KMS supports knowledge management through the creation of network based Organisational Memory (OM) and support for virtual project teams and organisations and communities of practice. A final goal of a KMS is to support knowledge/OM creation. There are two approaches to building a KMS – the process/task approach and the infrastructure/generic approach. The process/task approach focuses on the use of knowledge/OM by participants in a process, task or project in order to improve the effectiveness of that process, task or project. This approach identifies the information and knowledge needs of the process, where they are located, and who needs them. This approach requires the KMS to capture minimal context because users are assumed to understand the milieu of the knowledge that is captured and used. The infrastructure/generic approach focuses on building a system to capture and distribute knowledge/OM for use throughout the organisation. The concern is with capturing context to explain the captured knowledge and the technical details needed to provide good mnemonic functions associated with the identification, retrieval, and use of knowledge/OM. The approach focuses on network capacity, database structure and organisation, and knowledge/information classification.

Both approaches may be used to create a complete KMS. The process/task approach supports specific work activities, while the infrastructure/generic approach integrates organisational knowledge into a single system that can

be leveraged over the total organisation instead of just a process or Project (Jennex M. E., Olfman L., 2004). Morrison and Weiser (Morrison J., Weiser M., 1996) and Chantarasombat, Srisa-ard, Kuofie and Jennex (Jennex M. E., Chantarasombat Ch., Srisa-ard B., Kuofie M. H. S., 2010) support the dual approach concept by suggesting that an organisation-wide KMS be designed to combine an organisation's various task/process based KMSs into a single environment and integrated system.

According to the author KMS are complex and complicated systems, and the KMS development process could consume significant organisational resources. Providing KMS maintenance and functioning could be an additional management task, which also could be managed by KM methods. According to the author, before proceeding with any KMS system implementation project, the organisation should carefully consider the necessity of such a system; evaluate gains and losses, pros and cons. Each of the KMS provides a different view of the organisation's knowledge management and takes into account different factors of an organisation's knowledge management effectiveness. These various factors, as the author concluded, may often conflict with each other (infrastructure generic approach requires a broad integration, which in turn may be contrary to the needs of any individual process/task approach). So, the KM process performance criteria may conflict with each other, which draw the author to the conclusion that, to assess the effectiveness of KM, one needs to understand what one would like to evaluate and for what purpose it is necessary.

DIFFERENT KM EFFECTIVENESS APPROACHES

From a review of available literature it can be concluded that there are many different approaches used to determine KMS effectiveness. One of them looks at the effective implementation of KM processes as the indicator of KM effectiveness with the expectation that effective processes will lead to successful knowledge use. These models identify KM processes by looking at KM/KMS success factors. Another approach looks at identifying the impact from the KM/KMS implementation in respect of an organization's processes with the expectation that if there are improvements from using knowledge then the KM/KMS implementation is successful. These models consider success a dependent variable and seek to identify the factors that lead to generating impacts from using knowledge.

Ling and Nasurdin (Ling T. C., Nasurdin A. M., 2011) as well as McInerney and Koenig (McInerney C. M., Koenig M. E. D., 2011) and others divide KM performance (effectiveness) into qualitative and quantitative measures from a variety of perspectives. Qualitative measures include improving employee skills, product quality, business processes, and customer (supplier) relationships; while quantitative measures include reducing operating costs, improving productivity, and increasing profits. Chua and Goh (Chua A. Y. K., Goh D. H., 2008) identify

four elements in a KM initiative, namely, knowledge activities, knowledge assets, the impact on organizational processes, and business objectives; while Khalifa and Liu (Khalifa M., Liu V., 2003) view KM effectiveness as KM's impact on achieving a firm's goals.

KM effectiveness has been assessed by a number of studies using diverse criteria, such as the quality of knowledge and the perceived usefulness of knowledge (Brachos D., Kostopoulos K., Soderquist K. E., Prastacos G., 2007), the satisfaction derived by using knowledge (Becerra-Fernandez, I. and Sabherwal R., 2001; Choi S. Y., Kang Y. S., Lee H., 2008; Lin H. F., 2007). Corso et al. (Corso M., Martini A., Pellegrini L., Massa S., Testa S., 2006) observe that satisfaction, i.e., a user's perception that the design of an organisational system meets his/her knowledge needs for solving task-related problems, is a frequently-cited construct and an individual-level perspective for measuring KM outcomes. The level of satisfaction derived from using knowledge depends on information availability and knowledge sharing. It is therefore an appropriate variable for assessing KM effectiveness (Becerra-Fernandez I. and Sabherwal R., 2001; Chou T. C., Chang P. L., Tsai C. T., Cheng Y. P., 2005).

Some of the more common approaches are outlined here for the purposes of providing a general overview:

- a) *Measuring the impact of knowledge management on corporate performance.* The sole purpose of any kind of KM activities is to improve the performance of the corporation and to help it to achieve its objectives. Measuring outcomes focuses on the extent to which a project or a process achieves its stated objectives. Usually these measures will be quantitative ("hard") measures (% , numbers etc.). However these measures only give part of the picture – they do not tell one why people are doing what they are doing. Hence to complete the picture, one will also need qualitative ("soft") measures by asking people about the attitudes and behaviours behind their activities (O'Dell C., Grayson C., Jackson G. C., 1998).
- b) *Balanced scorecard.* The balanced scorecard focuses on linking an organisation's strategy and objectives to measures from four key perspectives: financial, customers, internal processes, and learning and growth. In contrast to traditional accounting measures, the balanced scorecard shifts the focus from key measures to intangible success factors. These roughly equate to the three components of intellectual capital – namely human capital (learning), structural capital (processes), and customer capital. The balanced scorecard approach can be applied to individual initiatives as well as to a whole corporation.
- c) *Return On Investment (ROI).* Most initiatives that require resources will be expected to show a return on investment – what benefits did one get to justify the costs involved – and knowledge management is usually no exception. A number of approaches have been developed for showing financial returns on knowledge assets, such as that of Clare and

Detore [17] Such approaches tend to be rather complex, and therefore are probably more appropriate for organisations that are reasonably advanced in their knowledge management efforts, rather than just starting out. ROI is considered not the best measurement for KMS performance (Kim Jong-Ae., 2006; Grant A. M., 2012).

- d) *The knowledge management lifecycle (Maturity of KM)*. The map of *KM Maturity* (KMM) has five stages: a) Get started, b) Develop a strategy, c) Design and launch a knowledge management initiative, d) Expand and support, and e) Institutionalise knowledge management. There are measures associated with each stage. KMM is a methodology to develop Knowledge Management goal oriented, systematically and holistically. It consists of two models – a development model and an analysis model. The development model defines five maturity levels (initial, repeated, defined, managed and optimising) and provides information how to make the next reasonable step in Knowledge Management Development. The analysis model helps to take account of all important aspects of Knowledge Management and reveals which topics should be developed in future. The model consist of eight key areas – Strategy, knowledge goals; Environment, partnership; People, competencies; Collaboration, culture; Leadership, Support; Knowledge structure, Knowledge forms; Technology, infrastructure; Processes, Roles, organisation; As a third component an auditing process is defined which structures planning, data collection by interviews and workshops, and feedback sessions (Hang C., Samuel K. W. C., Wendy W. Y. W., 2012).
- e) *Employee surveys*. Given the importance of people in knowledge management, employee surveys can be a useful additional to the measurement toolbox. Surveys can be used to assess aspects of organisational culture and the extent to which people's opinions, attitudes and behaviours are, or are not, changing. Obviously such surveys measure people's subjective perceptions and these may or may not reflect reality, but in many ways that can be their very benefit, as people's perceptions will determine their behaviours with respect to knowledge management.

In general, knowledge management effectiveness can be conceived of as the effectiveness of an organisation in managing the knowledge acquired, shared, and applied by its employees. Organisations that effectively manage their knowledge within the organisation will have higher organisational innovation in turn to achieve breakthrough competitive advantage. As the author concludes, the wide range of KM effectiveness interpretations is associated with both a wide interpretation of the concept of “knowledge” and different views on what is KM. The author believes that another factor that determines the broad range of KM effectiveness understanding is related to the difficulties associated with the definition of concrete results, which the organisation is seeking to get using KM methods. According to the author, summarising different KM effectiveness

measurement methods, one can come to the conclusion that they can be described by a two-dimensional model, where one dimension is the “hard” – “soft” – and the other is “process” (or internal approach) – “result” (or external approach). As was mentioned in the introduction of this article one thinks about “knowledge” as a resource of an organisation. Therefore, the author believes, of particular importance is the KM effectiveness interpretation arising directly from the belief that knowledge is a resource that can be used to improve the overall performance of the organisation. And this view particularly emphasises the KM process perspective. On the basis of it, the author offers a deeper look into KM effectiveness measurement approaches directly from the KM process perspective.

PROCESS APPROACH MEASURING KM EFFECTIVENESS – INSIGHT

Based on the knowledge-based view of the firm, different capabilities in developing and deploying knowledge will lead to differences in organisational performances. Thus, knowledge has become the most strategically significant resource of the firm (Grant R., 2000; Nonaka I., 1994). According to Grant (Grant R., 2000) a knowledge-based view consists of assumptions which include the characteristics of knowledge and the circumstances of its acquisition, sharing, and application, which can be considered as a crucial capability of the firm, which serves as the primary driver of KM effectiveness. This means that an organisation’s effectiveness in knowledge management will enable them to continuously transform their administrative process, information system, and organisation structure into new innovation which could improve the effectiveness of the whole organisation. This aligns well with the argument by Jennex and Olfman (Jennex M. E., Olfman L., 2004; Jennex M. E., Olfman L., 2006; Jennex M. E., Zakharova I., 2008) that knowledge management effectiveness is expected to strengthen organisational capability to innovate. Knowledge management effectiveness has been identified as having three effectiveness dimensions: knowledge acquisition or knowledge generation effectiveness, knowledge sharing or knowledge transfer effectiveness, and knowledge utilisation or application effectiveness (Gold A. H., Malhotra A. and Segras A. H., 2001; Shapira P., Youtie J., Yogevaran K., Jaafar Z., 2005; Zheng W., 2005).

KNOWLEDGE ACQUISITION EFFECTIVENESS

Knowledge acquisition, also known as knowledge generation refers to the activity of identifying knowledge in the environment and transforming it into a representation that could be internalised, and/or used (Holsapple C. W., Joshi K. D., 2004; Liebowitz J., 1999). Based on Gold et al. (Gold A. H., Malhotra A. and Segras A. H., 2001), the effectiveness of knowledge acquisition can be viewed from two perspectives: a) creation of new knowledge from the application of existing knowledge, and b) improved usage of existing knowledge and more

effective acquisition of new knowledge. Generally, knowledge and opportunities acquired from a firm's business partners (such as customers and suppliers) can be used as information to increase the likelihood of meeting customer's requirements by improving the quality of service and administrative system (Pinho J. C., 2007). In other word, knowledge acquisition helps to ensure the smooth development and establishment of new procedures and approaches, which could led to effectiveness improvement. When firms are effective in their acquisition of knowledge from external sources especially specialised knowledge, they are likely to increase their innovative capabilities, enhancing their knowledge to establish new procedures (Chen C. J., Huang J. W., 2009; Liao S. H., Wu C. C., Hu D. C., Tsuei G. A., 2009).

KNOWLEDGE SHARING EFFECTIVENESS

Knowledge sharing is also called knowledge transfer or knowledge diffusion and refers to the process in which knowledge is transferred from one person to another, from individuals to groups, or from one group to another (Davenport Th. H., Prusak L., 2000). According to Chen and Huang (Chen C. J., Huang J. W., 2009) knowledge sharing relates to the understanding of information and communication among team members from the different functions within the firm concerning customer requirements, suppliers' capacities, and internal capabilities. Ralph (Ralph L., 2003) articulated that knowledge sharing is a process capturing valuable knowledge and stringing it, making it available for the organisation to be used by the employees – the process of transforming knowledge into an easily accessible form and the process of accessing context specific knowledge for a specific purpose, whether by a user seeking it directly or by having it delivered unprompted.

Knowledge sharing involves organisational members who willingly contributed their knowledge for organisational memory. When knowledge is shared among employees, the flow of knowledge and information becomes smoother and faster, and this will help to provide faster feedback to the management authorities, resulting in prompt decision-making (Chen C. J., Huang J. W., 2009; Zheng W., 2005).

KNOWLEDGE APPLICATION EFFECTIVENESS

Knowledge application, also termed as knowledge utilisation or knowledge implementation, refers to the mechanism for an organisation to store, to retrieve, to adjust strategic direction, solve new problems, and improve efficiency (Gold, A. H., Malhotra, A. and Segras, A. H., 2001). Knowledge must flow into actions in order to be useful and beneficial to the organisation (Demarest, M., 1997). Knowledge application can be viewed from various sources, such as when employees apply the firm's internal knowledge to their individual and team work, when the organisation apply information sourced from external to

improve, planning process, administrative system and organisational-integrated mechanisms (Chen C. J., Huang J. W., 2009). Knowledge application effectiveness helps to ensure that the effort expended in managing and maintaining knowledge within organisation remains cost-effective and create value for the firm. With this fact, firms will be able to update its core competence, leading to greater overall performance (Chen C. J., Huang J. W., 2009; Zheng W., 2005).

As can be seen, the process perspective of defining KM clearly shows the benefits of KM process management, because of linking the effectiveness of this process with a total organisational efficiency. Improving each of these KM processes, it is possible to improve the overall effectiveness of the organisation. The author believes that the process based perspective takes into account the fact that there are different types of knowledge (Blackler F., 2009, European Committee for Standardization, 2004), but at the same time does not offer an opportunity to take into account to which of the processes must be drawn more attention, depending on the type of knowledge, which is dominant in the organisation. According to the author, the type of the knowledge which dominates in any particular organisation (and which are used by the organisation as a resource to perform the organisation's tasks) essentially determines the distribution of KM processes in the organisation.

CONCLUSION AND RECOMMENDATIONS

To find a suitable KM effectiveness assessment method for each organisation it is not enough to take a standard methodology and formally fill it. The author proposes that for each organisation it is required to find a way to create their own methodology based on the known KM knowledge, methodologies, approaches and ideas. Each organisation's personal approach clearly will depend on the goals proposed for the organisation's KM, from the form in which the organisation wants to see the evaluation of the effectiveness of KM, etc. In view of the above, the author offers a seven step method how to choose a particular organisation's KM effectiveness assessment style or assessment principles. These seven steps are: 1) Define a goal of KM effectiveness assessment – what does one want to do with results that one will get; 2) What does one mean with term “knowledge” in case of their particular organisation; 3) Which aspects of KM needs to be assessed – “soft” of “hard”; 4) What is the scope of KM effectiveness assessment – some particular tasks or processes in the organisation or the whole organisation's performance, overall assessment; 5) What form of results are more appropriate for ones goals – quantitative or qualitative; 6) One needs to choose which of the KM processes have more impact on ones KM effectiveness assessment in the particular organisation in particular assessment period; and 7) How a particular KM approach affects the overall organisation's image (this step is deeply related to concept of wisdom – knowing something above particular knowledge and know how to use it for the good of the organisation as a whole).

According to the author, the proposed model provides guidelines under which one can easily and efficiently compose KM effectiveness evaluation requirements for a particular organisation. Drawn up by following the KM effectiveness assessment methodology, the model will give specific and useful improvement to the organisation's KM system. Even though the model is based on the existing studies and existing knowledge, the author believes that the practical realisation of the model will provide an organisation, in which it will be applied, with following benefits – 1) economy of time and other resources; 2) the precise results obtained in conformity with the organisation's KM system needs; 3) the results obtained will be understandable and practically applied; 4) the organisation will be provided with a deeper understanding of the specific organisation's processes and connections between them which could allow it to evaluate more precisely KM effectiveness factors regarding this particular organisation.

REFERENCES

- Adler, P. S., 2002. Market, hierarchy, and trust: the knowledge economy and the future of capitalism. In Chun Wei Choo and N. Bontis, pp. 23-46.
- Alavi, M., Leidner, D. E., 2001. "Review: knowledge management and knowledge management systems: conceptual foundations and research issues", *MIS Quarterly*, Vol. 25, No. 1, pp. 107-36.
- Allee, V., 1997. "Twelve principles of knowledge management", *Training and Development*, Vol. 51 No. 11, pp. 71-74.
- American Productivity and Quality Center (APQC), Knowledge Management Consortium Benchmarking Study: Final Report, APQC, Houston, Texas. Online. Available at: www.apqc.org. Accessed 13.02.2013.
- Arthur Andersen Business Consulting, 1999. *Zukai Knowledge Management*, Tokyo Keizar Inc., Japan.
- Becerra-Fernandez, I. and Sabherwal, R., 2001. "Organizational knowledge management: a contingency perspective", *Journal of Management Information Systems*, 18(1), pp. 23-55.
- Bhatt, G. D., 2009. Knowledge management in organisations: examining the interaction between technologies, techniques and people. *Journal of Knowledge Management*, 5, pp. 68-75.
- Blackler, F., 2009. "Knowledge, knowledge work and organizations: an overview and interpretation", *Organization Studies*, Vol. 16, No. 6, pp. 21-46.
- Brachos, D., Kostopoulos, K., Soderquist, K. E., Prastacos, G., 2007. "Knowledge effectiveness, social context and innovation", *Journal of Knowledge Management*, 11(5), pp. 31-44.
- Cameron K. S, Quinn R. E., 2011. *Diagnosing and Changing Organizational Culture, Based on the Competing Values Framework*, New York: Addison-Wesley, p. 123.
- Chen, C. J., Huang, J. W., 2009. Strategic human resource practices and innovation performance; The mediating role of knowledge management capacity, *Journal of Business Research*, Vol. 62, No. 1, pp. 104-114.
- Choi, S. Y., Kang, Y. S., Lee, H., 2008. "The effects of socio-technical enablers on knowledge sharing: an exploratory examination", *Journal of Information Science*, 34(5), pp. 742-754.

- Chou, T. C., Chang, P. L., Tsai, C. T., Cheng, Y. P., 2005. "Internal learning climate, knowledge management process and perceived knowledge management satisfaction", *Journal of Information Science*, 31(4), pp. 283-296.
- Chua, A., 2009. "The dark side of successful knowledge management initiatives", *Journal of Knowledge Management*, Vol. 13, No. 4, pp. 32-40.
- Chua, A. Y. K., Goh, D. H., 2008. "Untying the knot of knowledge management measurement: a study of six public service agencies in Singapore", *Journal of Information Science*, 34(3), pp. 259-274.
- Clare, M., Detore, A., 2000. *Knowledge assets: a professional's guide to valuation and financial management*, Harcourt Brace Professional Publishers.
- Corso, M., Martini, A., Pellegrini, L., Massa, S., Testa, S., 2006. "Managing dispersed workers: the new challenge in knowledge management", *Technovation*, 26, pp. 583-594.
- Darroch, J., McNaughton, R., 2002. Examining the link between knowledge management practice and types of innovation. *Journal of Intellectual Capital*, 3(3), pp. 210-222.
- Davenport, Th. H., Prusak, L., 2000. *Working knowledge: how organizations manage what they know*. Harvard Business School Press (paperback edition).
- Davenport, Th. H., Prusak, L., and Strong, A., 2008. *Putting Ideas to Work*, MIT Sloan Management Review;
- Demarest, M. (1997). 'Knowledge management: an introduction', (Source: <http://www.noumenal.com/marc/km1.pdf>, accessed on: 15.02.2013.).
- European Committee for Standardization, 2004. "European Guide to Good Practice in Knowledge Management, Part 1: Knowledge Management Framework", p. 6.
- Firestone, J., 2008. *On Doing Knowledge Management*, Knowledge Management Research & Practice, p. 17.
- Frappaolo, C. (Ed.), 2006. *Knowledge Management*. West Sussex, England: Capstone Publishing Ltd.
- Gold, A. H., Malhotra, A. and Segras, A. H., 2001. 'Knowledge Management: An Organizational Capabilities Perspective', *Journal of Management Information Systems*, 18 (1), pp. 185-214.
- Grant, A. M., 2012. Coaching: ROI is a poor measure of coaching success: towards a more holistic approach using a well-being and engagement framework, *An International Journal of Theory, Research and Practice*.
- Grant, R., 2000. 'Shifts in the world economy: the drivers of knowledge management', in C. Despres and D. Chauvel (Eds.) *Knowledge Horizons*, Boston, MA: Butterworth-Heinmann.
- Hanley, S., Dawson, C., 2000. A framework for delivering value with knowledge management: The AMS knowledge centers. *Information Strategy*, 16(4), pp. 27-36.
- Holsapple, C. W., Joshi, K. D., 2004. A Formal Knowledge Management Ontology: Conduct, Activities, Resources, and Influences; *Journal of the American Society for Information Science and Technology*, 55(7), pp. 593-612.
- Hoy, W. K., Miskel, C. G., 2001. *Educational Administration: Theory, Research, and Practice*, sixth ed., McGraw-Hill, Boston.
- Jennex, M. E., 2007. *Knowledge Management in Modern Organizations*, Idea Group Inc (IGI), p. 4.
- Jennex, M.E., Chantarasombat, Ch., Srisa-ard, B., Kuofie, M.H.S., 2010. USA, "Using Knowledge Management to Create Self-Reliant Communities in Thailand"; *International Journal of Knowledge Management*, 6(1), 62-78.

- Jennex, M. E., Olfman, L., 2004. Proceedings of the 37th Hawaii International Conference on System Sciences "Assessing Knowledge Management Success/Effectiveness Models".
- Jennex, M. E., Olfman, L., 2006. "A Model of Knowledge Management Success", in: *International Journal of Knowledge Management*, 2(3), pp. 51-68.
- Jennex, M. E., Zakharova, I., 2008. *Knowledge Management: Knowledge Management Success/Effectiveness Models*, Chandos Publishing, Oxford;
- Jimenez-Jimenez, J., Sanz-Valle, R., 2005. "Innovation and Human Resource Management Fit: An Empirical Study," *International Journal of Manpower*, 26 (4), pp. 364-381.
- Jones, D., 2003. Knowledge management and technical communication: a convergence of ideas and skills, available at: <https://faculty.washington.edu/markh/tc400>.
- Khalifa, M., Liu, V., 2003. "Determinants of successful knowledge management programs", *Electronic Journal of Knowledge Management*, 1(2), pp. 103-112.
- Kim, Jong-Ae, 2006. *Measuring the Impact of Knowledge Management*, IFLA Journal, Sage Publications, 32, pp. 362-367.
- Kin Hang Chan, Samuel Kai Wah Chu, Wendy W. Y. Wu, 2012. Exploring the Correlation Between Knowledge Management Maturity and Intellectual Capital Efficiency in Mainland Chinese Listed Companies; *Kin Journal of Information & Knowledge Management (JIKM)*; vol. 11, issue 03, pp. 1250017-1-1250017-11.
- Laurie, J., 1997. Harnessing the power of intellectual capital, *Training and Development* 27 (4), pp. 66-77.
- Liao, S. H., Wu, C. C., Hu, D. C., Tsuei, G. A., 2009. Knowledge acquisition, absorptive capacity, and innovation capability: An empirical study. *World Academy of Science, Engineering and Technology*, 53, pp. 160-167.
- Liebowitz, J., 1999. *Knowledge management handbook*. Boca Raton, FL: CRC Press.
- Lin, H. F., 2007. "A stage model of knowledge management: an empirical investigation of process and effectiveness", *Journal of Information Science*, 33(6), pp. 643-659.
- Ling, T. C., Nasuridin, A. M., 2010. "The influence of knowledge management effectiveness on administrative innovation among malaysian manufacturing firms" *Asian Academy of Management Journal*, Vol. 15, No. 1, pp. 63-77.
- Ling, T. C., Nasuridin, A. M., 2011. "Human Resource Management Practices and Organizational Innovation: Assessing the Mediating Role of Knowledge Management Effectiveness" *Electronic Journal of Knowledge Management Volume 9, Issue 2*.
- Malhotra, Y., 2005. Interview by Alistair Craven. <http://www.brint.org/managementfirst.html>, web page viewed 15.02.2013. and <http://first.emeraldinsight.com/interviews/pdf/malhotra.pdf>, web page viewed 15.02.2013.
- Malhotra, Y., 2008. Is Knowledge the Ultimate Competitive Advantage? *Business Management ASIA*, Q3/4, pp. 66-69.
- Matthews, P., 1997. "What Lies Beyond Knowledge Management: Wisdom Creation and Versatility", *Journal of Knowledge Management*, Vol. 1, Iss: 3, pp. 207-214.
- Mcdermott, R., 1999. "Why Information Technology Inspired But Cannot Deliver Knowledge Management", *California Management Review*, Vol. 41, No. 4, p. 105.
- McInerney, C. M., Koenig, M. E. D., 2011. *Knowledge Management (KM) processes in Organizations: Theoretical Foundations and Practice*, Morgan and Claypool.

- Mentzas, G., Apostolou, D., Abecker, A., Young, R., 2003. Knowledge Asset Management: Beyond the Process-centred and Product-centred Approaches. *Journal of Intellectual Capital*, 4(2).
- Morrison, J., Weiser, M., 1996. "A Research Framework for Empirical Studies in Organizational Memory" Proceedings of the Twenty-Ninth Annual Hawaii International Conference on System Sciences, IEEE Computer Society Press.
- Nonaka, I., 1994. A Dynamic Theory of Organizational Knowledge Creation. *Organization Science*, Vol. 5, No. 1, pp.14-37.
- O'Dell, C. Grayson, C., Jackson, G. C., 1998. *If only we knew what we knew: the transfer of internal knowledge and best practice*, New York, The Free Press.
- Pinho, J. C., 2007. TQM and performance in small medium enterprises: The mediating effect of customer orientation and innovation. *International Journal of Quality and Reliability Management*, 25(3), pp. 256-275.
- Ralph, L., 2003. "Knowledge Management and Training: Contradictory or Complementary?" *Training Journal*, June, pp. 10-14.
- Rampersad, H., 2002. "Increasing Organizational Learning Ability Based On A Knowledge Management Quick Scan", *Journal of Knowledge Management Practice*, Vol. 3, available at <http://www.tlinc.com/jkmpv3.htm> (accessed February, 2013).
- Rampersad, H., 2002. "Total Performance Scorecard, A Search for Self-Knowledge and Competence Development of Learning Organizations" published by Scriptum Management.
- Salisbury, M. W., 2003. Putting theory into practice to build knowledge management systems. *Journal of Knowledge Management*, 7(2), pp. 128-141.
- Shapira, P., Youtie, J., Yogeessvaran, K., Jaafar, Z., 2005. Knowledge economy measurement: Methods, results and insights from the Malaysian knowledge content study. Paper presented at the the Triple Helix 5 Conference on New Indicators for the Knowledge Economy, Turin.
- Shapiro, C., Varian H. R., 1999. *Information rules: a strategic guide to the network economy*. Harvard Business School Press, Boston (MA).
- Sims, R., 2008. Assembly of Knowledge Management definitions. Online. Available at: <http://wiki.guruj.net/Holistic!KM+Definition+Evaluation>; web page accessed 15.02.2013.
- Soo, Ch., Devinney, T., Midgley, D., Deering, A., 2002. "Knowledge Management: Philosophy, Processes and Pitfalls", *California Management Review*, Vol. 44, No. 4.
- Sternberg, R. J., 2003. Rediscovering wisdom. *Psychology Teacher Network*, 13(1), pp. 1-2.
- Sveiby, K.E., 2001. What is Knowledge Management? Online. Available at: <http://www.sveiby.com/articles/KnowledgeManagement.html>; web page accessed 15.02.2013.
- Tsoukas, H., Vladimirov, E., 2001. *Journal of Management Studies*, Volume 38, Issue 7, pp. 973-993.
- Von Krogh, G., 1998. Care in knowledge creation. *California Management Review*, 40(3), pp. 133-153.
- Von Krogh, G., Nonaka, I. and Aben, M., 2001. Making the most of your company's knowledge: a strategic framework. *Long Range Planning* 34(1), pp. 421-439.
- Wenger, E., 2004. "Knowledge Management as a Doughnut: Shaping Your Knowledge Strategy Through Communities of Practice", *Ivey Business Journal*.

- Wunram, M., 2000. Concepts of the CORMA knowledge management model, available at: www.corma.net.
- Zheng, W., 2005. The impact of organisational culture, structure, and strategy on knowledge management effectiveness and organisational effectiveness. Published PhD. diss., University of Minnesota, USA.
- Zins, C., 2007. Conceptual Approaches for Defining Data, Information, and Knowledge. Knowledge Mapping Research, 26 Hahaganah Street, Jerusalem 97852, Israel. 2007 Wiley Periodicals, Inc. Published online 22 January 2007 in Wiley InterScience (www.interscience.wiley.com).

DIFFUSION OF INNOVATIONS AND ITS FORECAST FOR E-SIGNATURE IN LATVIA

JURIS BALDUNČIKS

Abstract

In the modern-day world, new technologies, products and services emerge almost every day. Some of them are more successful than others. There are thousands of reasons, including quality, price and, notably, innovative approaches, due to which a product may become successful, while others fail. It is considered that certain things become great innovations mainly due to the way they are communicated to their consumers and the way the users adopt them. The theory behind this is called diffusion of innovations and allows one to make a prediction as to how people are going to adopt new products and services. This research looks at a few different theories behind diffusion of innovations, combines them and shows how its principles are successfully applied for a practical prediction of diffusion for a new service in Latvia – e-signature.

Keywords: Latvia, Diffusion of innovations, Bass diffusion model, information society, diffusion of e-signature

JEL Code: C32, M31

INTRODUCTION

The importance of this research is significant from two major perspectives – those of business and academia.

With the emergence of new economics and increasing competition between enterprises, it is very clear that innovation is already playing, and will assume an even bigger role in the future enabling companies to achieve success in the marketplace. Companies are investing large amounts into their research and development efforts, as well as looking for new ways to encourage and motivate their employees or other stakeholders to become more innovative. There are many theories such as stage gate approach, pipeline management and others that are effective tools for the project management behind new ideas and products; however, there are not that many which look deeper into what happens after the product rolls out of the business development or research department.

There is also a gap from the academic perspective. Because of the peculiar nature of new products and, more often than not, due to lack of supporting data there are few theories and methods that look at the possibilities of forecasting the curve of innovation as it penetrates the market.

Of course, the theory behind diffusion of innovations is no magical crystal ball that allows seeing into the future of the adoption of a specific product, but it

is an effective, easy to use and practical tool to look at the potential market and the way it changes over the process of a product adoption. The main goal of this research is to provide practical evidence for the use of these tools in diffusion forecasting as regards a new service in Latvia, e-signature, and by leveraging possibilities of this theory, also to put forward suggestions concerning a better product positioning over its lifecycle.

THEORETICAL FRAMEWORK

Diffusion of innovations is a theory behind the way how, why and at what rate new products, services, technologies and even ideas spread in the society or, more specifically, market. Diffusion is characterised by the adoption speed and amount (Rogers et al., 1962). The pioneer behind the theory, Everett Rogers, lists four main elements that need to be examined:

1. **Innovation**
2. **Social System**
3. **Time**
4. **Communication channels**

To better understand the empirical analysis of this research it is important to take an in-depth look at these four elements by starting with **innovation** proper. Rogers defines several intrinsic characteristics of innovations that influence an individual's decision to adopt or reject an innovation. Those features have been summarised in Table 1.

Table 1 **Most significant characteristics of innovation in the process of diffusion**

RELATIVE ADVANTAGE	How much the idea is better than the one of a previous generation it is a substitute for.
COMPATIBILITY	The level of possibility for incorporating the innovation in a person's life (from the standpoint of social norms and technologies).
COMPLEXITY OR SIMPLICITY	How much is the innovation perceived as easy to use. More complex innovations are less likely to be adopted.
TRIALABILITY	The possibility of trying out or experimenting with the innovation before fully adopting it.
OBSERVABILITY	The ways to see the innovation in action on others. The more innovation has a possibility of being communicated to other peers, the more chance it is going to be adopted.

Source: author's construction based on Rogers (1962) diffusion of innovations theory

Individuals within a **social system** can be characterised from a perspective when they adopt a specific innovation over innovations lifecycle. Rogers suggests a total of five categories of adopters in the social system in order to standardise the usage of adopter categories in diffusion research. The diffusion over a longer period of time usually takes an S shaped curve and is divided in five user categories. The properties of those adopters are summarised in Table 2.

Table 2 Adopter categories by Everett Rogers and their characteristics

INNOVATORS	The process of innovation adoption starts with a small number of people who do not create boundaries for themselves and are considered as dreamers. These first 2.5% are Innovators, who are bold, educated and fearless in terms of adopting or trying new things. They appreciate the advantages of technological development and they are inspired by the idea that they can be change makers in their social group. They are willing to put up with uncertainties and problems that might arise in the product's introduction period.
EARLY ADOPTERS	Next 13.5% are Early Adopters, They usually are leaders of their social groups, they are well educated and looking for chances to adopt new technology to have an advantage over others, who have not adopted it. They are tempted by bold or risky purchases or projects. These adopters don't usually pay large attention to the price if the technology gives them privileges over others. They need more individual approach, fast solutions and very good support from the product creators.
EARLY MAJORITY	Next 34% of adopters are called Early Majority. They are more cautious and are characterised by many non-formal social contacts. These people are motivated more by making an evolutionary rather than revolutionary jump in adopting the technology. These adopters search for products that are considered as "industry standard" or "normal product". They search for simple, proven and better ways to do things they are already doing now, and not spend a lot of time learning the new product or technology. Some distinctive labels that characterise this category are "plug-and-play", "no sweat" "user-friendly" or "value for money".
LATE MAJORITY	Next 34% are Late Majority. They are quite sceptical, traditional thinkers and many times in a lower economic or social class. Price is what really matters for them and they expect ideally developed products or solutions. They are interested in the technology adoption only for the sake of staying in the same level with others of the social system. They are very trustworthy for their opinion leaders who help them understand the need for the innovation.
LAGGARDS	Last 16% are Laggards. Laggards are highly sceptical and want to stay in the "status quo". They do not believe that technology improves productivity and sometimes they even become proactive against technology progress. For them to adopt the technology, it is important to see that other laggards have adopted the product and basically it is not considered as innovation anymore.

Source: author's construction based on Rogers (1962) diffusion of innovations theory

Many of new innovations get stuck on the border between early adopters and early majority, and some researchers believe that a gap can be observed at this point of diffusion. This gap can be characterised as notable differences in the adopter categories after early adopters (Moore, 1991). The author of the research also suggests that all the groups following early adopters are strongly influenced by the adoption among the groups preceding them (Innovators, Early Adopters). It is important for them to see whether the product has reached a mass critical from their standpoint, but the problem arises because Innovators and Early Adopters want to be ahead of the regular consumer. In that way they are changing innovations they use quite often – not allowing for the technology to

reach the mass necessary for the Early Majority to kick in. Many innovations have failed at this point in their lifecycle because of these and other problems connected with the difference in perception.

To have an in-depth look into the remaining two elements of diffusion (**Time** and **Communication Channels**) and examine social system more in detail it is necessary to outline at the main mathematical tool that is going to be used in the empirical part of this research. Under the influence of theoretical research by Everett Rogers, a marketing professor Frank Bass published his paper "A new product growth model for consumer durables", where he explained many of Rogers's theories in a more mathematical manner.

The main principle of Bass's model reads as follows: the portion of the potential market that adopts innovation at a specific time (t) given that they have not yet adopted it already, is equal to a linear function of previous adopters (Bass, 1969). Two most important variables in the model that are directly connected with the Rogers's **communication channel** aspect are parameters p (innovation coefficient) and q (imitation coefficient) that show the effects advertising and word of mouth have on the diffusion curve. Innovation coefficient p is called so because its endowment to new adoptions does not depend on previous adoptions. Since these adoptions are caused by some influence outside the social system, for instance advertising, the parameter is also called the parameter of external influence. The effect of the coefficient of imitation – q is proportional to cumulative adoptions before. In other words, the more people are talking about a product, the more other people in the social system will adopt it. This parameter is also referred to as the parameter of internal influence. The values of those parameters basically determine the way of the diffusion (Mahajan, Muller, and Bass 1995). Many times the values of p and q for a specific forecast are used from products, services or technologies that are similar to the one whose diffusion needs to be forecasted (Van den Bulte, 2002). Till today, much research has been carried out and many p and q values for specific products and product groups have already been found. It is important to look at the split value of q/p when analysing the diffusion. If the value of q/p is bigger in comparison to other comparable products, it means that the forces of imitation or word of mouth are playing a much bigger role in the process of adoption. If the q/p is small or even zero, it shows that the innovation forces and advertising are playing a larger role in the process of adoption. For instance, a microwave oven has $q/p = 178.5$ while for a PC, $q/p = 2.322$. Just like Rogers's adoption curve, also the cumulative adoption in the model happens in an s-shaped curve, but the non-cumulative adoption takes a bell-shaped curve. The preferred Bass Model equation for use in curve fitting and forecasting, expressed as a cumulative function $F(t)$ is:

$$F(t) = \frac{1 - e^{-(p+q)t}}{1 + \left(\frac{p}{q}\right)e^{-(p+q)t}} \quad (1)$$

But a non-cumulative function $f(t)$ that shows the specific growth of adaptors in the period t is:

$$f(t) = \frac{p(p+q)^2 e^{-(p+q)t}}{(p+q e^{-(p+q)t})^2} \quad (2)$$

The Bass model over the time has gotten many additions. One of these additions allows to mathematically expressing the borders between previously mentioned adopter categories (Wong, Yap, Turner, and Rexha 2011). By making a first derivative from the non-cumulative function and equating it to zero $f(t)'=0$. It is possible to find the peak of the adoption curve T^* and also the border between early and late majority.

$$T^* = -\frac{1}{(p+q)} \ln \left[\frac{p}{q} \right] \quad (3)$$

By making a second derivative from the non-cumulative function and equating it to zero $f(t)''=0$. It is possible to find the other two borders that separate early adopters and early majority (T_1) as well as late majority and laggards (T_2).

$$T_1 = -\frac{1}{(p+q)} \ln \left[\left(2 + \sqrt{3} \frac{p}{q} \right) \right] \quad (4)$$

$$T_2 = -\frac{1}{(p+q)} \ln \left[\frac{1}{2+\sqrt{3}} \frac{p}{q} \right] \quad (5)$$

EMPIRICAL ANALYSIS

Virtual exchange of ideas, e-commerce, social networking and many other activities has become an integral part of our lives. All of the platforms allowing one to use these services and the internet itself have become products, and just like all products they follow a pattern of diffusion into the society. They start as an innovation with few users and then, by leveraging different communication channels, spread in the social system, gaining a critical mass and, with time, reaching the peak of the increase in the number of adopters. One of such type of a new service in Latvia is e-signature. Latvia's State Radio and Television Centre, which is the authority responsible for the introduction of the e-signature in Latvia defines e-signature as an electronic form of a regular signature that can be used in communications with companies, individuals, the government and local authorities. A document signed electronically has the same legal value as documents in a paper format. This research proposes to use the diffusion of innovations theory and the Bass model to forecast the diffusion of e-signature in Latvia. As mentioned above, the best way to use the model is by finding a benchmark or analogue for the product on which the forecast is going to be made. Online banking was selected as the best benchmark for e-signature due to various reasons:

1. Online banking is a mature product in Latvia, which has already reached its peak in terms of the adoption growth.
2. To register and get authorised for an e-signature one must have an online bank account in Latvia.

3. Both of these services are being used for business and business-like activities. They both can be used as an authorisation of a person and are an integral parts of the e-commerce environment in Latvia.
4. Both of these services are similar in terms of the importance of the connectivity for them. The necessity for both of these products is increasing together with the connection points in these systems. As more and more friends, relatives, business partners and other business entities adopt the service, the more value in terms of adoption it has.

To obtain the data about the online banking adoption, a survey was created (2012) with questions regarding the year when a person started to use online banking. The survey also included other questions of demographical nature and a question connected with respondents' overall attitude towards new products and services. 600 questionnaires were sent out in online forums and spread among the clients of an educational/training company. 276 correctly filled out forms were collected.

From 276 respondents, 245 or 89.68% respondents answered "yes" to the question whether they are currently using online banking services. Only 28 respondents or 10.14% still had not adopted online banking at the time of the survey. For further calculations with the help of the Bass model, this part of respondents was excluded, but will be used later for deeper analysis during the second part of empirical research. People who have adopted the online banking service were also asked which year they started to use online banking. From the answers of this question, a distribution was elicited that has been presented in Table 3.

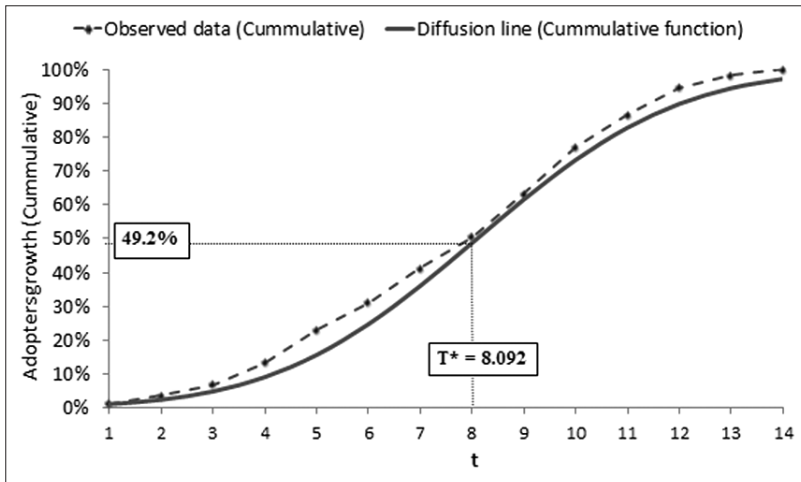
Table 3 Respondents' breakdown by year when they adopted online banking

Year (t) #	Astro-nomical year (t)	Respondents who adopt online banking (t)	% from all respondents	Cumulative percentage from all %	% from those who adopted online banking	Cumulative % from those who adopted
1	1999	3	1.09%	1.09%	1.21%	1.21%
2	2000	6	2.17%	3.26%	2.42%	3.63%
3	2001	8	2.90%	6.16%	3.23%	6.85%
4	2002	16	5.80%	11.96%	6.45%	13.31%
5	2003	24	8.70%	20.65%	9.68%	22.98%
6	2004	20	7.25%	27.90%	8.06%	31.05%
7	2005	25	9.06%	36.96%	10.08%	41.13%
8	2006	23	8.33%	45.29%	9.27%	50.40%
9	2007	32	11.59%	56.88%	12.90%	63.31%
10	2008	34	12.32%	69.20%	13.71%	77.02%
11	2009	24	8.70%	77.90%	9.68%	86.69%
12	2010	20	7.25%	85.14%	8.06%	94.76%
13	2011	9	3.26%	88.41%	3.63%	98.39%
14	2012	4	1.45%	89.86%	1.61%	100.00%

Source: author's calculations based on survey (2012)

This data will serve as source material in finding the Bass model parameters and drawing the diffusion line. The data also prove and clearly show another assumption the author made previously that online banking is already a mature product and has peaked on $t = 10$ (year 2008). After this year, the user adoption is only declining.

By using the data from the table in MS excel template for the Bass model the peak period T^* and the values of cumulative and non-cumulative function were found. The diffusion line peaks when $T^* = 8.092$ values of the functions respectively are $f(T^*) = 13\%$, $F(T^*) = 49.2\%$ (This can be observed in Figure 1).



Source: author's construction based on Bass model calculations

Figure 1 Survey results of online banking adoption and cumulative diffusion curve

Through these calculations it is possible to find the specific Bass model parameters q and p for the product. Firstly, it is necessary to modify $f(t)$ and $F(t)$ by putting T^* inside of them so that $t = T^*$:

$$f(T^*) = \frac{(p+q)^2}{4q} \quad (6)$$

$$F(T^*) = \frac{1}{2} - \frac{p}{2q} \quad (7)$$

To find the Bass model parameters, the previously found values of those functions $f(T^*) = 13\% = 0.130$ and $F(T^*) = 49.2\% = 0.492$ will be used in formulas (6) and (7).

$F(T^*) = 0.492$ calculations:

$$0.492 = \frac{1}{2} - \frac{p}{2q} \quad (8)$$

By Simplifying (8):

$$p = 0.016q \quad (9)$$

$$f(T^*) = 0.130$$

$f(T^*) = 0.130$ Calculations:

$$0.130 = \frac{(p+q)^2}{4q} \tag{10}$$

By putting (9) inside of (10) get:

$$q = 0.504 \tag{11}$$

And by putting (11) back into (9):

$$p = 0.008 \tag{12}$$

Now when the p and q , values have been found, it is possible to calculate T_1 and T_2 , and also make sure about the accurateness of T^* .

The boundary between early adopters and early majority is shown in formula (13).

$$T_1 = -\frac{1}{(0.008+0.504)} \ln \left[\left(2 + \sqrt{3} \frac{0.008}{0.504} \right) \right] = 5.520 \tag{13}$$

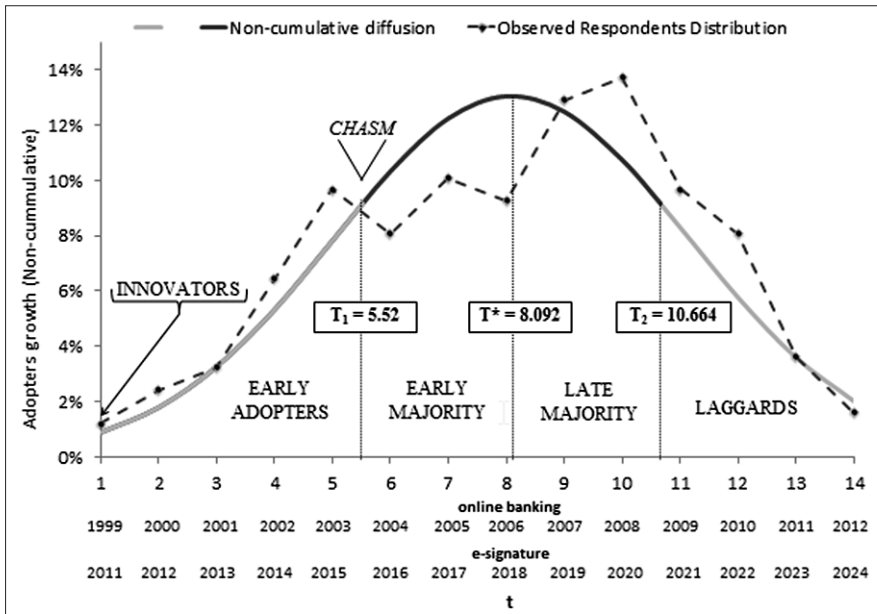
The border between late majority and laggards is shown in formula (14).

$$T_2 = -\frac{1}{(0.008+0.504)} \ln \left[\frac{1}{2+\sqrt{3}} \frac{0.008}{0.504} \right] = 10.664 \tag{14}$$

For verification purposes the peak values is calculated in (15).

$$T^* = -\frac{1}{(0.008+0.504)} \ln \left[\frac{0.008}{0.504} \right] = 8.092 \tag{15}$$

All of the previously made calculations except the cumulative curve have been displayed in a graphical form in Figure 2.



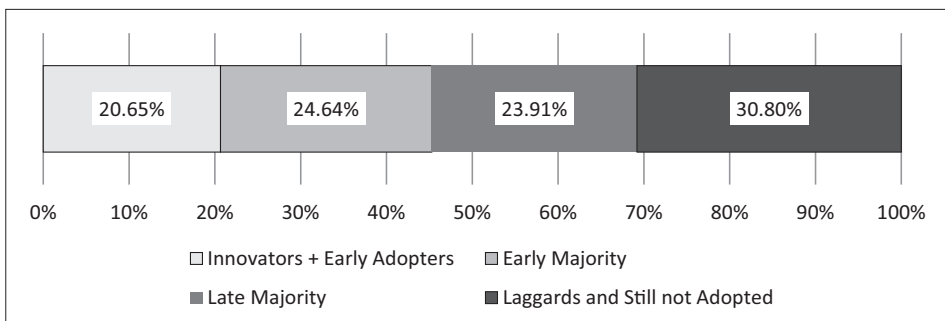
Source: author's construction on Bass model calculations

Figure 2 Non-cumulative diffusion and adopters split within the distribution

Figure 2 shows graphically the t values and corresponding border values. As was already noted, the diffusion peaks when $t = 8.092$. If one applies this to online banking, then the diffusion curve peaked at the beginning of 2006, early majority started around the middle of 2003, while laggards joined in the second part of 2008. The new e-signature was introduced at the beginning of 2011, so accordingly the diffusion peak for it should happen at the beginning of 2018, while the values of other two boundaries are calculated at in the middle of 2015 and on the 3 quarter of 2020.

When the Bass model parameters have been found one can further analyse the q/p proportion ($0.504/0.008 = 63$). Frank Bass in his research found the value of this proportion to range between 9 till 85.7, but it is noted that nowadays products can have this value across a wider range or even have the value of zero. A higher value of this proportion shows that the adoption for this product in the social system is happening more due to the imitation and word of mouth effects (Wong, Yap, Turner, and Rexha 2011). The value for online banking is **63**. In comparison with other studies, this ratio is relatively quite high, which explains why for similar products (just like e-signature) the adoption is happening more due to the imitation force. For adoption of such service in the society, interpersonal communication and the adoption and use of the product by other people is playing much larger role than the media, advertising or marketing expenditure for the push of the product. This also proves the previously mentioned assumption that interpersonal communication has a large role to play in adopting products like online banking and e-signature.

It is clearly visible in Figure 2 that all respondents fall into five Rogers's categories where the corresponding years comply with Innovators $t = 1$. Early Adopters $t = 2, 3, 4, 5$. Early Majority $t = 6, 7, 8$. Late Majority $t = 9, 10$. Laggards $t = 11, 12, 13, 14$. For further analysis and calculations, innovators are merged with early adopters and the respondents who did not use online banking at the time of the survey are re-included to the study and linked together with laggards. The distribution among this new classification is shown in Figure 3.



Source: author's construction based survey (2012) results

Figure 3 Respondent breakdown by adopter categories

In their research, Everett Rogers and others already set out main characteristics of adopters in these groups. This was analysed in more detail in the theoretical framework section. For this specific research it is important to look deeper into exactly what kind of customers there are in each group to better position the product for them. For further detail these newly established groups were analysed in comparison with demographical and other characteristics of the respondents that were established in the survey. The significance of relationships is established by using Chi-Square statistic (χ^2) for each of these variables.

Table 4 Variables and their χ^2 value

Variable	χ^2 value
Gender	.471
Age	36.357**
Occupation	20.113*
Education Level	17.595*
Region (Place of residence)	31.275**
Income	20.385
**p-value smaller than 0.01	
*p-value smaller than 0.05	

Source: author's calculations based survey (2012) results

It is noticeable that age, the place where the respondent lives, occupation and education level has significant relationship to adopter categories (Table 4). To further analyse what kind of characteristics each of the groups has, a crosstab analysis was undertaken with the previously mentioned significant characteristics. An example is shown in Table 5. The marked intersections show characteristics that were observed more often than expected from the distribution of respondents the author had obtained. This means that there are large numbers of people with this characteristic feature in respect of the adoption category.

This table shows that the marked cells are moving diagonally downwards from left to right. This means that younger people are adopting this kind of technology earlier, but older people are more common at the later stages of adoption. This also confirms the theory which suggests that it is rather common to see a higher proportion of younger people at the earlier stages of adoption (Wong, Yap, Turner, and Rexha 2011). Similar analysis was also done for the other significant characteristics (Region, Occupation and Education). It was discovered that people from Riga, Vidzeme and Kurzeme (economically more developed parts of Latvia) are more common at the earlier stages of diffusion. Also people who have higher or secondary professional education are more innovative in terms of adopting the technology. Interestingly, people who studied or combined work

with studies, adopted online banking earlier than those who only worked or considered themselves as homemakers at that point.

Table 5 **Adopter categories and age groups**

		ADOPTER CATEGORY				Total	
		1. Innovators	2. Early Majority	3. Late Majority	4. Laggards & Not yet adopted		
AGE GROUP	16-29	Count	44	45	35	42	166
		Expected Count	34.3	40.9	39.7	51.1	166.0
	30-39	Count	10	11	8	11	40
		Expected Count	8.3	9.9	9.6	12.3	40.0
	40-49	Count	2	7	14	9	32
		Expected Count	6.6	7.9	7.7	9.9	32.0
	50-59	Count	0	4	8	15	27
		Expected Count	5.6	6.7	6.5	8.3	27.0
	60+	Count	1	1	1	8	11
		Expected Count	2.3	2.7	2.6	3.4	11.0
Total	Count	57	68	66	85	276	
	Expected Count	57.0	68.0	66.0	85.0	276.0	

Source: author's calculations based on survey (2012) results

People were also asked questions about the Rogers's innovation characteristics (listed in the theoretical framework section) most important for them. When analysing the answers in terms of the adopter categorization, it was noted that, for innovators and early majority, the most important feature motivating them to adopt the innovation was trialability, while both early and late majority groups showed strong inclination towards ease of use as the most important characteristic feature of the innovation. Laggards and those who did not adopt innovations also emphasized trialability as the feature they favoured most. This reveals an interesting phenomenon: both the most innovative and least innovative groups list the same characteristics. It is important to note that after the gap (after early adopters) the significant innovation characteristics change, which might be an important aspect when crossing the gap.

The questionnaire also included a semantic differential question that was introduced as a tool to find out the overall receptiveness of new technologies, products, services and ideas by people. The analysis of responses to this question proved that people who adopted the product being analysed, namely, online banking, had earlier also been more open towards innovations and their adoption, whereas the ones who fell into the category of laggards and did not adopt the service were more closed and negatively minded towards new things, ideas and the like. Theory states that if someone is an innovator or an early adopter for a specific product, this does not specifically mean that the person is in the same adopter category for all products. This conclusion only shows the way people act in different social systems and the necessity to make diffusion analysis research only for products that are similar.

CONCLUSIONS, PROPOSALS, RECOMENDATIONS

All results yielded by this research have allowed the author to find answers to some very important questions, which can help a manager, a marketing specialist, a product developer or anyone else interested in the diffusion forecast for a new product.

The calculated Bass innovation and imitation coefficients and their proportion $q/p = 0.504/0.008 = 63$ show that the decisions on adopting the analysed products are largely connected with imitation factors or the word of mouth influence. Only a small part of respondents (1.09%) adopted the technology in the first year, thus even further proving the higher importance of imitation.

The results demonstrate the different properties of adopters. In this study, the number of demographic characteristics was limited to six, but many more can be added to widen the research. A strong relationship was revealed between the characteristics of the adoption groups and customers (age, place of residence, education and occupation). No correlation was established with gender and income. This kind of research makes it possible to even more profoundly understand the potential clients and, underpinned by the characteristics outlined by Rogers, produce various profiles of consumers during the product cycle.

Further analysis of customers and their attitude towards new products in the adopter category of innovator creates a better understanding of customers along the life-cycle of the product. This gives a chance for product developers to change product positioning. For instance, according to respondents, at the beginning of diffusion, trialability is very important for them, while later it is ease of use that in turn is replaced by trialability at the final stages. This kind of information makes it possible to change the business model or other specific qualities of the product: trial periods or a freemium pricing model are offered at the beginning, to be later followed by higher investments into marketing, in particular, educating the customer, and finally, by returning to trialability improvement at the end. The products (online banking and e-signature) that were

analysed in this research are prime examples of this kind of product repositioning over time.

It is very obvious that more and more new product and service innovations will be made available to our society with tremendous speed, their user number quickly reaching its peak, and then beginning to decline. Knowledge of the new product life cycle and customer trends in various phases of the diffusion process can help create more effective marketing strategies and give good pointers for management to make better decisions. The theories and models used in this research provide a valuable tool for stakeholders to acquire new knowledge and, by applying this competence in decision making, reduce the risks of innovation failure.

BIBLIOGRAPHY

- Bass, F. M. 1969. A New Product Growth Model for Consumer Durables. *Management Science*, 15 (January), pp. 215-227.
- Bass's Basement Research Institute. 2010. *Mathematical Derivation of the Bass Model* [online]. Texas: Bass's Basement Research Institute. Available at: <http://bassbasement.org/BassModel/BassMath.aspx>. [Accessed 30.03.2014].
- Hofmann, V. 2011. Knowledge and Innovation Management. *Module Reader*, Hohenheim University, pp. 37-57.
- Kahn, K. B. 2006. *New Product Forecasting: An Applied Perspective*. Armonk, NY, USA: M.E. Sharpe, Inc., p. 91.
- Kong, L. 2006. *Diffusion of Innovations* [online]. Stanford: Stanford University. Available at: http://www.stanford.edu/class/symsys205/Kong_Diffusion.html. [Accessed 16.01.2012.].
- Latvijas Interneta Asociācija. 2011. *Latvijas internetbanku pētījums 2010*. Rīga: Latvijas Interneta Asociācija, p. 13.
- Leonardo Da Vinči programma. 2005. *Inovatīvas darbības rokasgrāmata, maziem un vidējiem uzņēmumiem*. Rīga: "Leonardo Da Vinči" programma, p. 12.
- Mahajan, V., Muller, E., and Bass, F. M. 1990. New Product Diffusion Models in Marketing: A Review and Directions for Research, *Journal of Marketing*, 54 (January), pp 1-26.
- Mahajan, V., Muller, E., and Bass, F. M. 1995. Diffusion of new products: empirical generalizations and managerial uses. *Marketing science*, Vol. 14, No 3.
- Michelfelder, R. A., Morrin, M. 2009. *Overview of New Product Diffusion Sales Forecasting Models* [Online]. New Jersey: AUS Consultants. Available at: <http://law.unh.edu/assets/images/uploads/pages/ipmanagement-new-product-diffusion-sales-forecasting-models.pdf>. [Accessed 30.03.2014.].
- Moore, G. 1991. *Crossing the Chasm*. Harper Business Essentials, p. 227.
- Parsons new school for design. 2005. *Diffusion of Innovations Theory* [online]. New York: Parsons new school for design. Available at: http://a.parsons.edu/~limam240/thesis/documents/Diffusion_of_Innovations.pdf. [Accessed 30.02.2012.].
- Robinson, L. 2009. A summary of Diffusion of Innovations [online]. Melbourne: *Enabling change*, Available at: http://www.enablingchange.com.au/Summary_Diffusion_Theory.pdf. [Accessed 30.03.2014.].
- Rogers, E. M. 1962. *Diffusion of Innovations*. New York: Free Press of Glencoe, p. 150

- Rogers, Everett M. 2003. *Diffusion of Innovations*, Fifth Edition. New York: Free Press, p. 551.
- University of Washington. 2008. *New product forecasting: Bass model* [online]. Washington: University of Washington, January. Available at: http://faculty.washington.edu/jdods/pdf/MktgTool_Bass.pdf. [Accessed 22.02.2012.].
- Van den Bulte, C. 2002. "Want to Know How Diffusion Speed Varies Across Countries and Products? Try Using a Bass Model," *PDMA Visions*, 26(4) n, pp. 12-15.
- Wong, D. H., Yap, K. B., Turner, B., Rexha, N. 2011. Predicting the Diffusion Pattern of Internet-Based Communication Applications Using Bass Model Parameter Estimates for Email. *Journal of Internet Business*, Issue 9, pp. 26-50.

RESOURCES OF HEALTH CARE FINANCING IN LATVIA: HISTORICAL REVIEW AND EVENTUAL CHANGES

DIĀNA ARĀJA
KĀRLIS KRŪZS

Abstract

The creation of health care as a system is globally associated with the introduction of the health insurance which means that the state to a bigger or smaller degree starts ruling the issues that are connected with the protection of the population health and partly assumes financial responsibility for the implementation of the process. The aim of this research is to perform the historical review of the financing resources of the health care in Latvia, to evaluate their development during the health care reform and forecast eventual changes. To achieve the aim of the research, the methods of the theoretical research are used alongside the methods of the empirical research. For data processing and analysis, the statistical analysis methods and methods of forecasting are used. The main results and conclusions of this research are dedicated to a considerable number of changes developed during the health care reform, particularly on issue of the health financing resources that bothered the development of reform. The authors of this article carried out an expert assessment in order to obtain additional information about the most optimal sources of healthcare financing. The authors' carried out an expert assessment that shows the expert opinions about using revenue from the specific taxes as a source of financing for the medicines' reimbursement scheme show that the noticeable predominance of the assessment is formed in the direction of the social tax (state mandatory social insurance payments) in comparison to the resident income tax. According to the experts' opinions, approx. 75% of the financing for the reimbursement scheme should be drawn from the state budget funds, 16% from private funding, and 9% from the funds of the municipal budget.

Keywords: health care financing, health care reform, medicines reimbursement system, Latvia

JEL code: H51

INTRODUCTION

In most countries health insurance was initially developed on a voluntary basis that later served as a basis for the introduction of mandatory insurance. The origins of health insurance in the territory of Latvia trace back to the 13th century when the guilds of craftsmen created terms that would help their

members in case of sickness. Guilds were very significant in ancient times of craftsmanship as they were created as closed corporations of producing craftsmen with the aim to defend their interests. In 1352 the Small Guild was founded in Riga that united all guilds of craftsmen, as well as the Big Guild that united all merchants (Treimanis, 1926). Such guilds existed not just in Riga, but also in other Latvian towns. The “health insurance” created by guilds was voluntary and was made with the aim to provide material assistance to the members of the guild during sickness, as well as provided assistance in treatment. As only masters were members of the craftsmen guilds united in the Small Guild, apprentices, following the example of their masters also united in “brotherhoods” – the associations of apprentices to provide assistance to their members in case of sickness. This kind of mutual aid existed till the beginning of the 20th century when along with the development of industry the guild system gradually disappeared. The brotherhoods of craftsmen apprentices were transformed into the apprentice sickness and funeral funds. These apprentice funds can be considered the first organisations of voluntary insurance of paid employees in Latvia. At the same time the funds of general aid uniting merchants, craftsmen, teachers, priests, writers, civil servants and representatives of other branches were created.

The next stage when voluntary health insurance flourished in Latvia was seen in the second half of the 19th century when various mutual aid insurance funds and societies were founded. These worker mutual aid societies are to be considered the source of sickness insurance funds as they were based on the principle to ensure their members’ living during their sickness. The above-mentioned societies functioned according to the mutual aid principle without direct participation of society or state. Outside the system there were workers with low wages who could not afford to make any savings and contributions to the mutual aid funds. In 1860s when the number of factories started to grow rapidly the first factory worker mutual aid funds were founded (Treimanis, 1926). They developed into the largest organisations of voluntary insurance and were later known as various Latvian aid societies.

As the beginning of mandatory health insurance one can consider the regulations on insuring workers for the case of accidents or sickness adopted in Tsarist Russia in 1903 and supplemented in 1912 by envisaging free-of-charge treatment and allowances in the case of sickness accounting for 50–67% of regular wages in the biggest industrial companies (Aizsilnieks, 1968). After the February revolution of 1917 the provisional government of Russia radically amended the regulations providing for a more democratic form that fully transferred the administration of the sickness insurance funds to workers. These regulations remained in force in Latvia after the declaration of its independence. The Constitutional Assembly redesigned the regulations by adjusting them to the Latvian situation and on 15 December 1920 passed the Law on Mandatory Insurance that became the basis of all the system of sickness insurance funds of Latvia. Later the regulatory documents providing for the functioning of

the sickness insurance funds were amended by expanding the range of the persons to be insured and by correcting the amount of contributions and their distribution (Aizsilnieks, 1968).

The system of sickness insurance funds in Latvia existed till December 1940 when with the decree of the Presidium of the Supreme Council of the Latvian Soviet Socialist Republic of 28 November 1940 *On State Social Insurance of Workers and Servants* it was ruled that sickness insurance funds must be liquidated by 1 January 1941. The property and valuables of the sickness insurance funds were passed over to trade unions; however ambulances, treatment practices and sanatoriums were transferred to the People's Commissariat of Health Protection. Workers were freed from the contributions of social insurance, however employers had to make contributions into the social insurance funds of trade unions accounting for 3.7 to 9.3% of the employee's wages (Aizsilnieks, 1968). Further on doctor assistance was provided to workers free of charge; however they had to pay full price for medicines.

The functioning of sickness insurance funds was restored in Latvia in 1993 within the reform of the health care system and the authors have carried out a comparative analysis of the principles of operation of the sickness funds during the first stage (1920–1940) and the second stage (1993–2004) of their operation in Latvia. By comparing these two systems, the authors come to a conclusion that they functioned according to different principles:

The sickness funds that functioned during the first stage had a wider range of goals of their operation;

- During the first stage the sickness funds were formed and managed by their creators – employees – as well as by the employers; during the second stage the sickness funds were run by state or municipal institutions;
- During the first stage the finances of the sickness funds were basically formed from payments by members of the sickness funds and employers, and they operated according to the principles of the Bismarck healthcare model; during the second stage the sickness funds distributed state budget funds according to the principles of the Beveridge healthcare model;
- During the first stage the insured mainly consisted of paid employees and their dependents (people with low income received state support); during the second stage the system included all residents of the country through the implementation of a state mandatory health insurance system; and
- During the first stage finances of the sickness funds were used to pay not only for medical aid but also to disburse monetary benefits which were separated from healthcare during the second stage and formed social insurance funds.

Dissatisfaction with the operation of the sickness funds was observable in the public and at government level after the reintroduction of the sickness funds in 1993; they were blamed for the failure to comply with the principles of operation

of sickness funds and inefficient management of funds. In the authors' opinion, the problem started from the fact that, in an attempt to resume the operation of sickness funds, the name was given to institutions the operation of which differed in a radical way from the operation of the sickness funds that functioned at the beginning of the 20th century. Thus the restored sickness funds did not correspond to the visions of their historical development and operation and caused a lack of understanding in the general public.

In Latvia, the health care system reform is still in progress having proceeded through many stages of the developmental process, however, not all the goals set have been achieved yet. The aim of this research is to perform the historical review of the financing resources of the health care in Latvia, to evaluate their development during the health care reform and forecast eventual changes. To achieve the aim of the research, the methods of the theoretical research (the analysis of the regulatory enactments, special literature analysis, and the analysis of electronic resources) are used alongside the methods of the empirical research (data collection methods: surveys, document analysis, and database statistical analysis). For data processing and analysis, the statistical analysis methods (comparison, grouping, calculation of average quantities) and methods of forecasting are used. The theme of this research touches upon the sphere which has not been sufficiently investigated in Latvia yet and presents specific evaluation of the health care reform and experts' assessment of the eventual financing sources of health care financing in Latvia.

RESEARCH RESULTS AND DISCUSSION

In the 1990s Latvia had to resolve the future development of its healthcare system and the possible models of financing of the healthcare system. Signs of the formation of a free market in the national economy of Latvia in the early 1990s revealed a necessity to change the attitude towards healthcare as well. Until then it was based on providing financing for centralised budget institutions according to their estimates, with stress on the provision of medical aid in hospitals, especially in view of the tendency for the doctors to receive the same amount of remuneration regardless of the quality and extent of their work and the tendency for the medical institutions to receive financing according to their size. Such a situation did not contribute to efficient use of funds and did not promote willingness on the doctors' part to improve their work quality and competitiveness.

Considering the fact that healthcare professionals were not change-oriented at that time, especially as regards changes related to entrepreneurship and management of financial affairs, the initiative to start a healthcare reform was undertaken by the Latvian State. 1992 is regarded as the year when the healthcare reform was started; the Latvian Health Strategy Centre, supervised by the Ministry of Welfare, developed a Concept for the improvement of the healthcare system.

Table 1 Summary of the principal policy-planning documents and legislative acts drafted in the course of the healthcare reform related to the sources of health financing in Latvia

Item No.	Policy-planning documents and legislative acts	Strategic directions
1	2	3
1.	Resolution No. 371 of 31 August 1992 by the Council of Ministers of Latvia “On development of the health defence concept”	The concept provided for a special structure acting as an intermediary between patients and the healthcare institutions which would make payments to health care institutions for the services provided, in accordance with the principle of <u>‘money follows the patient’</u> , and would serve to protect the interests of residents.
2.	Resolution No. 146 of 24 December 1992 by the Ministry of Welfare of Latvia “On development and operation of the Cash Office”	Based on this order, a <u>Cash Office</u> of the Ministry of Welfare (from 1996 to 1999 – State Sickness Fund; from 1999 to 2009 – State Agency of Mandatory Health Insurance; from 2009 to 2011 – Health Payment Centre) was established in 1993, with the principal purpose of its operation <u>to lead the healthcare financing reform in the country in a methodical and organisational way</u> . Municipal cash offices were formed in all districts of the country at the same time.
3.	Basic principles “On health care financing” prepared by the Ministry of Welfare and adopted by the Cabinet of Ministers on 1 November 1994	Equal access to healthcare services regardless of the social status and income of an individual was laid down as the main principle. According to the basic principles, it was planned to <u>introduce a health tax already in 1995</u> , payable in equal parts (three per cent of the taxable income of an employee) by the employee and the employer; it was also planned to ensure that voluntary health insurance would cover 20% of the total costs of healthcare.
4.	Concept “On State mandatory health insurance” prepared by the Ministry of Welfare and adopted by the Cabinet of Ministers on 28 May 1996	According to the concept, state mandatory health insurance was seen as <u>a component of the state social insurance system</u> , the purpose of the introduction of which is to enable residents to receive quality healthcare services so as to create preconditions for a gradual improvement of the health condition of the population and stabilisation of the demographic situation.
5.	Concept “On financing sources of health care” discussed by the Cabinet of Ministers on 3 September 2002	A State Budget Grant Model was accepted; it envisaged the healthcare budget as <u>part of the general state budget</u> . Despite the shortcomings of this model, it was resolved at the 22 July 2003 session of the Cabinet of Ministers to abolish any special-purpose budgets (including the special-purpose healthcare budget), preserving the status of a special-purpose budget only for the state social insurance budget.

Source: authors' collection bases on (Council of Ministers, 1992; Ministry of Welfare, 1992; Cabinet of Ministers, 1994; Cabinet of Ministers, 1996; Cabinet of Ministers, 2002)

Table 1 of this article contains a summary of the principal policy-planning documents drafted in the course of the healthcare reform later on and information about legislative acts related to the sources of health financing in Latvia.

In the course of implementation of the reform, funds allocated in the 1990s for the financing of healthcare measures were divided into two separate programmes: the state programme and the basic programme, and were directed towards service providers in several flows of financing. The programmes were financed from two sources: state funds and municipal funds. Although finance flows had been defined, the question of the sources of financing remained unanswered. This applied both to healthcare financing in general and to the financing for the medicinal products reimbursement scheme. The issue of organising a financing system for the reimbursement of medicinal products was the most problematic one, and the sources of such financing – state budget, municipal budget, and action grants from the state budget – changed every year.

Pursuant to the 1996 State mandatory health insurance concept, it was intended to conditionally divide the administration of the State mandatory health insurance system in two parts (Cabinet of Ministers, 1996):

- 1) Collection of health insurance payments and transfer thereof to the State Sickness Fund which would be implemented by the central institution of the State social insurance fund and its structural units – social insurance administrations of districts, and
- 2) Distribution of funds among regions, with follow-up transfers of funds to the service providers in accordance with signed agreements, which duty would be entrusted to the State Sickness Fund.

Centralisation of funds occurred as a result of introduction of the State mandatory health insurance system, and the basis for the State mandatory health insurance – part of the resident income tax and a grant from the state general budget – was defined. Thus the minimum norm of healthcare expenditure per resident was separated from the municipal budgets and centralisation of funds took place, the main task of which was to provide for a stable and equal amount of funding per resident throughout the territory of Latvia by guaranteeing a certain basic level of healthcare for all residents and introducing competition among service providers.

According to the 1996 Latvian healthcare development strategy, strategically the most important directions of the reform were as follows (Ministry of Welfare, 2001):

- Reorganisation of the health care system, based on a prepared and approved primary and secondary healthcare strategy;
- Optimisation of the structure of service providers, achieved as a result of the consolidation process and designed to improve service quality, will increase the cost efficiency and provide for a rational service accessibility;

- A reform of the healthcare financing system and promotion of the investment policy including developing a stable and foreseeable capital investment programme in the healthcare sector and providing for an adequate institutional capacity; and
- Improving the general health condition as a result of efficient health promotion activities among the population.

Considering the serious financial problems that were encountered in the course of implementation of the reform, it was resolved to attract borrowed capital and foreign assistance in order to implement the reform efficiently. A project was developed in 1997, and an agreement for the implementation of the project was signed with the World Bank on 25 November 1998. In 1999 the Healthcare reform project was included in the State Investment programme. In 2001 a State Healthcare Plan was developed as part of the Healthcare reform project, as a continuation of the course of the reform on the whole, including with respect to the finance flow.

In 2003 the draft concept on Mandatory health insurance, which was intended to involve the private health insurance companies in administration of the state budget health care resources, has been developed, but not accepted at the governmental level.

A working group was set up according to Resolution No. 418 of 7 October 2009 by the Prime Minister of Latvia (Prime Minister, 2009) to look into the possibilities of introducing a system in Latvia that would ensure the availability of certain state-funded healthcare services to those residents that have paid the resident income tax or from whom the resident income tax has been withheld; the system would also provide that residents at a working age which have not paid the resident income tax would have to pay the full price for any healthcare services received by them, preserving, however, the possibility for all Latvian residents to receive emergency medical service and services under individual essential state-funded programmes. However, the concept developed by the working group was not accepted in 2009, but became current in 2012 by the establishment of a new work group under the Ministry of Health. In the authors' of this article opinion this concept should be prepared in concern with the Government's Action Plan for the Implementation of the Declaration of the Intended Activities of the Cabinet of Ministers, particularly Activities 38, which intends to reduce the taxes on employees (indicatively by nine percentage points by three years period), while keeping the overall tax burden (Cabinet of Ministers, 2012).

The authors of this article carried out an expert assessment in order to obtain additional information about the most optimal resources of healthcare financing. A complex forecasting method has been used, incorporating the expert method and statistical methods. The modified Delphi method was chosen as an expert method. The questionnaire included 10 questions, and each of them offered preliminary information for performance of forecasting, as well as the opportunities to make additions and comments. In this article only one of

the questions is investigated. The assessment was carried out in July and August 2011, and 21 health care professionals, as well as the representatives of the patients' organisations were invited. Nine of the invited experts agreed to participate at this research: chief specialist in cardiology of the Ministry of Health (MoH), chief specialist of the MoH in surgery, chief specialist of the MoH in oncology, chief specialist of the MoH in paediatric, chief specialist of the MoH in neurology, chief specialist of the MoH in infectious diseases, which at the same time represented the health professionals' associations, as well as two senior officials of the MoH and one representative of the pharmaceutical association. A number of invited experts, including the lead representatives of the patients' organisation, refused participation at this research, which can be explained as the lack of competence. The experts' individual assessments have been collected through statistical techniques and used for development of conclusions and forecasting.

Experts were asked to provide their expert opinions about the optimal structure of the sources of financing for the medicines' reimbursement scheme, with the option of providing an assessment for attracting state budget, municipal budget and private financing. Experts' opinions about the optimal structure of the sources of financing for the reimbursement scheme are shown in Table 2.

Table 2 Experts' opinions about the optimal structure (represented shares) of the sources of financing for the medicines' reimbursement scheme

Item No.	Sources of financing of the medicines' reimbursement scheme		Experts' opinion (Average share, % (X) and Standard Deviation(S))	
			X	S
1	2		3	4
1.	State budget	State-budget grant	64.36	29.83
		Constant part of the social tax (state mandatory social insurance payments)	9.17	14.34
		Constant part of the resident income tax	1.13	2,10
2.	Municipal budget	State-budget grant	7.54	12.45
		Constant part of the resident income tax	1.50	3.51
3.	Private financing	Patient's co-payment	8.23	12.14
		Mandatory private insurance	1.50	2.27
		Voluntary private insurance	3.06	3.73
		Financial participation of pharmaceutical companies	2.88	5.19
		Donations	0.63	0.92
	Total		100	

Source: authors' calculations based on the carried out experts' assessment data

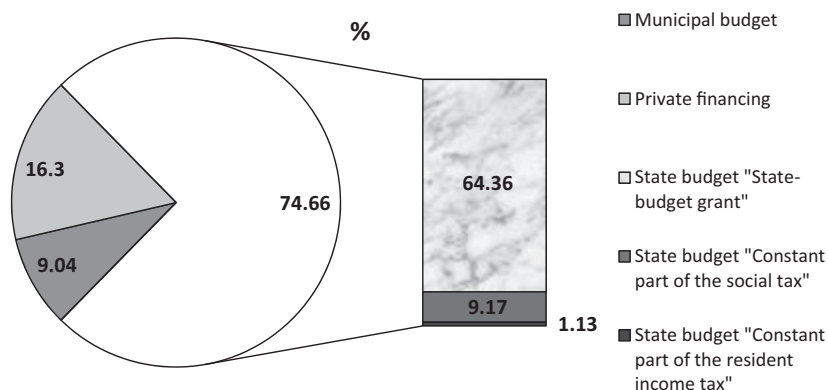
Currently the reimbursement scheme is financed from a state-budget grant, patient's co-payment, and by attracting funding from pharmaceutical companies. The extent of patient's co-payment depends on the extent of reimbursement applicable according to the diagnosis and on whether, in the case of List A, the patient uses reference medicinal products (medicinal products with the lowest price in a group of interchangeable medicinal products) or non-reference medicinal products (medicinal products which have cheaper analogues) – in this case the patient also covers the difference between the prices of non-reference and reference medicinal products.

The financial participation of pharmaceutical companies in the reimbursement scheme was introduced in 2011 by Regulation No. 1216 of 28 December 2010 by the Cabinet of Ministers (Cabinet of Ministers, 2010) which provide that in cases where the National Health Service finds, as a result of analysing the quarterly data, that the funding allotted for reimbursement purposes has been exceeded, it shall notify the pharmaceutical company which manufactures the medicinal products about the necessity to make a payment in relation to its market share under the reimbursement scheme so as to cover the foreseeable shortage of funds for reimbursement and shall determine the amount of the payment. Participation of pharmaceutical companies in the scheme also manifests itself in the case of List C since they have to provide patients with medicinal products for at least 10% of the amount payable from state funds. However, the question of the financial participation by medicinal product manufacturers in the reimbursement scheme is not so straightforward because such a participation in the scheme would not be necessary if manufacturers reduced the prices of their products.

Expert opinions about using revenue from the specific taxes as a source of financing for the reimbursement scheme show that the noticeable predominance of the assessment is formed in the direction of the social tax (state mandatory social insurance payments) in comparison to the resident income tax. In the author's opinion, such an assessment indirectly points towards experts' reflections on the interconnection between social insurance and healthcare. However, one must take into account the current critical situation in the social sphere, and using the revenue from the social tax to finance healthcare would result in yet another increase of the social tax rate.

The distribution of experts' opinions as to the three main sources of financing – the state budget, municipal budget, and private funding – is shown in Figure 1.

According to the experts' opinions, approx. 75% of the financing for the reimbursement scheme should be drawn from the state budget funds, 16% from private funding, and 9% from the funds of the municipal budget. It must be noted that the proposal by the experts to get municipalities involved in the provision of financial accessibility of medicinal products too is noticeable as currently only a few municipalities provide financial support to patients in connection with purchases of medications.



Source: authors' construction based on the carried out experts' assessment by the modified Delphi method (nine experts – the chief health professionals of Latvia, 2011)

Figure 1 **Experts opinions on optimal structure of the sources of financing for the medicines' reimbursement scheme in Latvia, as to the three main sources of financing – the state budget (state budget grant scheme); constant share of the social tax; constant share of the resident income tax), municipal budget, and private funding**

The introduction of a mandatory private insurance scheme was not estimated highly by the experts; a voluntary private insurance system was valued better. One must note, however, that although currently there are no fiscal or lawful obstacles for the use of voluntary private insurance to cover patient co-payments, insurance companies avoid offering their clients such services. In this context the authors propose additionally investigate the opportunities of the voluntary health insurance in European Union, which are described (Mossialos E., Thomson S., 2004) voluntary health insurance to whether it:

- *substitute* for cover that would otherwise be available from the state;
- provides *complementary* cover for services excluded or not fully covered by the state (including cover for co-payment imposed by the statutory health care system); or
- provides *supplementary* cover for faster access and increased consumer choice.

The experts rated the possibility of using donations to finance the reimbursement scheme as insignificant. However, in the author's opinion, donations may provide significant support for the reimbursement scheme if a foundation is established and clearly defined criteria are laid down with regard to the use of the foundation's means.

CONCLUSIONS, PROPOSALS, RECOMMENDATIONS

1. The origins of health insurance in the territory of Latvia trace back to the 13th century when the guilds of craftsmen created terms that would help their members in case of sickness. At the beginning of the 20th century the sickness funds in Latvia successfully operated in accordance with the classic Bismarck model principles, but after their reintroduction in 1993 dissatisfaction was observable, as the sickness funds were blamed for the failure to comply with the principles of operation of sickness funds and inefficient management of funds. The problem started from the fact that, in an attempt to reintroduce the sickness funds, their name was given to institutions which distributed state budget funds according to the principles of the Beveridge model and the operation of which differed in a radical way from the operation of the sickness funds. Thus the restored sickness funds did not correspond to the visions of their historical development and operation, and therefore they were reorganised into the State Compulsory Health Insurance Agency in 2004.
2. A considerable number of changes on issue of the health financing resource have been developed during the health care reform from 1992 in Latvia. Initially the health care programmes were financed from two sources: state funds and municipal funds. According to the principles adopted in 1994, it was planned to introduce a health tax already in 1995, payable in equal parts (three per cent of the taxable income of an employee) by the employee and the employer, but this tax has not been introduced. The basis for the State compulsory health insurance – part of the resident income tax and a grant from the state general budget – was defined in 1996. However the state budget grant model was accepted in 2003, which abolished the special-purpose healthcare budget and envisaged the healthcare budget as part of the general state budget.
3. Already in 1994 it was planned to ensure that voluntary health insurance would cover 20% of the total costs of healthcare, but this concept was not adopted until now. A work group established in 2009 has investigated the possibilities to introduce a system that would ensure the availability of certain state-funded healthcare services to those residents that have paid the resident income tax or from whom the resident income tax has been withheld, and this approach is under discussion in 2012 too. However this concept should be developed in concern with the Government's Action Plan, particularly Activities 38, which intends to reduce the taxes on employees (indicatively by nine percentage points by three years period), while keeping the overall tax burden.
4. The authors' carried out an expert assessment shows that the expert opinions about using revenue from the specific taxes as a source of financing for the medicines' reimbursement scheme show that the noticeable predominance of the assessment is formed in the direction of the social tax (State compulsory social insurance payments) in comparison to the resident income tax. Such an assessment indirectly points towards experts' reflections

on the interconnection between social insurance and healthcare. However, one must take into account the current critical situation in the social sphere, and using the revenue from the social tax to finance healthcare would result in yet another increase of the social tax rate. According to the experts' opinions, approximately 75% of the financing for the reimbursement scheme should be drawn from the state budget funds, 16% from private funding, and 9% from the funds of the municipal budget.

5. The introduction of a compulsory private insurance scheme was not estimated highly by the experts; a voluntary private insurance system was valued better. One must note, however, that although currently there are no fiscal or lawful obstacles for the use of voluntary private insurance to cover patient co-payments, insurance companies avoid offering their clients such services. The authors of this paper propose additionally investigate the opportunities of the voluntary health insurance as the substitute, complementary and supplementary tools to finance patients' health care in Latvia.

REFERENCES

- Aizsilnieks A. 1968. *Latvijas saimniecības vēsture, 1914.–1945.* –Stokholma: Daugava, – pp. 39-881
- Mossialos E., Thomson S. 2004, *Voluntary Health Insurance in the European Union*, European Observatory on Health Systems and Policies, World Health Organisation, pp. 51-66
- The Cabinet of Ministers of the Republic of Latvia, 1994. *Basic principles on health care financing*. [online] Politikas plānošanas dokumentu datu bāze. Available at: <<http://www.mk.gov.lv/>> [Accessed 28 May 2011].
- The Cabinet of Ministers of the Republic of Latvia, 1996. *Concept on State mandatory health insurance*. The unpublished materials of the Cabinet of Ministers.
- The Cabinet of Ministers of the Republic of Latvia, 2002. *Concept on financing sources of health care*. [online] Politikas plānošanas dokumentu datu bāze. Available at: <<http://www.mk.gov.lv/>> [Accessed 14 June 2011].
- The Cabinet of Ministers of the Republic of Latvia, 2010. *Regulation No. 1216 on amendments of the Regulation No 899 on the Procedure for Reimbursement of Expenses Related to Purchase of Medicines and Medical Devices Intended for Outpatient Treatment*. [online] Latvijas Vēstneša Tiesību aktu vortāls. Available at: <<http://www.likumi.lv/doc.php?id=223613>> [Accessed 20 October 2011].
- The Cabinet of Ministers of the Republic of Latvia, 2012. *The Government's Action Plan for the Implementation of the Declaration of the Intended Activities of the Cabinet of Ministers*. [online] Latvijas Republikas Ministru kabinets. Available at: <<http://www.mk.gov.lv/lv/mk/darbibu-reglamentejosie-dokumenti/ricibas-plans-dv/>> [Accessed 14 March 2012].
- The Council of Ministers of the Republic of Latvia, 1992. *Resolution No. 371 on development of the health defence concept*. [online] Normatīvo aktu informācijas sistēma. Available at: <<http://pro.nais.dati.lv/>> [Accessed 28 May 2011].
- The Ministry of Welfare of the Republic of Latvia, 1992. *Resolution No. 146 on development and operation of the Cash Office*. The unpublished materials of the Ministry of Welfare.

- The Ministry of Welfare of the Republic of Latvia, 2001. *Social Report 2001*. Latvijas Republikas Labklājības ministrija.; Rīga, LR LM, 2001., P. 115.
- The Prime Minister of the Republic of Latvia, 2009. *Resolution No. 418 on the work group to evaluate possibilities of implementation of a new health care financing system*. [online] Latvijas Vēstneša Tiesību aktu vortāls. Available at: <<http://www.likumi.lv/doc.php?id=198818>> [Accessed 14 September 2011].
- Treimanis J. 1926. *Slimo apdrošināšana Latvijā / Vēsturisks atskats 1235.–1917.* – Rīga: Latvijas Slimo Kasu Savienība, – pp. 55-56

THE AUTHORS*

Rasa Daugėlienė, Dr. ec. is an Associated Professor at the Kaunas University of Technology, Faculty of Social Sciences, Arts and Humanities, Institute of Europe. Her research is focused on European economic integration processes, European Economic International Relations, Functioning of European Internal Market. She is Vice Editor of Scientific Journal “European Integration Studies: Research and Topicalities”.

Aleksandrs Dahs, is a PhD candidate in the field of socio-economic demography at the University of Latvia. He has received his master’s degree in European studies from the University of Latvia in 2013 and a bachelor’s degree in management science in 2011. He currently holds positions of researcher and lecturer at the Faculty of Economics and Management of the University of Latvia in Riga, Latvia. His previous work experience includes a senior desk officer post at the Ministry of Interior of the Republic of Latvia, and well as senior management positions at private industrial enterprises. A. Dahs is a member of Latvian Geographical Society, Latvian Association of Econometrics and the European Association for Population Studies.

Inga Jēkabsons received a Bachelor’s degree and a Master’s degree in Management from the University of Latvia in 2011 and 2013 respectively. She is currently a PhD candidate with the University of Latvia. She is currently a Deputy Director for EU Affairs of Department of Higher Education, Science and Innovation of Ministry of Education and Science of Republic of Latvia. She has gained working experience in local and regional development while working as Project Manager with the State Regional Development Agency at Latvia-Lithuania Cross-border Cooperation Programme and with Salaspils Municipality and as an Assistant Researcher with the University of Latvia, as well as working with foreign experts, including representatives from the Council of Europe. She is the author of several publications on the research and promotion of the well-being system in Latvia and has participated in international scientific conferences, presenting the results of measuring the well-being in municipalities in Latvia.

Viesturs Brālis, has a Social Sciences Master’s Degree in Management Sciences (2002), University of Latvia. Completed Ph.D. Program in Management (2008), Faculty of Economics and Management, University of Latvia. He is working on his Ph.D. Thesis. More than 10 years worked as a lecturer, Faculty

* Due to very tight publication deadlines not all authors in this issue were able to supply the necessary information for this section.

of Economics and Management, University of Latvia. Has a more than 15 years' experience working as a consultant and business seminars lecturer about management and communication for many big Latvian companies, which helps him gain a deeper understanding of many organisational processes. Research interests include topics related to knowledge management, organisational culture, organisational behaviour and most recently organisational level software development. He is an author of approx.15 publications.

Elena Dubra, Dr. oec., professor, University of Latvia, Faculty of Business, Management and Economics, Department of Economics. Scientific research area – the complex approach of the EU socio-economic policy analysis and its implementation in the Latvian development strategy. The scientific research is based on the EU convergence and macroeconomic theories analysis and on the external and induced variables estimations: situations of the economic and welfare level and especially on the challenges for improvement of the socio-economic well-being of states and regions with purpose to avoid disparities in the European Union. A major focus is devoted to economic climate designation for the world and EU states, as well as its impact on Latvian economics and living conditions. Expert from Latvia for the IFO Leibniz Institute for Economic Research. Publications for the Quarterly “World Economic Climate” Issues, CESifo World Economic Survey (WES), Munich, Germany.

Diāna Arāja, graduated from the Latvian Medical Academy (Master's Degree in Pharmacy), the University of Latvia (Master's Degree in Economics and Management) and the University Pompeu Fabra (International Master's Degree in Health Economics and Pharmacoeconomics), as well as the Latvia University of Agriculture (professional development training with specialisation in organic agriculture). She has more than 15 years' experience in public administration and academia, specialising in pharmaceutical policy and legislation. She is the author of more than 30 scientific publications. Her scientific interests: health economics and pharmaco-economics, health systems research and health technology assessment.

Edgars Rožāns, holds a MBA degree from the University of Latvia in International Business, as well as a Bachelor degree in Business Administration from Rīga International School in Economics and Business Administration and University of Valencia. Currently he is working as a Director and CEO for Latvian manufacturing enterprise's branch in Lithuania. Previously he has worked for the Ministry of Health of the Republic of Latvia as a Senior Officer of European Union Affairs and International Co-operation, with the main duties of co-ordinating co-operation with national and international institutions and organisations, especially with the EU institutions and the World Health Organization and its WHO Regional Office for Europe. Similarly, prior to that, working as the Ministry of Economics of the Republic of Latvia Senior Officer of Foreign Trade Policy, mainly working with the World Trade Organization matters,

as well as previously to that working in trade as a Real Estate Trade Expert. His interests in the field of economics include national economic competitiveness, its measurement, socioeconomic impacts of it, and economic cycles. On the last of which currently a PhD thesis is being prepared.

Biruta Sloka, Dr. oec., professor at the University of Latvia. Has also worked at Aarhus University (Denmark), Dalhousie University (Canada), Oklahoma State University (USA), Agder University (Norway), etc. She has worked at the Ministry of Economics and the Ministry of Education and Science, and has been a coordinator of many international conferences and led several research projects. She is a member of the Association of Latvian Statisticians, Association of Professors of Latvian Higher Education Institutions, Association of Econometrists, and Association of Hydrogen.

Milda Damkuvienė, Dr. is an Assoc. professor at Šiauliai University in Lithuania, Faculty of Social Sciences, Humanities and Art, Department of Management. She is also the senior researcher at Šiauliai Research Institute. Her research is focused on client involvement into value creation processes, value co-creation, value perception, participative leadership. She is the author of several scientific studies, national and international research reports on client perceived participation value, school leadership.

Evandželina Petukienė, Dr. is an Assoc. professor at Šiauliai University in Lithuania, Faculty of Social Sciences, Humanities and Art, Department of Management. Her scientific fields of interest: Management of Marketing, Management of Client Participation in Services. She is the author of many articles, scientific study on client participation, marketing management.

Sigitas Balčiūnas, is a researcher at Šiauliai Research Institute and lecturer at Šiauliai University in Lithuania, Faculty of Social Sciences, Humanities and Art, Department of Public Administration. His field of interest: social science research methodology, quantitative research methods, measurement, measurement scales, and scale validation.

Journal of Economics and Management Research. Volume 4/5, 2016

LU Akadēmiskais apgāds
Baznīcas iela 5, Rīga, LV-1010
Tālrunis 67034535
www.lu.lv/apgads

Iespiests SIA "Latgales druka"